Section 1 – Eligible Dwellings

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1.1 Eligible Dwelling Documentation (§440.16(a))

The State Weatherization Assistance Program has developed, published, and implemented procedures that ensure documentation of eligible dwelling, as outlined in Section 4 of the Idaho Weatherization Operations Manual. The Direct Service Provider shall establish income eligibility for low income participants prior to the delivery of weatherization services as described in Section 4.

1.2 Service Area (§440.16(b))

Although scheduling in outlying areas may be difficult during winter months, Direct Service Providers will make every effort to ensure high priority is given to participants in emergency situations, regardless of their dwelling address. In order to address the emergency or first priority situation immediately, the Direct Service Provider's actions may include enlisting the services of a local sub-grantor or addressing the immediate problem creating the emergency and then rescheduling the remainder of the work.

1.3 Native Americans (§440.16(f))

Five (5) Native American Tribes reside in Idaho including the Kootenai, Coeur d'Alene, Nez Perce, Shoshone-Bannock and the Paiute Tribes. DOE allows the State through Direct Service Providers to provide weatherization services to eligible Tribal members living on the reservation.

The Direct Service Providers are to ensure weatherization services are provided proportionately to low-income Native Americans within their service area. The State encourages Direct Service Providers to coordinate and share initiatives with Tribal housing authorities to enhance services to Tribal members within their service territory.

The Direct Service Providers will establish a referral system with the Tribal Councils to ensure eligible Tribal members residing on the reservations are referred quickly and effectively to weatherization services.

NOTE: Native Americans not residing on Tribal reservations will not be included in the referral system, but are eligible for services equally with all other applicants applying for weatherization.

1.4 Service Delivery

Direct Service Providers must complete applications and/or referrals from the Low Income Home Energy Assistance Program (LIHEAP) for any individual who desires weatherization services.

Direct Service Providers are required to certify that a household is eligible on the Participant Assessment Application (Appendix C). After the household has been certified, income eligibility will remain valid one year from the date of the completed Participant Assessment Application

All participants will be prioritized according to State Priority Formula (Appendix F). The highest priority is always given to households in emergency situations without heat. An emergency response system should be maintained during the Direct Service Providers' normal work schedule, and immediate measures should be taken to protect the health and safety of eligible households. Direct Service Providers' closing their weatherization offices for unscheduled holidays during the heating season must be sensitive to current weather conditions and have an emergency response system.

Applications referred to the Weatherization Program, will be processed according to the following procedure:

1. Dwelling address will be checked to determine if it has already received weatherization and the date of service.
2. If the dwelling has not received previous weatherization service, the Direct Service Provider will prioritize the application according to the State Priority Formula.

1.5 Eligible Participant Prioritization (§440.16 (b))

Prior to the expenditure of any grant funds, Direct Service Providers will follow the State Application Priority Formula to ensure no dwelling is weatherized without documentation of participant's eligibility and priority is given to emergency situations, elderly persons, persons with disabilities, families with children, high residential energy users and households with high energy burden~~s~~.

Upon determination of a participant's eligibility the Direct Service Provider will assign a temporary priority number using the State Application Priority Formula (Appendix F). First priority to receive services will be given to those eligible participants with an emergency heating situation. The priority populations for this program are the elderly, persons with disabilities, families with children; or those who have been determined to be a high residential energy user or a household with a high energy burden. The temporary priority number assigned will be used to schedule an energy audit.

The Auditor/Inspector will assign a new priority number to a participant's case file after the audit is completed. The priority number will be based on point factoring and the criteria established in the State Application Priority Formula. The priority number must be clearly displayed in the participant file and on the Job Order Sheet.

1.6 Service Benefit (§440.22(b)

The energy conservation benefit of weatherization low-income rental dwellings should be realized by all low-income tenants. Owners of rental dwellings, where the heat is included in the rent, are encouraged to analyze the conservation benefit and allow the benefit to pass on to the low-income renter in some form of compensation.

1.7 Excessive Services (§440.22(b)

No undue or excessive enhancements are to occur to the value of the dwelling due to services provided through the weatherization program. As a means of ensuring this, Direct Service Providers may limit the number of rental dwellings owned by a single landlord (owner) that are scheduled for completion during the current funding period.

Based on documented evidence a Direct Service Provider may determine that a landlord is taking advantage of the Weatherization Assistance Program by moving tenants (renters) around to get all units weatherized and in order to increase the value of the rental dwelling. When this is determined, the Direct Service Provider may notify the property owner or his/her representative in writing that the maximum rentals allowed within a current program for one owner is three (3), single family or duplex rentals; or two (2), multi-family rental dwellings of three or more.

1.8 Eligible Dwelling (§440.22 (a))

Prior to the expenditure of any sub-grant funds, the Direct Service Providers will ensure that no dwelling is weatherized without documentation that the dwelling is eligible under the following conditions:

- The dwelling must be occupied by a family unit whose income is at or below 200% of the poverty level determined in accordance with criteria established by the Director of the Office of Management and Budget (Appendix B); or

- Contains a member who has received cash assistance payments under Title IV or XVI of the Social Security Act or applicable State or local law at any time during the twelve (12) months preceding the determination of eligibility.

Title IV of the Social Security Act includes Temporary Assistance to Needy Families (TANF); Temporary Assistance to Families in Idaho (TAFI) which was previously known as Aid to Families with Dependent Children (AFDC); children needing protection, Foster Care, Court Appointed Guardians, etc.; and Work Incentive payments for TAFI family members.
Title XVI of the Social Security Act includes Supplemental Security Income for the Aged, Blind and Disabled (SSI).

All qualified aliens, regardless of when they entered the United States, are eligible to receive assistance and services, if they meet other program requirements.

In all cases, if it is determined by reviewing the State's benefit eligibility system that the individual is eligible to receive Food Stamps or TAFI, they are eligible for Weatherization services and besides the application; they do not need to provide anything more. Only if the individual is not eligible for Food Stamps or TAFI do they have to provide the following documentation.

In cases where the dwelling (single or multi-family) is HUD Public and Assisted Housing or a Low Inocme Housing Tax Credit Program, tenant eligiblility does not have to be determined by Direct Service Providers. Per DOE guidance, HUD has a rigorous income qualification process and it has been determined that the Weatherization Assistance Program will not be required to determine income eligibility for tenants of the above mentioned dwellings. The income eligibility documentation should be in the participant file and can be received from the landlord/property manager or their designee. (Appendix A)

1.9 Average Dwelling Cost (§440.18(b))

Each Direct Service Provider will maintain an annually adjusted average cost per weatherized unit as stated in the State of Idaho DOE Weatherization State Plan exclusive of administration, training and technical assistance, financial audit, and liability insurance expenses. The year-to-date average dwelling cost will be monitored monthly and Direct Service Providers will be asked to provide a corrective action plan if their year-to-date average dwelling cost exceeds the average allowed by DOE for the program year. All costs per dwelling in excess of the DOE allowed average will be refunded to the State at the close of the annual sub-grant.

1.10 Eligible Dwelling Expenditure (§440.18(e))

An eligible dwelling is defined as a house, including a stationary mobile home, an apartment, and a group of rooms or a single room representing a separate living quarter occupied by a household who is income eligible for weatherization services. The dwelling must be substantially complete which means the following integral parts must exist:

Stationary foundation	Floor	Exterior and Interior Walls	
Windows	Doors	Roof	Heating system

Weatherization program funds will be not used to weatherize a dwelling under the following conditions:

- A dwelling which is vacant or designated for acquisition or clearance by a Federal, State or local program within twelve (12) months of the date weatherization of the building would be scheduled for completion.
- A dwelling where each installed measure has a SIR < 1.0.
- A dwelling where the combined installed measures have a SIR < 1.0 except dwelling units requiring only State approved Health and Safety measures.
- A dwelling built within the previous five (5) years.
- Re-weatherize dwelling completed after September 30, 1994 or homes previously re-weatherized. This exclusion only applies to dwellings weatherized using Department of Energy funds.

Excluding incidental repair materials; weatherization program funds <u>will not be used</u> for the purchase of cosmetic or enhancement materials which when installed will not reduce energy costs in a cost-effective manner. See Incidental Repair.

Weatherization program funds may be used to weatherize a dwelling under the following conditions:

- If a dwelling has been damaged by fire, flood, or an act of Nature, and repair of the damage to the weatherization materials is not paid for by insurance.
- If a dwelling was previously weatherized between September 30, 1975 and September 30, 1994; <u>and</u>:
    - The applicant meets the eligibility criteria for assistance and the Energy Audit takes into account any previous energy conservation; <u>and</u>
    - The proposed measures and the total job has a SIR $\geq$ 1.0 and does not exceed the DOE average cost per dwelling for the program year.

Note: Re-weatherized dwellings will be tracked separately but will be included in the total completed dwellings to determine the average cost per dwelling.

- If a dwelling is not substantially complete, sections eligible for weatherization must be limited to the portion occupied year around. Measures must be within the scope of DOE WAP grant activities and have a SIR$\geq$ 1.0 individually and together as a total completion.

- If the proposed health and safety measures are within the scope of DOE approved measures.
- Motorized vehicles and travel trailers which have served as a permanent residence for at least one (1) year and where one of the following conditions exists:
  a. Dwelling has a stationary foundation, or
  b. Dwelling has a direct metered utility service i.e. electric, water and sewer; or
  c. Dwelling is not motorized for mobility.

1.11 Re-Weatherized Dwelling Cost (§440.18(e))

The State will reimburse costs incurred to re-weatherize dwellings completed prior to September 30, 1994, excluding dwellings previously re-weatherized. In order to receive these services, the applicant must meet the eligibility criteria for assistance and an Energy Audit must determine that each additional measure(s) will meet the Savings to Investment Ratio (SIR) of at least 1.0.. Direct Service Providers must ensure records are maintained on all dwellings weatherized, including date of completion and address of the dwelling. Dwellings which are re-weatherized must be reported separately and count as a completion.

1.12 Multi–Family Units (§440.22(b)

Duplex or four-plex multi-family buildings may be weatherized if fifty percent (50%) of the dwellings in the building are occupied by eligible tenants. Larger multi-family buildings (five or more units) or tri-plex may be weatherized if sixty-six percent (66%) of the dwellings in the building are occupied by eligible tenants.

A qualified participant occupying a single dwelling unit in a multi-family building which does not meet the required criteria (50% or 66%) may receive weatherization services; however; services will be limited to the single dwelling unit and not include the common areas in the building. Eligibility of multi-family rental dwelling is determined by the type of rental as discussed in the following paragraphs.

Low Income Subsidized Multi-Family Rental Dwellings:

If the dwelling is a low-income rent subsidized complex, proof of the tenant's income may be obtained from Housing Authority and/or property management. The Direct Service Provider must review the proof of income and sign as the verifier. Management for the multi-family dwelling must sign a master Owner/Renter Agreement (Appendix D) for the eligible tenants. An application will be completed for the non-income eligible units, listing the names, address and apartment number and referencing it to the multi-family master application. The property owner or their designee must sign an Owner and Renter Agreement prior to receiving weatherization services. Each dwelling unit shall be assigned a job number and each dwelling unit shall be counted as a complete unit.

Note: Please see 1.8 Eligible Dwellings for clarification on eligibility of tenants in HUD Public and Assisted Housing programs and Low Income Housing Tax Credit projects.

Non-Subsidized Multi-Family Rental Dwellings:

For multi-family dwellings which are not low-income subsidized, an application will be required for each dwelling unit. Once the required number of units has been identified as eligible, applications for the remaining dwellings will indicate only the address and apartment number and services provided based upon the fifty or sixty six percent (50% or 66%) criteria. The owner or their designee must sign an Owner/Renter Agreement for each dwelling to be weatherized. Each dwelling unit shall be assigned a job number and each multi-family dwelling unit weatherized will be counted as a completed unit.

EXCEPTION: LIHEAP Weatherization (LPW) funds may only be used for rental dwelling units where the household's income eligibility has been verified.

1.13 Eligible Shelters (§440.22(f))

Shelters may receive weatherization services. A shelter is defined as a dwelling(s) whose principle purpose is to house, on a temporary basis, individuals including persons who may or may not be related to one another; and who are not living in nursing homes, prisons or similar institutional care facilities. The purpose of the shelter must be consistent with services to the disadvantaged and the shelter must be filed under the Non-Profit Corporate tax status. Direct Service Provider must obtain a copy or verify the dwelling's incorporation filing which indicates the non-profit corporation structure. The owner or their designee must sign an Owner/Renter Agreement prior to provision of weatherization services.

For the purpose of determining how many dwelling units exist in the shelter, each 800 square feet of the shelter may count as a dwelling unit or each floor may be counted as a dwelling unit.

EXCEPTION: In accordance with the Low-Income Home Energy Assistance Program (LIHEAP) Federal Statute and State of Idaho LIHEAP Rules, LIHEAP Weatherization (LPW) grant funds can not be used to weatherize shelters.

1.14 Eligible Group Homes

Group homes may receive weatherization services provided they meet the rental dwelling eligibility requirements. Group homes must be occupied by a majority of tenants who are low-income or receive some type of state aid. The purpose of the group homes must be consistent with the services to the disadvantaged and the homes must be filed under the Non-Profit Corporate tax status. Direct Service Provider must obtain a copy or verify the dwelling's incorporation filing which indicates the non-profit corporation structure. The income eligibility of the home residents will be verified by the Direct Service Provider from management records. . The owner or their designee must sign an Owner/Renter Agreement prior to provision of weatherization services.

EXCEPTION: In accordance with LIHEAP Federal Statute and State of Idaho LIHEAP Rules, LIHEAP Weatherization (LPW) grant funds can not be used to weatherize Group Homes.

1.15 Dispute Resolution (§440.22 (e))

When the participant and/or property owner (called the appellant in this section) has a disagreement regarding the Weatherization Assistance Program, a Fair Hearing Request may be filed with the Idaho Department of Health and Welfare, Legal Office. Prior to the filing of a Fair Hearing Request, the Direct Service Provider will make every effort through informal discussions and/or meetings to resolve the issue(s).

In situations where the matter cannot be resolved at the Direct Service Provider level, the Idaho Department of Health and Welfare's Fair Hearing Request form will be provided to the appellant, with the filing time line highlighted. The time limit for the appellant to file an appeal is as follows:

- Denial, Disagreement or Discrimination of Services - Thirty (30) days from date of service
- Owner/Renter (as set forth in Owner and Renter Agreement- Appendix D) - Ninety (90) days from the date of the final dwelling inspection.

The appellant will be informed that he/she must provide written notification to the Department's Hearing Officer if there is a decision to withdraw the request for hearing.

Upon receipt of the Fair Hearing Request Form, the Department's Hearing Officer will acknowledge receipt of the form and schedule a formal hearing. A copy of the Hearing Officer's decision will be provided to the appellant and to the Direct Service Provider; who will retain a copy of the decision in the participant's file.

Section 2 – Program Administration

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2.1 Purchase of Service Contracts (§440.24)

Direct Service Providers are to conform to DOE's Office of Energy Efficiency and Renewable Energy 10 CFR part 440 (Docket Number CAS-RM-80-508) Weatherization for Low-Income Persons, and Appendix A of 10 CFR part 440. (Appendix A) Said rules and regulations shall be accessible to all Weatherization staff during normal working hours.

Upon approval of the State DOE Weatherization Plan by the DOE Project Management Center in Golden, CO, the State will enter into a contractual agreement with CAPAI for administrative oversight of the Weatherization Assistance Program (the funds set aside for LIHEAP (LPW) Weatherization will be designated in a separate contract). The State is legally authorized to enter into these agreements by power granted by Title 30, Chapter 1 of the Idaho Code. CAPAI will hold the sub-grants for weatherization service provision with the Direct Service Providers. The Direct Service Provider sub-grants shall include the following information:

1. Effective and termination date
2. Amount awarded
3. Estimated Production quota
4. Reporting requirements
5. Compliance requirements
6. Budget by DOE cost categories
7. Record keeping requirements
8. Special conditions, including Equal Opportunity Compliance
9. Certificate of Insurance
10. Annual financial audit requirement
11. Certification of a Drug-Free Work place
12. Certification of Non-Lobbying Activities
13. Certification of Debarment and Suspension from Federal Procurement Activities

2.2 Financial Management (§440.24)

Direct Service Providers, under conditions of their sub-grant, are responsible for maintaining a fiscal management system conforming to standards outlined in; OMB Circular A-110, Cost Principles A-122 & A-133; and the DOE financial rules from 10 CFR part 600. The Direct Service Provider Fiscal Office shall be responsible for maintaining a current copy of these required fiscal regulations.

2.3 Financial Assistance (§440.16(c))

Funding is provided through the DOE Weatherization Assistance Program (WAP), HHS Low Income Home Energy Assistance Program (LIHEAP), Bonneville Power Administration (BPA), utility funding and private investments. The financial assistance provided by DOE will not be used to supplant other program funds, but will be used to supplement funding made available by the State, private investment, and utility companies for the purpose of weatherizing eligible low income dwellings in Idaho.

2.4 Coordinated Funding (§440.16(e))

The Weatherization Assistance Program will continually strive to improve energy efficiency and conserve energy through coordinated efforts with Federal, State, and local programs including utility funding and private investments.

2.5 Labor (§440.19(a))

To provide the most cost effective program, Direct Service Providers structure their program using both employee crew labor and contract labor. Direct Service Providers are encouraged to secure volunteers, training participants and public service employment workers pursuant to JTPA for crew labor and contract labor, particularly from nonprofit organizations or businesses owned by disadvantaged individuals.

2.6 Volunteer Services (§440.16(c))

To provide a cost effective program Direct Service Providers will structure their program using both employee crew labor and contract labor. Direct Service Providers are also encouraged to secure volunteers, training participants and public service employment workers, or other Federal and State training program workers for crew labor and contract labor, particularly from nonprofit organizations or businesses owned by disadvantaged individuals.

2.7 Subcontractors

Direct Service Providers engaged in awarding and administrating subsub-grants using weatherization program funds will have a written procedure to ensure open and free competition while ensuring quality delivery of goods and services. The Direct Service Provider Fiscal office will be responsible for ensuring that the Direct Service Provider procurement standards are complied with when initiating a contract for services. Prior to any payment for services being issued, the Weatherization Program Manager or their designee will verify services are provided in a satisfactory manner and the subcontractor has complied with all terms of the contract.

2.8 Health & Safety (§440.16(h))

The Idaho Weatherization Assistance Health & Safety Program allows for production funds to be utilized for Health and Safety measures. Such measures may not meet the Savings-to-Investment Ratio (SIR) of ≥ 1.0, however th ese measures are necessary to address indoor air quality issues and ensure weatherization activities do not aggravate household's existing dwelling conditions.

Additionally, the Weatherization Assistance Program will allow for Direct Service Provider support expenditures to be utilized for the staff's health and safety needs including; clothing, equipment, training, and meetings to comply with Occupational Health and Safety Administration (OSHA) Standards.

2.9 Installed Measure Requirement

The goal of the DOE weatherization program is to save energy while protecting the health and safety of eligible low-income persons utilizing approved weatherization standards and methods and the current DOE approved energy audit for the State of Idaho. Direct Service Providers must ensure the following requirements are followed during the weatherization process:

1. Each installed measure must have a SIR ≥ 1.0; with the exception of wrapping pipes and health and safety measures.
2. The combined installed measures for the eligible dwelling must have a SIR ≥ 1.0.
3. With the exception of health & safety measures, all material costs related to a measure must be included within the material cost of that particular measure to establish the SIR ≥ 1.0.
4. Any materials purchased with utility and/or private leveraged funds must be included within the material cost of that particular measure to establish the SIR ≥ 1.0.
5. Health and Safety measures must be within the scope of DOE activities. For detailed information, refer to the Health and Safety section of the Manual.

2.10 Average Dwelling Cost (§440.18(b))

Each Subgrantee will maintain an annually adjusted average cost per weatherized unit as stated in the State of Idaho Weatherization Plan exclusive of administration, training and technical assistance, financial audit, and liability insurance expenses. The year-to-date average dwelling cost will be monitored monthly and Direct Service Providers will be asked to provide a corrective action plan if their year-to-date average dwelling cost exceeds the average allowed by DOE for the program year. All costs per dwelling in excess of the DOE allowed average will be refunded to the State at the close of the annual sub-grant.

Note: LPW and BPA funding sources do not have an average cost per unit requirement.

2.11 Sub-grant Production Non-Compliance

Direct Service Providers are expected to comply with contract production requirements and will be monitored by the State and/or their designee to ensure production schedules are maintained. If warranted, the State may request a recovery plan from the Direct Service Provider. The State and/or their designee reserves the right to request additional weatherization program documentation and/or forms including but not limited to

- Job Order Sheets including material costs
- Completed computerized Energy Audit printout
- Subcontractor and/or crew activities documentation
- Participant eligibility file

The State and/or their designee or the Direct Service Provider may request an on-site review of program activities to include but not limited to:

- Scheduling of current production, dwelling energy audits, installed measures and the final inspection process, and all related participant file documentation for reviewed activities.
- Review Direct Service Provider operations structure utilized to accomplish production goals.
- Conduct field review of current production activities of crews while the dwelling is being weatherized.

Following the review, recommendations will be provided to the Direct Service Provider Executive Director and program staff.

2.12 Weatherization sub-grant compliance and remedial plans (§440.24)

Direct Service Providers providing weatherization services to the low income population within their service areas will be given greater responsibility and control over budgeting costs, on site decision making and Weatherization Program management.

The Department of Health and Welfare and/or their designee shall monitor Direct Service Providers as specified in the Monitoring and Training and Technical Assistance Plan. Direct Service Providers in non-compliance with Federal Regulations and/or State Rules or that have serious program weaknesses shall comply with remedial plans which may include but are not limited to the following:

1. Monthly Production Review, as needed
2. Sixty (60) day on-site follow-up review, as needed
3. Specific Training and Technical Assistance
4. Approval of dwellings over average cost
5. Payback of Weatherization funding
6. Sub-grant Probation &/or Termination
7. Monitoring Work Completion Forms (Appendix Q)
8. Development and Implementation of a Corrective Action Plan

2.13 Allowable Cost Categories

The State Weatherization Assistance Program is funded by the DOE WAP grant, the HHS LIHEAP grant, private investments, utilities investment, and Bonneville Power Administration (BPA) funds. Allowable cost categories for the Direct Service Provider weatherization program are restricted to those permitted by the current revision 10 CFR 440 including those described herein (Section and paragraph of 10 CFR Part 440 are referenced where applicable).

Material cost – (§440.18(c) (1))
Only weatherization materials that meet or exceed standards prescribed in Appendix A of 10 CFR Part 440 (Appendix A) will be purchased with weatherization program funds; except for materials purchased for incidental repairs and Health and Safety measures which will be of a quality and grade necessary to complete weatherization measures and maintain a cost effective program. The following costs will be charged to the sub-grant budget 'Material' category:

- All weatherization materials, listed in Appendix A, purchased and installed on eligible dwellings.
- Materials not listed in Appendix A and purchased only for incidental repairs and health and safety measures.

Labor cost – (§440.18(c) (2))
Each Subgrantee will ensure that weatherization program activities are charged to the appropriate cost category. Direct Service Provider may charge the following costs to the 'Labor' budget category:

- Program technician personnel costs while performing weatherization activities
- Costs for subcontractor services related to weatherization activities
- Wages to supplement wages paid by the Department of Labor for training participants in other work-training programs offered by the Federal or State government - §440.19
- Personnel costs for performing weatherization audits, inspections, and installing conservation materials

Support – Other cost
Each Direct Service Provider will ensure their weatherization program includes sufficient staff; including certified Auditor/Inspector(s); to complete sub-grant production requirements. In order to carry out the weatherization program activities, Direct Service Providers may charge the following costs to the 'Support – Other' budget category:

- Costs for transporting crews, Auditor/Inspectors, tools, equipment and weatherization materials between work site, warehouse, and office site - §440.18 (c) (3); including costs related to the maintenance, operation, and insurance of the vehicles - §440.18 (c) (4)
- Purchase and maintenance of all tools and equipment used in weatherization - §440.18 (c) (5)
- Purchase or lease of vehicles - §440.18 (c) (6)
- Cost of on-site supervision - §440.18 (c) (7)

- Storage and/or warehouse costs related to the storage of materials, tools, equipment and vehicles, fire and theft insurance, utilities, and rent. - §440.18 (c) (8)
- Personnel costs for staff not directly working on the completion of a dwelling including inventory clerks, office managers and record clerks. Personnel time sheets must reflect the hours spent in Support - Other activities
- Personnel training costs if T & TA funding has been exhausted
- Weatherization program management time not directly related to a particular project
- Costs related to determining applicant eligibility

Incidental repair cost (§440.18(c) (9))
The cost of incidental repairs completed to make the installation of weatherization materials effective is an allowable cost in the 'Material' category. The incidental repair material costs will be included in the measure and the combined cost of the measure must have a SIR $\geq$ 1.0.

Liability insurance cost (§440.18(c) (10))
Liability insurance for weatherization projects for personal injury and property damage is required. Full coverage in the amounts identified in the weatherization sub-grant must be in force for the duration of the sub-grant period. Liability insurance is not included in the computation of the cost of weatherized dwellings. Bids for Liability insurance coverage must be solicited and selection must be based upon the lowest annual cost for comparable insurance coverage. No other Direct Service Provider insurance costs (i.e., automobile, premise liability, bonding or workers compensation) are to be included in the 'Liability insurance' cost category.

Low cost/No cost (§440.18(c) (11)
A maximum of ten percent (10%) of the Direct Service Provider production allocation may be budgeted for this category, however no labor costs should be charged to this category. Low Cost/No Cost expenditures on each dwelling may not exceed fifty dollars. Low-Cost/No-Cost weatherization activities are further described in §440.20.

Financial audit cost (§440.18(c) (12))
A separate budget category is permitted to cover 'Financial Audit' costs. Financial audit costs will be reviewed and approved on the sub-grant budget summary each program year. Direct Service Providers will charge <u>only</u> the percentage that the weatherization program budget represents to their total funding budget, not to exceed $5,000. Excess costs charged to the weatherization financial audit budget category will be disallowed. When the cost of the financial audit has been included in the Direct Service Provider approved 'Indirect' rate, the financial audit cost category is not allowed and any funds budgeted for financial audit costs will be included in the production budget categories.

Administrative cost (§440.18(c) (13))
The State will provide the amount of Administration cost funds to the Direct Service Providers in accordance with current DOE regulation. Direct Service Provider's administrative expenditures will be monitored to ensure budgets are not exceeded, and are expended in proportion to the total expenditures of the other cost categories.

Indirect Rate - A Direct Service Provider having an approved 'Indirect' rate shall charge administrative costs as indirect. A copy of the current Direct Service Provider's federally approved Indirect Rate plan shall be provided to the State or their designee.

Direct Rate - For Direct Service Providers without an approved Indirect Rate, 'Direct' rate administrative costs relating to weatherization program activities/goals include the following:

- Personnel:
  - Salaries and wages for administrative personnel, including weatherization program management
  - Advertising for personnel or program promotion
  - Travel relating to program activities/goals
- Accounting:
  - Fiscal payment and reporting process
  - Banking handling/service fees and associated costs
- Operation:
  - Office equipment, supplies, postage, printing
  - Utilities, telephone, space
  - Depreciation or use fee for equipment or buildings purchased with non-federal and non-state funds
- Consultants:
  - Legal fees
  - Computer System

Leveraging – Non-Federal funding cost (§440.18(c) (14))
Direct Service Providers shall coordinate their weatherization efforts with all Federal, State, local, or privately funded programs to maximize energy efficiency and conservation activities. Leveraged funds will be used to supplement the DOE WAP grant and increase the number of dwellings that are weatherized.
Any payment received from non-federal funding sources will be applied to weatherization costs as allowed by that program. Direct Service Provider accounting records for all weatherization program activities must be available for State or their designee to review to ensure that funded costs were collected from only one funding source and that the weatherization program received full reimbursement. Without exception, duplicate payment of costs is unallowable.

Health and safety cost (§440.18(c) (15))
The costs of eliminating health and safety hazards which are necessary before, or because of installation of weatherization materials is an allowable cost to the Health and Safety category.

The average Health and Safety cost (materials, labor and support) will comply with all Occupational Safety and Health Administration (OSHA) standards. Allowable measures are defined in the Health and Safety Program section of the Manual.

Training and Technical Assistance Cost (§440.23(e))

A budget category is permitted to cover training and technical assistance costs. Based on the DOE Training and Technical Assistance funding allocation each program year, the State or its designee allocates funds equitably to all Direct Service Providers. Training and technical assistance funds will be utilized by Direct Service Providers for Weatherization Department staff attendance at State, Regional and National Conferences and training workshops intended to enhance employee knowledge and work performance. The following costs will be charged to the contract training and technical assistance budget category:

1. Costs of staff registration, transportation, lodging, meals and other associated costs for approved conferences, workshops, quarterly meetings or other approved training activities both in-state and out of state.
2. Employee time spent attending approved training activities may be charged to this category. Time Sheets must reflect the deviation from production time and record the actual hours production staff spent in training activities.
3. Participant energy education activities.
4. Employee time spent providing assistance to other Direct Service Providers (peer exchange training).

2.14 Additional Administrative Cost (§440.18(d))

A maximum of ten percent (10%) of the total of the grant allocation may be expended for Direct Service Provider administrative costs. The State Energy Efficiency Programs Improvement Act of 1990 allows for up to an additional five percent (5%) for administration for Direct Service Providers whose total allocation is less than $350,000. Direct Service Providers with DOE approved budget of less than $350,000 may be allocated up to an additional five percent (5%) based on an approved indirect rate or Cost Allocation Plan, as justified on a Contract Budget Summary.

Section 3 – Property Management & Material Inventory

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3.1 Property Management

Direct Service Providers are required to protect and account for all assets obtained with weatherization program contract funds. The procurement, inventory control, and property management procedures must be in writing and meet all Federal and State regulations.

The Direct Service Provider will designate responsibility for purchasing and maintaining records on all property, equipment, and non-expendable supplies purchased with weatherization program funds received from the State. The 10 CFR 600 and A-110 Procurement regulations must be followed in all property management.

3.2 Capital outlay

Prior to the purchase of capital outlay equipment (i.e. computer system and hardware, vehicles and equipment with acquisition costs in excess of $5,000); the Direct Service Provider Fiscal Officer must ascertain that the funds are available in the budget; the item is consistent with program goals and authorization has been obtained from the State or its designee. Authorization to purchase capital outlay items will be negotiated on the budget summary prior to or during the program contract period when DOE funds are to be used for the purchase. Any capital outlay purchases must be included in the State DOE State Weatherization Plan and final approval for the purchase will be obtained from DOE. All capital outlay purchases with a cost at or greater than $5,000, with two (2) years of life expectancy, must be approved by the State or its designee, prior to purchase.

3.3 Purchasing

All procurement of goods, materials and services must be conducted in a manner to provide open and free competition. Direct Service Providers are encouraged to participate in the Central Bidding Program for purchase of goods and materials to obtain the lowest price. Direct Service Providers who do not participate in the Central Bidding Program must establish written bidding procedures that provide for open competition, availability, cost and technical performance.
Bidding procedures must be followed when the aggregate purchase price for like items meets or exceeds the bidding threshold limits within a contract period. Aggregate purchase price is total price of like items, not the total price of all items included on a single purchase order. Direct Service Providers are encouraged to purchase like items through as few purchase orders as reasonably possible during the contract period. A reasonable quantity of purchases should also be based upon historical purchases, warehouse space, and other pertinent criteria. Direct Service Providers must follow the purchasing requirements set forth in the current weatherization contract.

EXCEPTION: In emergency situations, or where a life threatening condition may exist for a household, a waiver on the three bid requirement is granted by the State or its designee.

3.4 Vehicle Purchase

All vehicles purchased with DOE funds must be approved by the State or its designee and the DOE regional office. The Direct Service Provider will submit correspondence for "request approval to purchase" to the State or it's designee with a detailed description of the vehicle, a copy of the bid solicitation letter and copies of the submitted bids. Upon receipt of the request, the State will submit a formal approval request to DOE. Direct Service Providers are encouraged to plan vehicle purchases prior to annual submission to the State DOE Weatherization Plan (normally in January) in order to obtain DOE approval in a timely and efficient manner.

Ownership and titles of all vehicles purchased with weatherization contract funds shall be retained by the Direct Service Provider. When the vehicles are no longer required by the weatherization program, the Direct Service Provider shall follow approved disposal procedure as described in the "Surplus Equipment and Material Disposal" section. Any funds recovered from the disposal shall be tracked by the Direct Service Provider Fiscal Officer and returned to the funding source from which the purchase was made. The Direct Service Provider will comply with the following:

1. Maintain liability insurance on each vehicle while in agency possession;
2. Maintain each vehicle in the condition received, except for normal wear and tear, and to maintain the vehicle in accordance with the manufacturer's recommended maintenance schedule;
3. Not permitting any encumbrances or liens to be placed upon, or assign property rights over to any entity other than an agency designated by the State or it's designee;
4. License and register each vehicle in accordance with the law and pay all costs associated therein; and
5. In the event of damage to a vehicle, make diligent efforts to recover from the Direct Service Provider's insurance company, or any other third party that may be liable, and to apply any recovery toward repair or replacement, if necessary.

3.5 Property and Equipment Records

Direct Service Provider property management procedures must be in writing and will be monitored for compliance. A record of all property and equipment with a purchase price of $300 or more or, with usage period exceeding one year must be accurately maintained and shall include the following:

1. A full description of the equipment.
2. Manufacturer's serial number, model number, federal stock number, national stock number or the identification number.
3. Source of funds used to purchase the property including contract number.
4. Where the title is located and who holds the title.
5. Acquisition date and cost, including all taxes, freight charges, and other fees.
6. Percentage of Federal participation in the cost of the program for which the property was purchased (i.e. Weatherization - federal participation is 100 %).
7. Unit Acquisition cost.

8. Location, use and condition of the property and the date information were recorded.
9. Disposition data, including date of disposal, method used to determine fair market value, and, if sold, sales price. If the Federal Government is compensated for the sale, the method used for determining the fair market value is required. Records shall be retained for three (3) years after final disposition.

Annually, a physical inventory of program property must be performed, and the inventory records documented with all property purchased with weatherization program grant and non-federal funds. A quality control system must be implemented at each Direct Service Provider to insure adequate safeguards are in place to prevent loss, damage or theft of property. Direct Service Provider must maintain adequate recovery insurance on the property. Equipment and vehicles purchased with weatherization contract funds shall be identified as property of the State and or its designee.

3.6 Small Tool Records

Small hand tools shall refer to small tools used in the weatherization program whose acquisition price is more than $300 with an expected life of more than two (2) years. Direct Service Providers shall establish a control system to ensure maintenance and adequate safeguards to prevent loss, damage or theft. An inventory record shall be maintained and include the following information:

1. Description of tool
2. Identification numbers (manufacturer's serial numbers, agency property numbers, model numbers, etc.)
3. Source of funds used to purchase small tools including contract number4. Acquisition date
5. Acquisition price
6. Who the tool is checked out to
7. Condition of tool
8. Inventory dates
9. Ultimate disposition including date of disposition, sales price, method of determining fair market value, identification of returned funds to offset future small hand tool purchases.

A physical inventory of all small tools shall be completed annually and/or as weatherization personnel changes. Any loss, damage, or theft shall be investigated and fully documented identifying procedures taken for recovery. Documentation will be reviewed during the annual program monitoring. Adequate maintenance procedures shall be implemented to insure small hand tools are in good working condition and in compliance with OSHA standards.

3.7 Material

Materials assigned from the warehouse or storage inventory must be accounted for, without exception, on the Weatherization Information Tracking Systems (WITS) and must be traceable to completed weatherized dwellings. Under the direction of the Direct Service Provider Fiscal Officer, the weatherization program manager is responsible for the assignment of program personnel who have access to stored inventory materials. Materials must be maintained in a safe and secured location which prohibits opportunity for fire, damage, theft or loss.

The Direct Service Provider program manager under the direction of the Fiscal Office is responsible for implementing an inventory check-in and check-out procedure to ensure inventory access accountability. Through the utilization of the inventory check-in and check-out records, WITS will be updated with the Job Number where the materials were assigned and their dollar value. WITS records must be reconcilable with the Job Order Sheet material costs according to the final Inspection.

Only assigned Direct Service Provider personnel will be permitted access to the material inventory. Persons receiving materials from the inventory must sign to check-out materials from inventory and will be responsible for checking-in unused materials to the inventory storage area.

3.8 Material Inventory Control

All materials (standard and specialty items) stored in a warehouse for more than one (1) day are considered assets of the Direct Service Provider and are under the responsibility of the fiscal office. The security and accountability for these assets will be charged to the Fiscal Office.
The Fiscal Office will develop an inventory recording system, utilizing WITS, which ensures all materials purchased with weatherization funds can be accounted for at all times. The fiscal officer will be responsible for assuring that the system is being utilized accurately.

3.9 Physical Inventory

At least twice annually, the Fiscal Officer or their designee must take a physical inventory count of all materials on hand in the warehouse and reconcile the actual count to WITS. Inventory materials check-in/outs should be reconciled to the Job Order Sheets and the final energy audit/inspection for completed dwellings. WITS reconciliation printout records must reflect the dates of the reconciliation and indicate less than a two percent (2%) variance. The Direct Service Provider must maintain the reconciliation printout records for Federal, State and/or CAPAI review.

When the variance exceeds the two percent (2%) maximum, the Fiscal Officer or their designee will ensure mathematical errors have not occurred and check-in and check-out procedures have been followed; and develop a plan of action to address the variance for immediate implementation.

3.10 Surplus Equipment and Material

The State recognizes that surplus equipment and material has a limited economic or useful life and that the storage, maintenance, transportation and other costs associated with maintaining surplus equipment and material may exceed the inventory value or fair market value. When the recipient no longer needs the equipment, the equipment may be used for other activities in accordance with the following standards:

- For equipment with a current per unit fair market value of Five Thousand Dollars ($5,000) or more, the recipient may retain the equipment for other uses provided that compensation is made to the State or program if required.
- The amount of compensation shall be computed by applying the percentage of federal funding participation in the cost of the original project or program to the current fair market value of the equipment.

If equipment or material is worn out, unsafe, beyond repair or damaged, it will be disposed of immediately. Surplus equipment and material with any historical significance should be noted and the Idaho State Historical Society notified.

Surplus equipment and material that is judged to still be usable will be identified and a **SURPLUS EQUIPMENT AND MATERIAL DECLARATION** will be filled out. In disposal of the surplus equipment and materials the State expects Direct Service Providers to maximize the value benefit to the low income participants. Direct Service Providers will establish proper sales procedures to provide for fair and open competition which will result in the highest return on the disposed property. The State or its designee must also approve any property considered for sale, prior to its disposal.

Annually, or as needed the Direct Service Provider will submit a written request for disposal to the State and will send copies of the surplus equipment and material declaration to each Direct Service Provider weatherization program to give them an opportunity to acquire the surplus equipment and materials. This information will also be retained to support the transaction for auditing purposes. Depending upon the fair market value the surplus equipment and material will be disposed of as follows:

Surplus equipment and material with an estimated fair market value of <u>Five Thousand Dollars ($5,000) or less</u> will be disposed of as follows.

1. Sell or give the surplus equipment and material to another Direct Service Provider weatherization program Direct Service Provider without public advertisement or receipt of competitive bid;
2. Sell the surplus equipment and material at a regularly held public auction conducted by a licensed auctioneer;
3. Sell the surplus equipment and material to the party offering the highest bid submitted in response to notice of public sale advertised in a newspaper of general circulation in the area of the sale; or
4. Sell the surplus equipment and material to the highest bidder at a contracting agency public auction which is to be advertised in the newspaper of general circulation in the area where the auction is to be held.

Surplus equipment and materials individually or cumulatively valued in excess of <u>Five Thousand Dollars ($5,000)</u> shall be disposed of in accordance with Idaho Code 67-5732A as follows:

1. Sell the surplus equipment and material at a regularly held public auction conducted by a licensed auctioneer;
2. Sell the surplus equipment and materials after receipt of sealed bids, to the highest bidder, after thirty (30) days notice of such sale, giving the time and place and any sale conditions, published in a newspaper in the county where equipment and materials are to be sold.

All proceeds from the sale of surplus equipment and material must be allocated to offset costs of replacement and/or future equipment and material purchases. Direct Service Providers shall be permitted to deduct and retain $100 or ten percent (10%) of the proceeds, whichever is greater, for their selling and handling costs.

Pursuant to Idaho Code 67-5726, all employees (including spouses and dependents of employees) of the Direct Service Provider are prohibited from acquiring surplus property from their own agency. **Employees may acquire surplus equipment and material from other Direct Service Providers only if the property is acquired through a competitive bid process.**

Any surplus equipment and material not sold should be recycled with any proceeds paid to the State. If not recyclable and having no further value, the surplus equipment and material must be disposed of by the Direct Service Provider, by shipment to the local refuse dump site. Any exceptions to these policies must be approved by the State or its designee.

When acquiring replacement equipment, the recipient may use the equipment to be replaced as trade-in or sell the equipment and use the proceeds to offset the costs of the replacement equipment subject to the approval of the State or its designee.

Section 4 – Program Management

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4.1 Program Management (§440.16(g))

The Program Manager is responsible for compliance with Federal and State guidance regarding provision of Weatherization activities, as outlined in the Idaho Weatherization Operations Manual.

4.2 Billing Procedures (§440.24)

A Department of Health and Welfare cost reimbursement form is to be used by the Direct Service Provider to report cost expenditures and request payment reimbursement. The reports are due to the CAPAI no later than the tenth (10th) working day following the previous month's activities and no more frequently than weekly. Reimbursement reports are prepared by the Fiscal Office, approved by the Fiscal Director and the Executive Director or their designee and submitted to CAPAI. Payments will be issued on the basis of the current reported expenditures. The State or their designee reserves the right to request supporting documentation of expenditures reported on the monthly Reimbursement Report.

4.3 Reporting Requirements (§440.24)

Direct Service Providers shall submit to CAPAI, by the **tenth (10th) working day** of each month the following:

1. The monthly WITS Report – including client information and demographics
2. The monthly Reimbursement Report

The reports are to be submitted to CAPAI, for review, approval and submission to the State for reimbursement payment.

4.4 Participant Assessment Application Intake (§440.22(a))

Information required on the Participant Assessment Application (hereafter stated as the Application) should be obtained directly from the participant, either at the Direct Service Provider office whenever possible or through a home visit. If circumstances prevent the Direct Service Provider from completing the application with the participant, then the application and all required forms may be mailed to the participant. Prior to the application being mailed, the material must be explained thoroughly and the participant informed that their household income documents must be returned with the application in order for it to be processed.
Exception: If the applicant has been previously income verified and qualified for LIHEAP, the application and documentation on file may be used to determine eligibility for weatherization services.

All applications must be signed by the participant or their designee. Applications signed by a designee will require a letter from the participant designating signature authority and this letter will be retained in the participant's file. Unsigned applications will not be processed by the Direct Service Provider.

A Direct Service Provider's representative can not sign as designee for the participant.

In cases where the application is completed through the mail, the Direct Service Provider will make copies of the original income documents and verify the household's eligibility. The original documents may be returned either by mail or in person. After the household's eligibility is determined, an energy audit will be scheduled according to priority guidelines

Household income includes income of legal and undocumented individuals. The total gross income from all individuals that live in the dwelling is the total household income.
NOTE: The Weatherization household consists of all legal individuals for purposes of determining program eligibility. The only exception is when there is a health and safety issue caused or made worse by the dwelling that is documented and verified by a third party (i.e. doctor, caseworker). In this case, all people living within the dwelling are counted in determining program eligibility.

Required Documentation:

- LIHEAP Application, if referred from LIHEAP- copy of complete application including income verification or comment in Weatherization Assistance Program file that verification is included in LIHEAP file
- Wage stubs or employer wage statements reflecting employee name and/or social security number. If there is an interruption in the employment, please note in the 'comments' section of the application. Wages from a bank statement do not reflect gross income.
- Benefit award letters from a public or private agency/institution.
- Social Security benefit statements/ award letters
- Department of Health and Welfare EPICS online database- applies if applicant is currently enrolled in IDHW programs such as Food Stamps, Medicaid, or TAFI
- Department of Labor Monetary Determination Notice
- Insurance, Interest or Retirement Benefit statements
- Dividends or Investments statements
- IRS Form 1040 or State Tax Forms/Statements

Income Exclusions:
All income is included in the household's eligibility determination, except income from the following sources (IDAPA 16.04.151.01 and WPN 09-5):

- Benefit payments from Medicare Insurance
- Private loans

- Reverse Mortgage Payments
- Withdrawals from personal bank account, including proceeds from sale of real property not reinvested within three (3) calendar months of sale
- Trust, when the corpus or principal was contributed by the applicant
- Sale of real property, if funds are reinvested within three (3) calendar months of sale
- Income tax refunds, including EITC payments in regular pay period
- Infrequent, irregular or unpredictable income from gifts and/or lottery winnings less than $30 during the previous one (1) month period or one (1) year period
- Wages or allowances for attendant care when the attendant resides in the household of the disabled member
- Interest income of $30 or less received during the previous one (1) month period or one (1) year period
- Legal fees or settlements from Workers' Compensation paid in a lump sum
- Money for education from NSDL, work study, State Student Incentive Grants, SEOG, Pell, Guaranteed Student Loans and Supplemental grants funded under Title IV, A-2
- Money from the VA-GI Bill for education
- Military Housing Allowance received for housing of military families
- Department of Health and Welfare Adoption subsidies
- Compensation to volunteers in the Older Americans Act or Foster Grandparent Program, including Experience Works and Vista volunteers, Title V Senior Employment program
- Third party payments to the household made by a non-household member on behalf of the household (childcare, energy assistance funds, shelter, food and clothing assistance)
- Value of Food Stamps or donated food to household
- Utility allowance
- Temporary Assistance to Families in Idaho (TAFI) lump sum payments
- Any other lump sum payments though not specifically listed
- Tribal crop or land payments
- AmeriCorps stipend
- Child Support Payments

NOTE: Exclustion of child support payments in determining income eligibility only applies to dwellings weatherized using Department of Energy (DOE) funds, this exclusion does not apply to LIHEAP (LPW) funding.

4.5 Participant Case File (§440.22(a))

A participant case file must be maintained for each eligible dwelling and secured for household confidentiality. The case file must contain all pertinent documentation to support receipt or denial of services or a reference to the pertinent documentation location. A job order number will be assigned to each participant file.

All Participant files shall be retained by the Direct Service Provider indefinitely as required by the Re-weatherization Procedures, Section 1.
Exception: In cases where the Direct Service Provider no longer operates the Weatherization Program, participant files and all supporting documentation (paper and computer records) shall be returned to the State or its designee.

4.6 Written Permission of Rental Dwellings (§440.22(b))

Rental dwellings are eligible for weatherization when they are occupied by an income eligible 'renter' or participant. Once the participant is determined eligible for weatherization services and prior to scheduling the Energy Audit, they must sign the agreement and agree to accept the special conditions outlined in the Owner and Renter Agreement (Appendix D). The property owner must also sign the Owner and Renter Agreement prior to completion of the energy audit. The original agreement must be kept in the eligible participant's file.

4.7 Property Owner Investment (§440.22(c))

Owner investment is defined in the State Weatherization Assistance Program as a voluntary contribution by the owner of a dwelling through the provision of direct cash investment or through indirect investment.

The Direct Service Providers are encouraged to request a voluntary investment of up to 20% of the estimated job cost from the building owner by completing the Owner Investment Form (Appendix R). If the owner agrees to provide an investment, the Direct Service Provider will document the file and determine the job priority based on the Application Priority Formulas (Appendix F) including any applicable owner investment points.
A Direct Service Provider cannot refuse to weatherize a dwelling unit if a participant has applied, and the owner gives permission even if no investment is made.

4.8 Owner and Renter Agreement (§440.22(c))

Whenever a building is to be weatherized where the eligible participant for weatherization services is not the occupant owner, an Owner and Renter Agreement (Appendix D) between the Direct Service Provider and the Owner must be signed before work can begin. The agreements are intended to provide protection for the participant, the Direct Service Provider and the Owner. To obtain legal authority to enter the building, the Owner must sign the Owner and Renter Agreement. The original will be retained in the participant's case file.

When the Owner and Renter Agreement is signed and returned, and the required eligibility documentation is completed, the Direct Service Provider will prioritize the dwelling according to the State Priority Formula.

As a condition of having assistance provided under this part with respect to multi-family buildings, a Direct Service Provider may require financial participation, when feasible, from the owners of such buildings. Such financial participation shall not be reported as program income, nor will it be treated as if it were appropriated funds. The funds contributed by the landlord shall be expended in accordance with the agreement between the landlord and the Direct Service Provider.

4.9 Property Owner Investment Disbursing and Recording (§440.22(d))

Direct Cash Investments:

Cash received is considered a direct investment and will be treated as leveraged funds. It will be applied to materials, labor, or support proportionate to the allocation of expenses associated with weatherizing the owner's building and will be recorded according to the following procedures:

1. All funds provided to the Direct Service Provider by the property owners to pay for improvements will be placed in a restricted interest bearing ledger account established solely for this purpose (Owner Investment Account). No funds other than direct cash investments will be placed in this ledger account. Receipt of the cash will be recorded on the Owner Investment Form (Appendix R) and a copy given to the property owner.
2. Principle amounts deposited in the Owner Investment Account will not be removed until work is completed as listed on the Job Order Sheet (JOS) (Appendix H) and inspected by an Auditor/Inspector. Amendments to the original scope of the work must be noted on the original JOS.
3. Any direct cash investment in excess of the total cost of the weatherization work will be refunded to the property owner.

Interest earned on the principle in the Owner Investment Account will remain in the account until the close of the current program year. The total interest amount will be retained by the Direct Service Provider and used no later than the end of the subsequent program year to offset the total allowable expenses under the current sub-grant.

Indirect Investments:

Indirect investments include the following type of investments and are considered acceptable property owner investments:

- Energy conservation measures paid for and installed by the property owner or his agent in accordance with DOE Weatherization Assistance Program standards.

- Health and Safety measures designed to protect the health, safety, and security of the eligible participants, as outlined in the Idaho Weatherization Operations Manual, Health and Safety Program.
- Incidental repairs necessary for the effective performance or preservation of weatherization materials.

Indirect investments will be considered leveraged funds the same as direct investments. To support property owner indirect investments, copies of receipts for labor and material costs will be included in the participant file. Indirect investments will be tracked by the Direct Service Provider and reported to the State or its designee as leveraged funds.

4.10 Participant Energy Education

Energy conservations involves not only energy weatherization measures but also requires educating program participants. Participant education is considered an important component of the Weatherization Program. Everyday living habits greatly influence energy consumption and it is the responsibility of the Weatherization Program to educate the participant in changes of lifestyle so that together, with the weatherization measures, the maximum conservation of energy is realized. Each Weatherization Program will coordinate with LIHEAP to provide Energy Conservation Education, which will assure participants receiving weatherization services are also provided with energy conservation information. Continued awareness, innovative ideas and attention will be given to Energy Conservation Education. Costs related to Energy Conservation Education can be reimbursed by the DOE Training and Technical Assistance cost category.

Energy Conservation Education Procedure described in the LIHEAP Intake Manual requires Direct Service Providers to provide Energy Conservation Education to each participant as part of the eligibility criteria for the Low-Income Home Energy Assistance Program.

The procedure includes the distribution and discussion of printed materials/handouts as part of the weatherization audit and final inspection process. Additional Participant Energy Conservation Education includes but is not limited to:

1. Auditor/Inspector provides one-on-one conservation information pertaining to weatherization measures and energy savings during audit/inspection activities.
2. Printed conservation material is given to each participant household. This material includes several conservation booklets (also available in Spanish), an activity and coloring book targeted for 4 to 12 year old children, Wood Stove handbooks, Mobile Home handbooks and materials which are provided by the utilities.
3. Structured Participant Education Component with Direct Service Providers and utilities, Bonneville Power Administration's Client Education Program, LIHEAP or any other program as outlined in the State DOE Weatherization Program Plan or LPW Sub-grant.

Regional Minimum Standards:

IN-OFFICE - Participant education shall begin during the first contact with the participant. Intake areas will display energy education materials, conservation ideas, posters, handouts, etc. Intake personnel and/or Energy Education will assess the participant's immediate needs during the intake procedures and focus on as least one of the areas that will have an impact on the participant. This first initial education can be presented in a variety of ways, using energy conservation printed materials, utility information, etc.

EDUCATION WORKSHOP - Participant education can continue in an Energy Education Workshop. Workshops are most effective in groups not to exceed thirty (30) and in duration of between one (1) and two (2) hours. Workshop areas will display education materials as noted above. Energy Educator and/or Workshop facilitator shall assess the energy needs of the attending participants, focusing on at least three (3) common energy conservation areas that will have an impact on the needs of the participants, and developing or reinforcing commitments. They can be presented in a variety of ways using the aforementioned materials. All workshops should be evaluated, analyzed and reported as to provide valuable tools for the Weatherization Program. Low Cost/No Cost materials can be provided to households as an incentive for attendance at the educational workshop.

ON-SITE HOME VISIT - Home visits are the most effective form of participant education and could have a duration of thirty (30) minutes to two (2) hours. The Energy Auditor (with normal activities) and/or Energy Educator shall provide one-on-one conservation information to as many of the household members as possible, assessing the household's energy needs, comfort, costs, health and safety and focusing on the lifestyle changes which maximize the energy conservation potential. On-site education also provides an opportunity for the Energy Auditor to review participant utility billings and review maintenance of weatherization measures to ensure consistent and long lasting operation. On-site home visits can be presented as above and evaluated for improvements.

4.11 Low cost/No cost dwelling (§440.20(a))

It is extremely important Direct Service Providers identify potential low-cost/no-cost dwellings so households are not denied services at a later date. The participant will be thoroughly interviewed during application to determine what types of weatherization measures were previously installed. In some cases, it will require the Direct Service Provider to contact the owner on rental dwellings. Prior to the audit, the Auditor/Inspector may be able to determine from the information if the dwelling will require only minor adjustments or measures under the $50 limit for low cost/no cost weatherization.

As part of low-cost/no-cost weatherization services, Auditor/Inspectors are to distribute and discuss with the participant printed Energy Conservation Education materials. The Auditor/Inspector will install the low-cost/no-cost materials in situations where the homeowner or renter cannot apply them.

Multi-family apartment dwellings may be eligible for the low-cost/no-cost weatherization services. Direct Service Providers will determine the number and type of low-cost/no-cost materials to provide to each apartment dwelling. Low-cost/no-cost weatherization materials include: compact fluorescent light bulbs, water flow controllers, furnace or cooling filters, and items which are primarily directed toward reducing infiltration (weatherstripping, caulking, glass patching and insulation).

The low-cost/no-cost materials checked-out from the inventory warehouse must be accounted for without exception and trackable to dwellings receiving the low-cost/no-cost measures. The WITS Inventory Records must show the low-cost/no-cost dwelling job number where the materials were installed or left with the participant and the dollar value. The WITS Inventory Records must be reconcilable and a copy kept in the Participant file. Low-cost/no-cost inventory records should be reconciled monthly.

Labor costs incurred for installation of materials on low-cost/no-cost dwellings must be charged to the Labor Cost Category and not to the Low-Cost/No-Cost Cost Category.

4.12 Emergency Response

The agencies/sub grantees will maintain an inventory of portable electric space heaters to provide to participants in **no-heat** situations during the heating season. Homes with inoperable or unsafe heating systems will be given emergency priority, and the heating system will be repaired or replaced as soon as possible. Space heaters will be returned to the agency when the home has a safe, operational heating system.

Section 5 - Oversight

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SECTION 5 – Oversight

5.1 Program Monitoring (§440.23(a))

The monitoring process provides an opportunity for new ideas, systems and solutions to be shared between Direct Service Providers and the State or its designee to carry out the Weatherization Program Mission: "To increase energy efficiency, reduce energy expenditures and improve the health and safety for Idaho's low-income households". Monitoring is the single most important management tool used by the State or its designee to ensure Direct Service Providers establish and maintain polices and procedures that comply with DOE regulations and State of Idaho rules governing the Low Income Weatherization Assistance Program. Monitoring allows the State or its designee to determine the efficiency and effectiveness of the program services and identify areas where additional Direct Service Provider training and technical assistance is needed.

As a program function, it is the intent of the State for monitoring to allow designee staff an opportunity to provide more technical assistance and specific on-site training to Direct Service Providers. On an ongoing basis, the State or its designee shall review participant file documentation, service reports and participant surveys. This will allow the State and/or its designee to identify issues and provide training and technical assistance to resolve issues throughout the sub-grant period, rather than after its closure.

As part of the monitoring process, the State and/or its designee will conduct on-site visits to each Direct Service Provider at the close of the DOE sub-grant period. The focus of the on-site visits will be to provide training and technical assistance and conduct inspections of weatherized homes. The State and/or its designee will continue to conduct the annual sub-grant closeout review. Based upon the annual review findings, any activities found to be in non-compliance will be resolved by the Direct Service Provider. All critical non-compliance findings resulting in the Direct Service Provider's sub-grant being put on probation or terminated will be reported to the DOE -Project Management Center (PMC) office in Golden, Colorado.

5.2 Periodic Evaluations (§440.23(b))

DOE and Health and Human Services (HHS) conduct periodic reviews of the State of Idaho, Department of Health and Welfare as it pertains to Weatherization Services and may include reviews of the Direct Service Providers jobs and accompanying records for programs under this part.

5.3 Access to Records (§440.23(c))

The Direct Service Provider shall provide all required file record documentation and assure staff availability during annual sub-grant monitoring and any other review deemed necessary by the State and/or its designee, DOE, or HHS. File record documentation shall include but is not limited to participant eligibility files, financial documentation records, asset, equipment and material inventory records.

All fiscal records are to be retained in a secure on-site location for three (3) years, unless needed for ongoing litigation/audit. All program records shall be retained in a secure location indefinitely as required for Re-Weatherization services.

5.4 Financial Audits (§440.23(d))

Financial Audits shall be performed in accordance with the Single Audit Act, 10 CFR part 600 and OMB Circular A-133. Completed audits and documentation of Direct Service Provider Board of Directors' correspondence regarding audit will be submitted to CAPAI on an annual basis.

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6.1 Program Manager (§440.16(g))

To ensure qualified personnel are managing the Weatherization Programs, the State requires all Program Managers satisfactorily complete the Energy Auditor/Inspector Certification Program.

The Program Manager is responsible for compliance of the State Weatherization Sub-grant and Weatherization activities, as outlined in the Idaho Weatherization Operations Manual.

6.2 Energy Auditor/Inspector

Energy Auditor/Inspectors with current Certification are vested with the authority to approve the appropriate measures and materials needed for each dwelling. This position ensures only cost effective conservation measures are installed on an eligible dwelling and participants are provided conservation education.

The Program Manager will ensure a State Certified Auditor/Inspector performs an energy audit and inspection of all dwellings eligible scheduled to receive weatherization. Auditor/Inspector activities include but are not limited to:

1. Comply with all requirements of the Idaho Weatherization Operations Manual.
2. Complete Audit/Inspection of eligible dwelling, including all required testing, as outlined in the Idaho Weatherization Operations Manual.
3. Energy Audit/Inspection determines if proposed measures in the computerized Energy Audit are allowable measures with a savings-to-investment ratio (SIR) of one (1.0) or greater.
4. Accurately complete the Job Order Sheet with all the required Audit/Inspection Information.
5. Explain health and safety conditions which are beyond the scope of DOE to participant and prepare a written response to participant, with a copy in the file.
6. Under the direction of the Program Manager, encourage investments from property owners to leverage utilized weatherization funds.
7. Ensure all materials called for in audit are properly installed or justify changes/follow up.
8. Provide conservation education to participant household including information/material at audit or inspection.
9. Ensure participant/owner satisfaction and obtain their signature at inspection on Work Completion form (Appendix Q).

6.3 Auditor/Inspector Apprenticeship Training Program

Direct Service Providers will implement the ***Auditor/Inspector Apprenticeship Training Program*** to ensure the continued extension of quality services within the weatherization program. The

program will provide on the job training to current employees of the Weatherization Assistance Program who meet the minimum eligibility requirements. Training will be conducted by Direct Service Providers to prepare candidates for Certification as Auditor/Inspectors. Apprenticeship will include performance of duties related to audits and inspections as an assistant to a certified Auditor/Inspector, including the following:

- Ongoing on-site instruction on audit and inspection procedures;
- Analysis of a variety of dwelling types, including site built, multi family and mobile home construction;
- Proper completion of the Job Order Sheet, Job Completion Form, and all other required documentation;
- Experience in the operation of the Computerized Energy Audit (EA4);
- Instruction on the **Idaho Weatherization Operations Manual**, including *Standards and Techniques for Weatherization*;
- Hands-on experience in required diagnostic techniques;
- Participation in Peer Exchange Team process, to include annual on-site monitoring;
- Attendance at State, Regional and National training sessions and conferences.

Auditor/Inspector Certification

The State requires all energy audit and job inspection activities to be performed by certified Auditor/Inspectors. The certification process includes training and successful examination in both Auditor and Inspector responsibilities.

Candidates must be able to demonstrate a complete, working knowledge of the requirements, standards and techniques contained in the Idaho Weatherization Operations Manual in addition to the Core Competencies developed by the Weatherization Trainers Consortium for the Department of Energy (DOE). (Appendix X)Training and performance evaluations will be overseen by the Program Manager during the preparation of a candidate for Certification.

After successful demonstration and understanding of the Idaho Weatherization Operations Manual Standards and Techniques and the required Core Competencies, the Program Manager will enroll the candidate in the Saturn Resources online training program for Energy Auditors. Upon completion of this requirement, a copy of the Certificate of Completion will be sent to CAPAI.
Successful candidates will then perform an on-site audit and inspection to be proctored by a Certified Auditor/Inspector from another Direct Service Provider. The Program Manager will be advised of candidate performance and the candidate's name will be sent to the State for signature of the Auditor/Inspector Certification certificate. Direct Service Providers may, at their discretion, choose to implement an apprenticeship program for recently certified Auditor/Inspector staff. Direct Service Providers are encouraged to support professional development of Auditor/Inspector through attendance at local, regional, state and national trainings.

Exception: Candidates seeking certification during Weatherization Program Ramp Up periods will attend a four day training and one day audit/inspection on-site test in lieu of the field test described above. The training will be coordinated by CAPAI who will provide all necessary training materials including but not limited to testing equipment, on-site dwellings, textbooks/handouts, and trainer(s).

Further Review of Candidate

The State or its designee may recommend the candidate seek further training, prior to receiving certification as an Auditor/Inspector. The following is required:

1. State informs Program Manager of candidate's need for follow-up training.
2. Training provided to candidate by Weatherization Program Manager.
3. Manager field tests candidate on minimum of two dwellings
4. Manager signs off and accepts audits/inspections of candidate.
5. Manager submits copies of paperwork (audits/inspections) to the State or its designee for review.
6. State or its designee certifies candidate to perform audit/inspections.

Updating Previous Certification

Any State Certified Auditor/Inspector Certification can transfer to any agency that has a current sub-grant with the State of Idaho and maintain their certification. **No recertification is necessary.** Direct Service Providers are encouraged to support professional development of Auditor/Inspector through attendance at local, regional, state and national trainings.

When hiring a previously certified Auditor/Inspector (from Idaho or out of State) the following must be completed to ensure skills of the candidate are current:

1. Provide the manager a copy of the previous certificate.
2. Candidate is field tested by the manager on two audits and two inspections.
3. Copies of the previous certification and audits and inspections completed during the field testing are sent to the State for review.

Upon successful completion of the above criteria, the State and/or its designee will recommend the candidate receive State certification to perform audits and inspections. The State will issue notification to the candidate and the Program Manager.

Energy Auditor/Inspector Continuing Education

Weatherization staff who have completed the Energy Auditor/Inspector Certification must complete a minimum of ten (10) hours of continuing education annually in addition to performing four (4) audit/inspection on dwellings reflecting a minimum of two (2) major heat sources (electricity, natural gas, propane, wood, or coal). The Program Manager must provide documentation of fulfillment of this requirement for all currently Certified Auditor/Inspectors to CAPAI on an annual basis.

Energy Auditor/Inspector Certification Probation
When an Auditor/Inspector does not meet certification requirements and/or work performance falls below Federal and/or State Standards as set forth in the Idaho Weatherization Operations Manual, they will be placed on probation until their performance issue is resolved. Probation will include the following:

1. State notification to the Direct Service Provider of Audit/Inspection deficiencies and probation period.
2. Direct Service Providers shall submit an action plan to resolve deficiencies and meet program requirements.
3. When performance requirements are not met, decertification will be recommended.

Energy Auditor/Inspector Decertification
The State and/or their designee reserve the right to suspend or revoke an Energy Auditor/Inspector's certificate for serious non-compliance with Federal and State requirements. Upon recommendation, the State and or its designee will appoint a committee to determine the suspension or revocation of the named certificate holder.

The appointed committee will consist of three (3) persons who will determine if action against a certified person is necessary and what action is appropriate. The committee will determine the decertification outcome and their decision will be final. The committee will be composed of:

1. A representative from the Department of Health & Welfare, Division of Welfare;
2. A representative from the Community Action Partnership Association of Idaho who is not involved in the disciplinary action; and
3. A representative from the Direct Service Providers' Weatherization Program Manager, who is not involved in the disciplinary action.

6.4 Training & Monitoring

The Direct Service Provider Program Manager is responsible for maintaining a Weatherization Health and Safety Program. Specific responsibilities may be delegated to adequately trained and competent Weatherization program personnel. All activities will be conducted according to standards established by the Occupational Safety and Health Administration (OSHA).

6.5 Employee Health & Safety

Employee Training
New employees will not begin working in the field until training has been provided, including but not limited to the following:

1. Training on conventional health and safety issues, including heavy lifting, safe ladder usage, electrical safety, power tool safety, and other work practices and conditions encountered in the weatherization program.

2. Instruction on proper usage/maintenance of protective equipment, including eye/ear protection, respirator, gloves, Tyvek suits or coveralls, etc.

3. Information is provided on hazardous chemicals and substances in the work environment and the proper usage of these materials, the content and location of Material Safety Data Sheets (MSDS), and employee has an understanding of how they may obtain and use appropriate hazard information.

Accident Prevention

The prevention of occupationally induced injuries will be given precedence over production activities. To the greatest degree possible, the Direct Service Provider will ensure all equipment and facilities are in compliance with OSHA standards. Participants will be notified of potential hazards pertaining to production activities, and employees will undertake activities in a safe manner, protecting themselves and members of participant households while work is in progress.

The Direct Service Provider will initiate and maintain programs in compliance with OSHA standards. Each home will be individually assessed prior to weatherization to identify the existence of potential hazards to workers or participants. The Weatherization Assistance Program provides a waiver for the non-performance of weatherization activities if those activities will expose workers to conditions regarded as unsafe or unhealthy as determined by OSHA Construction Industry Standards or the State of Idaho Denial/Delay of Services Policy (Appendix T).

Weatherization services will be provided in a manner, which minimizes the risk to workers and participants. Workers are responsible for performing their duties in a safe manner. Individuals who demonstrate an inability to work in a safe manner will not be retained by the program. To limit the possibility of accidents, the Direct Service Provider will implement the following safety programs.

Safety Meetings

Safety meetings will be conducted monthly. The content of the meeting should focus on issues of current importance. During the meeting, employees should be encouraged to comment and ask any questions they may have about the content. The goal of these meetings will be employee understanding and retention of the information addressed. When possible, meeting topics should be limited to a single issue, and written/visual information should be used to reinforce subject matter (handouts, posters, etc.). Minutes of each meeting (including topics discussed and attendee signatures) will be entered on the Monthly Safety Meeting form (Appendix O) and kept on file by the Direct Service Provider. The minutes will be reviewed by the State and/or their designee during the annual Direct Service Provider monitoring.

On-Site Inspections

The Direct Service Provider will conduct a minimum of quarterly on-site inspections of each crew to ensure health and safety policies are being followed. Findings related to the inspections will be documented on the Health and Safety Job-Site Inspection Form *(*Appendix P*)* and maintained by the Direct Service Provider. Issues related to job site inspections should be resolved as soon as possible. The Health and Safety Job Site Inspection Forms will be reviewed by the State and/or their designee during Direct Service Provider annual on –site monitoring.

<u>On-site inspections will include, but not be limited to, the following:</u>

1. Ascertain employee understanding of weatherization activities, and inspect work area to ensure activities are being conducted in a safe manner.
2. Confirm all crew members are supplied with safety equipment. Inspect condition of personal safety equipment, and confirm equipment is in use as warranted by the activities being conducted.
3. Inspect hand and power tools. Any equipment found to be defective will be removed from service, tagged and repaired or replaced as soon as possible.

Each crew vehicle should be supplied with the following health and safety items, including, but not limited to, the following:

1. Complete first aid kit designed to provide basic first aid for injuries, which may result from weatherization activities.
2. Adequately charged, hand operated fire extinguisher designed for all three types of fires (electrical, wood and liquid) with current service date.
3. Binder containing a list of hazardous chemicals (common and chemical name), usage location, hazard information, and MSDS sheets (unless master files are accessible by all crewmembers on a daily basis).

Personal Protective Equipment

Employees will be notified of hazards in the work area, and provided adequate protective equipment. The use of personal protective equipment will be strictly enforced. Each crew member will wear a respirator, protective eye wear, hearing protection, and protective clothing when necessary. Respiratory protection is required when working in high dust environments. Hearing protection is required for individuals working around high decibel equipment or in high dust environments. Employees will use eye protection as required when working with hand/power tools or in high dust environments. Any problems or malfunctions with personal protective equipment must be reported immediately to the supervisor.

Respiratory Protection

Each employee will be issued an individual respirator and instructions on proper fit, usage, cleaning and maintenance of the respiratory equipment. Respirators must be NIOSH/MSHA approved, and worn in areas with high concentrations of particulate or chemical contaminants. Respiratory protection should be worn in, but not be limited to, the following areas:

- While working in attic and crawlspace areas.
- While installing insulation or if existing insulation will be disturbed.
- When applying chemical sealants and adhesives in confined places.

When wearing a respirator, the employee must leave the work area immediately and remove the respirator in the event of:

- Dizziness or other physical distress.
- Difficult or labored breathing.

Hand & Power Tools
All hand/power tools and similar equipment will be maintained in a safe condition. This equipment will be inspected daily, and any equipment found defective will be tagged and removed from service until it has been repaired or replaced. Protective guards are to be in place and functioning properly while a power tool is in use.

All electrical equipment, tools and extension cords will be properly grounded. A ground fault interrupter (GFCI) will protect all electrical power for 120 volt or greater equipment. Any extension cords found defective (worn insulation, frayed wires, etc.) are to be removed from service and replaced.

General Fall Protection
Portable ladders will be placed on a substantial base at a 4/1 pitch. Extension ladders are to be extended a minimum of 36 inches above the landing, or provided with grab rails and secured against movement while in use. Portable metal ladders will not be used where they may contact electrical conductors.

The use of ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction is prohibited. When ladders with irreparable defects are discovered, they are to be immediately withdrawn from service and discarded. Precautions are required when weatherization activities are conducted on roof areas. Safety gear is required (harness, safety straps, etc.) when an individual is either above 16 feet, or adequate stability can not be maintained.

Housekeeping Activities
All scrap lumber, waste material, and debris will be removed from the immediate area as work progresses. An area outside the home should be designated for storing such material, and all waste materials will be removed from the premises at the end of each work day or when the job is completed.

Equipment will be removed from the immediate work area and properly stored when no longer required or when each phase of the weatherization process is completed. Individuals should be equipped with a tool belt, making hand tools easily accessible when required.

6.51 Hazardous Materials

Asbestos

In addition to particulate and chemical hazards posed while working with weatherization materials, employees should be informed of possible exposure to areas contaminated with asbestos. In addition to informing residents of these hazards, employees should be familiar with the dangers of exposure to asbestos in the workplace. Work should not be conducted in areas containing "friable" asbestos. The definition of friable asbestos is as follows:

- Any material containing greater than one percent (1%) asbestos by weight or volume that hand pressure can crumble, pulverize or reduce to powder when dry.

- Any asbestos containing material that can reasonably be expected, as a result of retrofitting practices, to become pulverized through breaking, chipping, crumbling, crushing, or other means of rendering fibers available to the ambient air.

Asbestos containing materials (ACM) which are non-friable (undamaged) **should not be disturbed.** The location and condition of ACM should be noted on the JOS, and crews should wear appropriate protection and exercise caution while working around non-friable asbestos.

Lead

Lead Safe Weatherization (LSW) must be applied to all pre-1978 housing unless the house meets EPA's Final Rule Exemptions.

Exemptions

1. **No Lead-Based Paint will be Disturbed.** LSW must be applied to all pre-1978 housing unless there is existing evidence that the home has been certified as being lead-free or below the lead threshold limit (e.g., for paint containing lead below the regulated level, 1.0 mg/cm2 or 0.5% by weight). One of the following methods must be used to determine the paint to be disturbed is not lead-based paint: -Written determination by certified lead inspector or risk assessor; *OR*
   -Proper use of EPA-recognized test kit provided agencies (*documenting manufacturer and model of test kit used, description and location of components tested, and test kit results)*
   Note: Beginning in 2010, tests must be performed by a Certified Renovator, per EPA final rule. Test kits are currently being evaluated but none have been approved to date - updates and approved kits will be posted a thttp://www.epa.gov/lead/pubs/renovation.htm OR
   -A State-approved lead-based paint test protocol (e.g., XRF scans verifying absence of lead paint).

2. **Mobile Homes.** Often, interiors of mobile homes were not painted but rather, paneling was applied to the surfaces. Therefore, pre-1978 mobile homes that were not painted by the manufacturer, occupant, landlord, or past owner of the unit before 1978, may be exempt from LSW. However, Weatherization Programs must verify the areas receiving weatherization services have never been painted or were painted for the first time after 1978. If this is not verifiable, then LSW protocols must be followed. Painted exterior surfaces on pre-1978 units should not be drilled, scraped, sanded, or receive any other work that disturbs the paint.

3. **Exempt from training and work practice requirements <u>if owner signs written statement</u> that <u>all</u> apply:**
   a. No pregnant women resides there; and
   b. Not a child-occupied facility ("occupied" includes being the child's primary residence or a home that is visited regularly by the same child, under age 6, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours).

4. **Housing for the elderly or persons with disabilities** (unless any one or more children under age 6 resides or is expected to reside in such housing for the elderly or persons with disabilities).

5. **Any 0-bedroom dwelling**.
6. **Minor Repair or Maintenance Activities**: Activities that will disturb less than the following square feet of paint surfaces in 30 calendar days (counting all paint surface areas of a removed component):
   - ☐ 6 square feet per room for interior activities; or
   - ☐ 20 square feet for exterior activities.

But this exemption does *NOT* apply to the following:

- Window replacement.
- Demolition of painted surface areas.
  - ☐ Using any of the following:
    - o Open-flame burning or torching;
    - o Machines to remove paint through high-speed operation without HEPA exhaust control; or
    - o Operating a heat gun at temperatures at or above 1100 degrees Fahrenheit.

Testing for lead-based paint and lead-based paint residues

Testing for lead-based paint is not an allowable weatherization expense except, when it is related to the installation of energy efficiency measures. These expenditures must be within the limits set by the state in its Weatherization Health and Safety Plan.

U.S. Department of Energy Minimum Standards for LSW

Safe Work Practices must be implemented to minimize exposure to hazards for residents and the workers, while allowing Weatherization to occur in a cost-effective manner and to not hinder production. The effort required will be based on the hazard, the work specifications, and customer health issues.

CHECK: Federal, state, and local regulations.

- ☐ OSHA has rules for worker safety.
- ☐ States and local communities may have rules for waste disposal.

To meet the LSW minimum standards, crews and contractors MUST follow the general principles of working in a lead-safe manner. Best practices for working in a lead-safe manner are available in the benchmark LSW procedures and curriculum and should be reviewed and consistently enforced on LSW jobs.

Requirements

Client Protection and Notification
For occupied homes, the Weatherization staff, crew, or contractor must have an adult tenant or homeowner sign an acknowledgement after receiving the EPA “Renovate Right” pamphlet. The “Renovate Right” pamphlet can also be sent by certified mail with receipt to be placed in the customer file.

In multi-unit housing, the agency must:

- ☐ Provide written notice to each affected unit (notice must describe: general nature and locations of the planned renovation activities; the expected starting and ending dates; statement of how occupant can get “Renovate Right” pamphlet at no charge); or
- ☐ Post informational signs (signs must describe general nature and locations of the renovation and the anticipated completion date) and post the EPA “Renovate Right” pamphlet. (If “Renovate Right” pamphlet is not posted then agencies are required to provide information on how interested occupants can review a copy of the “Renovate Right” pamphlet or obtain a copy at no cost from the Weatherization Program).
- ☐ Delivery to owner/occupant. Owner's and/or occupant's signature with acknowledgment or certificate of mailing. The owner/occupant must acknowledge receipt of the EPA “Renovate Right” pamphlet prior to start of renovation that contains the address of unit undergoing renovation, name and signature of owner or occupant, and the date of signature. It must be in same language as "contract for renovation" for an owner-occupied (or the same language as the lease for occupant of non-owner occupied) target housing.

If the Weatherization Program cannot get a signed acknowledgment (either the occupant is not home or refuses to sign the form), then the self-certification section of the form must be signed to prove delivery.

The acknowledgement form must be filed and remain with the client file for three years from date of signature. In addition to providing a copy of the “Renovate Right” pamphlet to owners and occupants, designated local agency staff (e.g., intake specialist, Auditor/Inspector, crew chief) must discuss the hazards associated with lead-based paint and lead dust, and describe how they will conduct LSW in the home.

Weatherization Worker Protection
LSW includes these procedures and safety precautions:

- ☐ Wear personal protective gear specifically suited for the particular LSW measure. Use the National Institute for Occupational Safety and Health (NIOSH) approved respirators (at least ½ face) with HEPA filters.

- ☐ Use disposable overalls (with hood or a disposable painter's cap), gloves (cloth, plastic, or rubber as appropriate), goggles, and disposable shoe/boot covers.
- ☐ Keep dust to a minimum and properly contain dust and paint chips to the work area.
- ☐ Clean up area during and after work.
- ☐ During Weatherization, wash your hands and face frequently, particularly when leaving the work area and especially before leaving the area for the purpose of eating, drinking, or smoking.
- ☐ Before leaving a confined work area, remove your protective clothing and protective shoe/boot covers to avoid exposing others.
- ☐ Before leaving a confined work area, and before returning tools and equipment to vehicles, clean all tools to avoid exposing others and creating a lead-hazard to the next Weatherization job.
- ☐ Get annual medical exams to check blood lead levels. Do non-lead-related work if your blood lead level gets too high.
- ☐ Inform your employer if you develop signs of lead poisoning.

General LSW Work Practice Standards

- ☐ Crews and contractors must take steps to protect occupants from lead-based paint hazards while the work is in-progress using appropriate containment strategies.
- ☐ Occupants, especially young children or pregnant women, may not enter the work site. Occupants are allowed to return only after the work is done and the home has passed a visual inspection.
- ☐ Occupants' belongings must be protected from lead contamination. This can be done by removing them from the work area or covering them in protective bags and sealing it to prevent dust from getting on the items.
- ☐ The work site must be set up to prevent the spread of leaded dust and debris.
- ☐ Warning signs must be posted at entrances to the worksite when occupants are present; at the main and secondary entrances to the building; and at exterior work sites. The signs must be readable from 20 feet from the edge of the worksite. Signs should be in the occupants' primary language, when practical.
- ☐ The work area must be contained. If containment cannot be achieved with occupants in the unit (e.g., work will take several days and involves the kitchen, bathrooms, or bedrooms that cannot be sealed off from use), occupants must move out of the unit or the work must be deferred until containment can be achieved.
- ☐ Ensure containment does not interfere with occupant and worker egress in an emergency.

Prohibited Work Activities

- ☐ NEVER - use reusable cloth or fabric, such as a painter's drop cloth, as protective containment sheeting. Polyethylene and in some cases when working on the exterior garden fabric are the only acceptable protective containment sheeting and must never be reused.
- ☐ NEVER - use brooms and shop vacuums for cleanup. Wet cleaning and HEPA vacuums are the only acceptable methods for cleanup.

- ☐ NEVER - use a conventional shop vacuum with HEPA filters - only HEPA-designed vacuums are acceptable for LSW.
- ☐ NEVER - turn leaded paint into leaded dust by dry scraping or sanding (unless needed around electrical outlets) or grinding, abrasive blasting or planning.
- ☐ NEVER - use an open-flame torch or heat gun (above 1100°F) to remove paint or window glazing. Open flame/high heat methods to remove paint create fumes that are dangerous for workers to breathe. Small lead particles created by burning and heating also settle on surrounding surfaces and are very hard to clean up.

- ☐ NEVER - allow residents and pets access to the work area while work is underway.

- ☐ NEVER - open windows and doors allowing lead dust to float into other parts of the building or outside.

- ☐ NEVER - allow furniture and other objects to remain in the Weatherization work area while Weatherization work is being performed unless they are covered and sealed in polyethylene sheeting or bags.

Containment

Containment is anything that stops any dust or debris from spreading beyond the work area to non-work areas. The level of containment must be determined by the Auditor/Inspector/inspector or supervisor before work is assigned to a crew or contractor. *To comply with EPA's LRRPP Rule requirements, a Certified Renovator will be required at the jobsite to assess and set up the containment site.*

Every home and every specific Weatherization measure is unique, therefore the level of containment required will be based on the hazards present, the age of the home, the scope of work activities, and any customer health issues. Although Weatherization jobs require individual assessments, LSW work generally falls into two levels of containment and the related standards are outlined below.

Level 1 Containment
Level 1 containment is required in pre-1978 homes when ***less than*** 6 ft^2 of interior painted surface per room or 20 ft^2 of exterior painted surface will be disturbed.

Level 1 containment consists of methods that prevent dust generation and contains all debris generated during the work process. The containment establishes the work area which must be kept secure.

Measures that *may* fall within this guideline include:

- ☐ Installing or replacing a thermostat
- ☐ Drilling and patching test holes
- ☐ Replacing HEPA filters and cleaning HEPA vacuums

- ☐ Changing Furnace Filter
- ☐ Removing caulk or window putty (interior)
- ☐ Removing caulk or window putty (exterior)
- ☐ Removing weather-stripping

Level 2 Containment
Level 2 containment is required when Weatherization activities will disturb ***more than*** 6 ft^2 of interior surface per room or 20 ft^2 of exterior surfaces in homes built prior to 1978. Level 2 containment consists of methods that define a work area that will not allow any dust or debris from work area to spread. Level 2 containment requires the covering of all horizontal surfaces, constructing barrier walls, sealing doorways, covering HVAC registers with approved materials, and closing windows to prevent the spread of dust and debris.

Measures requiring level 2 containment *may* include:

- ☐ Drilling holes in interior walls
- ☐ Drilling holes in exterior walls, removing painted siding
- ☐ Cutting attic access into ceiling or knee walls
- ☐ Planing a door in place
- ☐ Replacing door jambs and thresholds
- ☐ Replacing windows or doors
- ☐ Furnace replacements

Additionally, Level 2 containment must ***ALWAYS*** be used where any of the following is conducted (even if the activities will disturb less than the hazard de minimis levels within the Level 1 category):

- ☐ Window replacement
- ☐ Demolition of painted surface areas
- ☐ Using any of the following:
  - o Open-flame burning or torching;
  - o Machines to remove paint through high-speed operation without HEPA exhaust control; or
  - o Operating a heat gun at temperatures at or above 1100 degrees Fahrenheit.

Proper LSW Clean-Up and Debris Disposal
Following the containment standards in the previous section will minimize the level of effort required to properly clean up the job site. All dust, dirt, material scraps, containers, wrappers, and work related debris must be removed from the customer's home. A HEPA vacuum should be used to clean up the work areas. Further cleaning may be necessary based on the hazard.

At the conclusion of the job, once all workers have "cleaned" the work areas thoroughly, Weatherization workers must adhere to the following:

Safe and Secure Disposal

- ☐ Bag and gooseneck-seal all waste in 6-mil plastic bags
- ☐ Safely dispose of all waste in accordance with federal, state, and local regulations

Visual Inspection Verification

Checking the quality of worksite cleanliness is a two-phase process:

- ☐ Phase 1: Worker visual inspection during the cleaning process; look for any visible paint chips, dust, or debris as you clean, using proper techniques.
- ☐ Phase 2: Supervisor visual inspection after cleanup. There should be no evidence of settled dust following a cleanup effort. If dust is observed, the Weatherization crew must be required to repeat the cleaning.

If work is done outside the house, the grounds around the dwelling and all exterior horizontal surfaces should also be examined visually to make certain that all waste and debris have been removed and that paint chips were not left behind.

Deferrals

Idaho's WAP Direct Service Providers will follow the lead-based paint "deferral policy" to determine when it is prudent to defer certain Weatherization work in homes that have either tested positive or are assumed to have lead-based painted surfaces.

- ☐ First, the Direct Service Provider should assess the following factors:

  1) Is the Direct Service Provider prepared to work with lead-based paint? (i.e., have workers received training in LSW work practices - is the necessary equipment, such as HEPA vacuum cleaners, available; and does the agency's liability insurance cover work with lead-based paint);

  2) What is the condition of the painted surfaces in the house that might be specifically disturbed in the course of an allowable weatherization measure? (i.e., are they *seriously* deteriorated);

  3) What is the extent to which the specific energy efficiency measures determined by the audit will disturb painted surfaces? (i.e., will the disturbance likely generate dust in excess of OSHA minimums); and,

  4) Will the cost of doing LSW work represent a large portion of the total cost, such as to exceed the amount allowed by the state's health and safety plan (which could be the case if large amounts of lead-based paint surfaces will be disturbed)?

- ☐ Second, the Direct Service Provider should determine, based on consideration of the above factors, whether to:

  1) Proceed with all the weatherization work, following LSW work practices; or
  2) Do some of the weatherization tasks, defer others; or

3) Defer all the weatherization work

Deferral would mean postponing the work either until the Direct Service Provider is prepared to work with lead-based paint, or until another funding source has been identified that can finance corrections to the affected lead based paint area so that weatherization can be safely performed.

In cases where extensive LSW would be necessary, agencies are encouraged to arrange with other organizations, which are funded to do lead-based paint hazard control, to perform some of the more costly activities, such as risk assessment or clearance testing.

In areas where there are no organizations performing such work, Weatherization agencies may choose to develop their capabilities (purchase of equipment and advanced training for Direct Service Provider crews) for lead-based paint hazard control work, but they may not use DOE Weatherization funds for this purpose. In such a home, regular Weatherization work that does not disturb painted surfaces can be done.

Funding of lead safe weatherization

Whereas DOE funds may be used to pay for Weatherization activities that disturb lead-based painted surfaces while installing energy efficiency measures or for case-by-case testing, the funds may not otherwise be used for abatement, stabilization or control of lead-based paint hazards, or routine entrance and clearance testing.

However, U. S. Department of Housing and Urban Development (HUD) funds such as Community Development Block Grant (CDBG), lead hazard control programs and HOME Repair and Rehabilitation Program funds may be used to do this work. Also, U. S. Department of Health and Human Services' (HHS) Low-Income Home Energy Assistance Program (LIHEAP), may be used for certain expenses related to Lead Safe Weatherization.

Specifically, for DOE funding, agencies should budget LSW costs under health and safety as a separate cost category, excluded from the calculation of average cost per home. Lead Safe Weatherization costs include labor, material, insurance, training, and equipment.

Weatherization activities occurring within these guidelines may also require agencies to follow regulations as required by the Environmental Protection Agency (EPA), Department of Housing and Urban Development (HUD), and the Occupational Safety and Health Administration (OSHA). (Appendix V).

Verification of Direct Service Provider Compliance

All Direct Service Providers will be expected to comply with the most current DOE Guidance regarding Lead Safety and Lead Safe Work Practices. Compliance will be verified using the following methods:

- Any exceptions to use of LSWP will be documented in participant files.
- Review of Direct Service Provider staff training records to ensure all applicable staff have received appropriate training (EPA Certified Renovator training for all staff Auditor/Inspectors and DOE Benchmark LSW for all installer staff)

- All Auditor/Inspectors will be required to attend EPA Certified Renovator training, all new hires will be complete to complete training within 90 days
- All installer staff will be required to attend DOE Benchmark LSW training, all new hires will be required to complete training within 90 days

Community Action Partnership will host all mandatory lead-related trainings and ensure all attendance is tracked by Direct Service Provider and employee

- Review of 5% of participant files during On-Site Monitoring visits to ensure all pre-1978 dwelling residents received the EPA "Renovate Right" pamphlet and participant signature on a Pre-Renovation Form (Appendix Y) certifying receipt of EPA "Renovate Right" pamphlet
- Review use of LSW on all pre-1978 dwellings were lead is disturbed using 5% of participant files during On-Site Monitoring visits to include: digital photographs of Level 2 Containment and work in progress, Renovator signature that appropriate containment was set up during work on dwelling, and required clean up and disposal methods were used.

Direct Service Providers found to be non-compliant with any of the above guidance will submit a Corrective Action Plan to the state within 15 business days of notification of non-compliance with the aforementioned Lead Safety guidelines. The Corrective Action Plan will be implemented upon submission and utilized until the state determines the Direct Service Provider has successfully taken measures to address non-compliance issues. A letter of compliance will be sent to the Direct Service Provider indicating the end date of the Corrective Action Plan.

CAPAI will provide T & TA to Direct Service Providers found to be in non-compliance using DOE approved methods/ curriculum to ensure standardized program success.

Direct Service Providers found to be non-compliant for two consecutive On-Site Monitoring visits will be placed on probation to consist of the following:

- Submission of a Corrective Action Plan to the state within 15 days of non-compliance determination notification
- Quality monitoring quarterly on 10% of all dwellings that are pre-1978 and qualify for Lead Safe Work practices
- Immediate implementation of Corrective Action Plan until letter of compliance is sent indicating the end date of the Corrective Action Plan, to be determined based on findings of quality monitoring

6.6 Indoor Air Quality

Asbestos

Asbestos containing materials (ACM) identified during the energy audit will be brought to the attention of the participants. The condition of the ACM will be assessed, and residents will be advised not to disturb the material. Educational materials may be provided, including the EPA pamphlet **"Asbestos in the Home, a Homeowner's Guide."**

Lead
When applicable, weatherization activities within participants' homes will be carried out according to *Lead Safe Weatherization* (LSW) work practices when those activities are conducted on homes within the following guidelines (Appendix U):

1. The dwelling was constructed pre-1978, and
2. The dwelling has not been determined to be lead-based paint free, and
3. Either the amount of disturbed lead-based painted surface exceeds six (6) square feet per room of interior surface; or twenty (20) square feet of exterior surface, or, the amount of lead-based paint dust that will be generated by the weatherization work exceeds the OSHA defined airborne levels for lead.

Additionally, certain weatherization activities may require agencies to provide lead hazard notification to households under the Pre-Renovation Lead Information Rule (PLIR) as required by the Environmental Protection Agency (EPA), and follow additional regulations established by the Department of Housing and Urban Development (HUD) and the Occupational Safety and Health Administration (OSHA). (Appendix V)

Radon
Radon is an odorless, colorless gas, which occurs naturally in the earth's crust. Radon may migrate into homes, and long term exposure to elevated levels may cause lung cancer.

This migration may be reduced by the following measures:

1. Installation of minimum of 6 mil black visqueen ground cover,
2. Sealing duct systems (especially return systems) in crawlspace/basement areas,
3. Sealing floor penetrations,
4. Ventilating crawlspace areas.

Formaldehyde
Formaldehyde is a strong smelling, colorless gas released by components of various building materials. Health hazards from the gas include lung ailments, impaired brain and vision function, and can be fatal in high doses.

Extensive air sealing is not recommended on homes with significant levels of formaldehyde.

Particulates & Volatile Organic Chemicals (VOC)
Particulate contamination occurring from a variety of sources can negatively impact indoor air quality. Tobacco smoke, pets, exposed insulation materials, and volatile organic chemicals stored in the home contribute to unhealthy indoor environments.

Participants should be educated regarding the proper storage of household chemicals and the importance of proper ventilation.

Recommendations for air sealing measures should take into account the home's existing indoor air quality, avoiding the aggravation of unhealthy conditions.

Installation specifications
Materials will be installed according to the manufacturer's specifications, industry accepted standards and local building codes.

Inspection Procedure
The Auditor/Inspector will verify the proper installation of health and safety measures and confirms that all proposed work as documented on the JOS has been completed according to installation specifications. Inspection information will be documented on the JOS, including further work requirements.

When conditions related to health and safety are beyond the scope of the weatherization program, the participant will be notified of the unsafe condition, and the nature of the condition will be documented on the Job Completion Form. A letter of Delay/Denial of Services will be completed, mailed to participant/property owner, and a copy retained in the participant file.

6.7 Participant Health & Safety

Energy Audit Procedure
Each home will be individually assessed prior to weatherization to identify the existence of potential hazards to workers or participants. The Auditor/Inspector will inspect the home and identify unsafe conditions. Existing unsafe conditions will be documented before any work begins on the home, and those conditions that can be corrected through the program will be addressed. These conditions may include, but are not limited to, improperly installed or unsafe operating combustion appliances and electric heating systems, unsafe wiring, moisture and plumbing problems, minor structural deficiencies, and indoor air quality concerns. Where possible, the Auditor/Inspector will propose measures to eliminate or reduce the hazards. All health and safety measures identified during the energy audit and proposed work will be documented on the JOS and entered into the Energy Audit software.

Weatherization activities that may aggravate existing unsafe conditions beyond the scope of the weatherization program must not be conducted. In cases where deficiencies or hazards are beyond the scope of weatherization, the participant will be informed of the condition and the file will be documented. A letter of Delay/Denial of Services (Appendix T) will be completed, mailed to participant/property owner, and a copy retained in the participant file.

The participant should be referred to additional support services and a delay or denial of services may be required until repairs and or upgrades have been made. A letter of Delay/Denial of Services (Appendix T) will be completed, mailed to participant/property owner, and a copy retained in the participant file.

Combustion Appliances
Safety testing of combustion appliances located in living spaces will be conducted to ensure their safe operation. When possible, furnaces, water heaters, and gas ranges will be tested for Carbon Monoxide; flue draft testing will be conducted on vented appliances. Use of unvented combustion space heaters by participants will be discouraged. Infiltration measures will not be installed in homes with unvented space heaters.

Gas ranges will be tested for Carbon Monoxide (CO). To test, turn on top burners and oven. Check for CO at oven exhaust port located at rear of stove top after 5 minutes of operation, and check top burners after 15 seconds of operation with probe located approximately 12 inches above cook top. Maximum allowable CO levels for burners and oven is 200 parts per million (PPM). If CO is above acceptable levels, advise participant to contact the gas company to have unit checked/adjusted.

Measures related to combustion appliances and designed to improve the health and safety of the dwelling may be addressed using the DOE Health and Safety cost category or LIHEAP (LPW) funds.

Sensors
The program may install or replace household sensors designed to protect the occupants of homes receiving weatherization assistance. Smoke detectors should be installed in dwelling areas determined to represent a hazard to participants by the Direct Service Provider Energy Auditor/Inspector. Carbon Monoxide (CO) detectors should be installed in dwellings where combustion appliances are present.

Wiring
The weatherization program will only address minor wiring problems associated with weatherization activities. This may include repairs to furnace and space heating systems, water heaters, wiring connections, exhaust system wiring, fuse/circuit breaker replacement, and other minor, safety related repairs.

The participant/property owner will be notified of repairs beyond the scope of the weatherization program (i.e., replacement of unsafe electrical panel, extensive replacement of unsafe wiring, etc.), and a delay/denial of services may be required until repairs/upgrades have been made. A letter of Delay/Denial of Services will be completed, mailed to participant/property owner, and a copy retained in the participant file.

Moisture & Plumbing
Moisture problems may be addressed by either eliminating the source (leaking pipes, unvented dryers, bare ground in crawlspaces), or by installing measures designed to reduce the impact moisture has on a home (installing foundation /attic vents, vapor barriers, ground covers, splash blocks on downspouts).

Mechanical ventilation may be required in homes with moisture problems, including bath vent fans and kitchen range fans. Repair or replacement of existing exhaust fans (or installation of new exhaust systems) may be required to control moisture in homes below minimum air tightness standards.

Minor plumbing problems may be repaired (leaking pipes, elbows, unions, etc.), but repairs beyond the scope of the weatherization program (i.e., replacement of plumbing, raw sewage or standing water in crawlspace areas, etc.) will be brought to the attention of the participant/property owner, and measures will not be installed in those areas unless repairs/upgrades have been made prior to job completion. A letter of Delay/Denial of Services will be completed, mailed to participant/property owner, and a copy retained in the participant file.

Structural Repairs

Minor structural repairs may be provided to shield weatherization materials from indoor and outdoor exposure. Measures may include replacement of damaged or missing sections of the building envelope including dry wall, plywood, sheathing, siding and repairs to damaged or leaking roofs**. Roof repairs are limited to 25% of the total roof surface area with DOE Health and Safety funds. This restriction does not apply to mobile home roofing systems that include insulation installation (EPDM roofing systems) which can be provided if the measure meets the DOE SIR requirement.**

Repairs beyond the scope of the weatherization program (extensive roof repairs, major portions of interior and/or exterior surface areas exposed, etc.) will be brought to the attention of the participant/property owner, and measures **will not be installed in those areas** unless repairs/upgrades have been made prior to job completion. A letter of Delay/Denial of Services (Appendix T) will be completed, mailed to participant/property owner, and a copy retained in the participant file.

Note: Roofing repairs/replacements can be done with LPW CR funds as long as the repair/replacement can be justified as contributing to the protection and durability of energy saving weatherization measures.

6.8 Walk-Away Policy

Direct Service Providers performing weatherization activities which may aggravate existing unsafe conditions involving lead paint, asbestos, radon, VOC's, or other hazardous substances should determine whether to proceed with work based on the following factors:

- Does the agency have the necessary training, equipment and insurance to allow work to proceed?
- Does the condition of the dwelling and/or the hazardous substances to be encountered during the weatherization process pose a threat to the health and safety of the participants or to the workers themselves?
- To what extent will the specific energy efficiency measures to be installed disturb or aggravate conditions within the home?

Based on consideration of these factors, Direct Service Providers should determine whether to:

- Proceed with all the weatherization work following safe work practices, or

- Do some of the weatherization tasks and defer others for a period of 90 days, or
- Defer all the weatherization work until unsafe conditions are corrected.

Limited weatherization activities may be conducted which do not affect or aggravate conditions related to hazardous substances, but which provide energy efficiency benefits to participant households.
If additional weatherization measures are deferred, Direct Service Providers will allow a deferment period of ninety (90) days following job completion for participants to correct deficiencies and/or hazards thereby allowing for the installation of those additional measures.

In cases where deficiencies or hazards are beyond the scope of weatherization (including dangers posed by lead based paint and/or laden dust residues, asbestos, radon, VOC's, or other hazardous substances), the participant will be informed of the condition and the file will be documented. A letter of Delay/Denial of Services (Appendix T) will be completed, mailed to participant/property owner, and a copy retained in the participant file. The participant should be referred to additional support services, and a delay/denial of services may be required until repairs, upgrades or abatement activities have been completed.

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DEFINITION OF TERMS

ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers

COMBUSTION APPLIANCE - Home appliances which burn fossil fuels, including oil, coal, wood, propane, natural gas, kerosene, and butane. Combustion appliances include furnaces, water heaters, ranges, dryers, space heaters, and heat producing stoves.

COMPUTERIZED AUDIT - Spreadsheet (EA4) which evaluates energy usage and calculates the savings-to-investment ratios (SIR) of energy conservation measures.

DIAGNOSTICS - Evaluation of internal systems and the envelope of dwellings. These evaluations include pressure diagnostics (air leakage measurements), combustion testing (safety and efficiency testing), and electrical component testing (furnaces and water heaters).

EA4 - The existing and proposed data collected in the field and calculated material costs are entered into a computerized energy audit (EA4) to establish the savings-to-investment ratio (SIR) for each proposed measure. The computerized audit automatically calculates the SIR for each proposed measure, and determines the combined savings for the overall job (the "total SIR").

ENERGY AUDIT - Field on-site evaluation of a dwelling's energy efficiency. Data gathered in the field is entered into the computerized audit (EA4). The computerized audit evaluates the data to determine which energy conservation measures are cost effective.

HEALTH & SAFETY - Issues related to dwelling and/or working conditions, which may pose a hazard to the occupants of the dwelling and/or crewmembers performing weatherization activities.

HVAC - Heating, Ventilating and Air Conditioning

JOB ORDER SHEET - The Job Order Sheet (JOS) is used to record the data collected in the field and indicate the measures proposed by the Energy Auditor.

PRESSURE DIAGNOSTICS - Evaluation of the heat loss characteristics of a building using air leakage measurements.

SIR – "Savings-to-Investment-Ratio." The cost-effectiveness of each proposed measure based on its estimated energy savings per year in dollars versus the costs of measure installation.

The Idaho Weatherization Assistance Program employs a combination of skilled technicians, experienced staff, advanced diagnostic equipment, and a computerized energy audit in the successful implementation of the program objectives. Technicians involved in the program include certified Auditor/Inspectors, trained and experienced crews, and specialized subcontractors. The combination of skill, experience, equipment and technology employed in the weatherization of Idaho homes will ensure the continued success of the program.

7.1 Summary of Audit Procedures

An on-site energy audit is conducted on every home receiving weatherization assistance. Measures identified during the energy audit and proposed work will be documented on the Job Order Sheet (JOS) and entered into the computerized audit (EA4). Installed measures must have a savings-to-investment ratio (SIR) of 1.0 or greater (with the exception of measures installed for health and safety).

Introduction - The first step in the audit process is the introduction. An appointment is made with the participant for an "energy audit" to assess their home weatherization needs. Upon arrival, the Auditor makes an introduction, taking a few minutes to discuss with the participant the weatherization program objectives, address their questions and/or concerns regarding the upcoming weatherization activities, and gather input on their specific needs. The Auditor provides general information about the program, provides educational material, and answers any questions the resident(s) may have about energy conservation and their home. The introduction is a vital part of the weatherization and client education process, giving the Auditor an opportunity to provide conservation information while establishing a line of communication between the participant and program staff.

Audit walk though - After the introduction, the Auditor does a "walk through." At this time, the Auditor assesses the overall condition of the dwelling and general housing composition/layout, identifying building envelope areas (attic, wall and floor areas, window and door types, etc.), and obvious weaknesses in the building shell. The Auditor determines the location and type of heating system(s), water heater, exhaust fans, and identifies obvious signs of health and safety issues, including structural deficiencies, mechanical hazards (i.e., improperly or unvented combustion appliances, exposed electrical wiring), moisture problems, and potential work site hazards. As part of the walk through, deficiencies beyond the scope of weatherization are brought to the attention of the resident(s), including major structural problems, deteriorated roofing, unsafe electrical systems, major plumbing problems, environmental and work site hazards, etc. Referrals to additional support services are made where available. In situations where substantial deficiencies exist, a delay/denial of services may be required until repairs/upgrades have been made. See Appendix T

Building envelope - After the walk through, the specific areas of the building envelope are assessed to determine their existing insulating values, and findings are noted on the JOS, including information regarding proposed measures to be installed. Envelope areas to be assessed include windows, doors, exterior walls, attic areas, floor areas (above and below grade), and duct systems (especially in unconditioned areas). Measurements of all areas and their corresponding u-values are entered in the appropriate sections on the JOS. Major penetrations to the building envelope (sources of air infiltration) should be identified and noted on the JOS. Notes are made regarding the location and amount of venting (exhaust fans, chimneys and flues, and attic/crawlspace venting), recommendations for additional venting (if required), location of any recessed lights, heat producing devices in attic areas, and recommendations for health and safety related repairs (exhaust fan replacements, etc.).

Diagnostics - Diagnostic testing is conducted where applicable, including testing of heating and water heating systems for safety and function (electrical appliance testing and combustion appliance draft, efficiency and carbon monoxide testing). When feasible, the Auditor will perform pressure diagnostics (blower door testing) to determine air leakage rates and identify sources of infiltration. Diagnostic test results are documented on the JOS, including necessary heating system and water heater repairs and/or replacements and required infiltration measures identified during the audit (weather-stripping, duct sealing, minor repairs to building envelope, etc.). Pre-test results are entered in the appropriate areas on the JOS for all diagnostic tests performed. Circumstances requiring estimated diagnostic values or non-performance of pressure diagnostics are indicated on the JOS.

Computerized audit - Completion of the energy audit includes calculation of actual material costs for the proposed measures and final data entries made on the JOS (u-values, heating degree days, volume, fuel cost, etc.). When all fields on the JOS are completed, the Auditor enters those values into the EA4. The existing and proposed data collected in the field and the calculated material costs are entered into the EA4 to establish the SIR for each proposed measure. The SIR indicates the cost-effectiveness of each proposed measure based on its estimated energy savings in correlation with the cost of installing the measure. The EA4 determines the measures to be installed. The computerized audit automatically calculates the SIR for each proposed measure, and determines the combined savings for the overall job (the "total SIR"). Before the job is put into production, the Auditor confirms the job has a total SIR greater than 1.0, and any individual items with an SIR less than 1.0 are eliminated (with the exception of Health and Safety related measures). After the audit, the job receives final prioritization, material and service orders are completed, a copy of the EA4 estimate printout is placed in the participant's file, and the job is sent on to production.

7.2 Weatherization Production

Following completion of the energy audit, the home is scheduled for weatherization production. In most cases, the Auditor continues to provide information and support to the crew and subcontractors through the production phase of the project. Communication between the Auditor, subcontractors, and crew to ensure measures are installed according to the original work plan is an important element in the successful completion of the weatherization process. All materials are installed according to established weatherization standards.

Crew - A majority of the work performed during the weatherization project is conducted by Direct Service Provider crews. An experienced, well trained staff is essential to the successful application of the materials used in the Weatherization Assistance Program. The weatherization crew leader is responsible for ensuring the proper installation and completion of all weatherization measures indicated on the JOS. The crew leader's duties include accounting for all materials removed from inventory, insuring the materials are applied according to program standards, confirming that all measures called for on the original audit are completed, filling out forms associated with production, and insuring job site is properly cleaned up on completion.

Subcontractors - Agencies employ subcontractors for a variety of the specialized applications used in the weatherization program. The Direct Service Provider staff works closely with the contractors to ensure the work performed meets the installation standards for weatherization materials. Work performed by subcontractors includes heating system and water heater repair and replacements, minor electrical and plumbing repairs, and the installation of various other weatherization related materials.

7.3 Job Inspection and Diagnostics

On-site inspection

Upon job completion, an on-site inspection is conducted on all homes receiving weatherization assistance to ensure applied materials meet installation specifications. The Auditor/Inspector is responsible for verifying the proper completion of all measures called for on the original audit. The Inspector's duties include certifying the proper installation of all shell measures, completing required diagnostic post-testing, entering final information on the JOS, and obtaining the participant's signature on the Job Completion Form (HW-0631- Appendix Q). Work found to be incomplete at the time of inspection, or jobs requiring additional work, are returned to the production staff (or contractor) for completion. A follow-up inspection is conducted when those measures are complete. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Following the installation of all measures on the home, the Inspector will conduct diagnostic tests to ensure the continued health and safety of the residents, and verify the proper completion of the work indicated on the original audit. These diagnostics include testing of heating and water heating systems for safety and function following repairs and/or after infiltration reduction measures have been installed, and final pressure diagnostic testing (blower door test, pressure pan/duct blaster testing).

Inspection follow-up

If deficiencies are detected during final inspection follow-up work will be scheduled and the Auditor/Inspector will not sign off a final inspection until all follow-up work is completed and meets State Standards as identified in the Idaho Weatherization Operations Manual.

Inspection of subcontractor work

A subcontractor will not be paid for services until an Auditor/Inspector has inspected the work and they have signed off that the work is complete and satisfactory. Payments will be delayed until deficiencies have been corrected by the subcontractor. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

EXCEPTION: The subcontractor may be paid prior to the completion of weatherization work on the dwelling only in cases where the repairs are done to resolve an emergency situation. In this situation, the /Inspector will be required to inspect the subcontractor's work and certify that it is complete and satisfactory, prior to payment.

The Direct Service Provider Fiscal Officer will require documentation that the contractor's work has been fully inspected prior to issuing payment for services. The documentation should consist of a subcontractor invoice and a Direct Service Provider authorized purchase order.

Job completion

At job completion, the Auditor/Inspector provides the participant with any necessary, additional information on the measures installed (including maintenance and repair requirements), and addresses any further questions and/or concerns the participant may have about the weatherization program. The Inspector also provides any follow up energy conservation information that may be required.

On completion, the original JOS and HW-0631 (Job Completion Form) are placed in the participant's file for entry of the final costs into the EA4. A copy of the final EA4 information, along with all other pertinent information regarding the work performed, is placed in the participant's file and retained by the Direct Service Provider.

7.4 Standards & Techniques

The standards and techniques for the Weatherization Assistance Program Auditor/Inspector Auditors, installers, and Inspectors are provided in the following sections.

Windows & Doors

Window and door measures reduce heat loss and increase comfort. Allowable window measures include repair and replacement of primary windows, window sashes, frames, glass replacement, installation of storm windows, and installation of air sealing materials. Allowable door measures include repair and replacement of exterior doors, door jambs, casing, and installation of air sealing materials.

Window and door measures identified during the energy audit and proposed work will be documented on the JOS and entered into the EA4. Installed measures must have a SIR of 1.0 or greater (with the exception of measures installed for health and safety). Materials will be installed according to the manufacturer's specifications, local building codes, and the following minimum standards.

Energy audit procedures

The Auditor/Inspector Auditor will inspect exterior windows and doors for deficiencies and document proposed work information on the JOS.

Installation procedure

Materials will be installed according to the manufacturer's specifications, local building codes, and the following minimum standards.

Primary windows

A primary window may be replaced when the existing window is damaged beyond repair. Use of vinyl framed, insulated replacement windows with a required minimum U-Value of.35 as recommended by Energy Star guidelines..

- Primary replacement windows must have a SIR of 1.0 or greater (with the exception of windows installed for health and safety).
- **Where the glass and frame are broken or beyond repair, the U-Value may be listed on the JOS as 4.0 (R-value = 0.25). This is equal to 1/4 inch hardboard or cardboard.**
- All components associated with the installation will be structurally sound. Damaged framing and trim will be replaced with matching materials.
- Bypasses around replacement window will be sealed to prevent heat loss and moisture accumulation within the wall cavity.
- Unfinished wood will be sealed with an appropriate sealant (i.e., paint, varnish, or stain).
- The unit will operate smoothly and provide an airtight seal when closed.
- **A primary egress window, which is not operable, should be replaced.**
- **Egress windows, when not present and required by local building codes, will be installed.**

Storm windows

The type, size and shape of storm windows will match the primary window. All existing components associated with the installation of storm windows over an existing primary window should be structurally sound.

Preparation

- Storm window applications must have a SIR of 1.0 or greater.
- Replace cracked or broken primary panes. Install glazing compound where missing or deteriorated.
- Repair or replace damaged framing and trim. Seal air leakage and moisture penetrations.
- Ensure all mounting surfaces are smooth and free of protrusions.

Installation

- Permanently anchor framed storm windows (interior and exterior) with corrosion resistant screws placed within 4 inches of each corner and no more than 12 inches apart.
- Secure unframed interior storm windows with rotating clips located within 4 inches of each corner and as needed to provide a tight seal around the perimeter of the sash.
- Provide a 1/2 to 4 inch air space between primary and storm windows. Where applicable, install a thermal barrier to prevent metal-to-metal contact.
- If storm windows are installed over an existing, operable primary egress window, the storm window will meet egress requirements (See Safety, Egress).
- **Do not install a storm window over a defective primary egress window.** (See Primary Windows).

Operation

- Attachment of storm windows will in no way impede the proper operation of the primary window.
- All windows will be constructed and installed to allow easy removal for cleaning, storage, and egress.
- Educate the occupants on the safe operation, removal and storage of all storm windows.

Health & Safety

The safety of occupants in homes receiving window measures should be considered an important part of the program focus. The need for primary egress in bedroom areas and safety glazing requirements will be met when repairing/replacing primary windows or installing storm windows. The types of windows installed and glazing materials will meet the following standards to ensure occupant safety.

Egress windows

Primary egress windows provide occupants with an escape route in the case of a life-threatening situation. Primary egress windows are required in bedroom areas. If the program installs window measures in bedroom areas, the following minimum egress requirements apply.

Site-built Homes - Primary egress replacement windows will provide a minimum of 5.7 square feet of clear opening. Minimum dimensions for clear opening sizes are: 24 inches in height and 20 inches in width with a finished sill no more than 44" above the floor.

Mobile Homes - Primary egress replacement windows will provide a minimum of 5.0 square feet of clear opening, a minimum clear dimension of 22" in width or height, and have a finished sill no more than 36" above the floor.

Storm windows installed in egress locations will match the primary window and provide clear opening equivalent to primary window requirements.

Safety glazing

Safety glass (tempered/laminate) or plastic sheet (Plexiglas) will be installed according to the manufacturer's specifications and local building codes. Safety glazing protects the occupants of a home from injury due to breakage in a variety of applications. Safety glass will be installed where required by code, including in the following locations:

1. When a window is adjacent to a door where the nearest vertical edge of the window is within 24 inches of a closed door.
2. In a pane larger than 9 square feet when the bottom edge of the window is less than 18 inches above the floor (walking surface).
3. In a window located in a shower and/or bathtub enclosure when installed less than 60 inches above the floor of the enclosure.
4. If repairs are made to glaze areas in existing doors, or if a replacement door contains a window area, safety glazing will be required.

Doors

Exterior doors may be replaced when the existing door is damaged beyond repair. Use of metal pre-hung doors with a required minimum U-Value of.15. Any exceptions to this ruling will be documented in the participant file. Installation of interior, hollow core doors is an allowable measure when the objective is to reduce the volume of the conditioned area due to participant not using the space (i.e. installation of door to unused basement or root cellar)

- Measure must have a SIR of 1.0 or greater (with the exception of measures installed for health and safety).
- **Where the exterior door is broken or beyond repair, the U-value may be listed on the JOS as 4.0 (R-value = 0.25). This is equal to 1/4-inch hardboard or cardboard.**
- All components associated with the installation will be structurally sound. Damaged framing and trim will be replaced with matching materials.
- Bypasses around replacement doors will be sealed to prevent heat loss and moisture accumulation within the wall cavity.
- Unfinished wood will be sealed with an appropriate sealant (i.e., paint, varnish, or stain).
- The unit will operate smoothly and provide an airtight seal when closed.

Air Sealing

Air leakage around and through primary windows and doors can be sealed using a variety of materials, including the following methods:

- Smaller gaps in frame/casing can be sealed with caulk, foam, glazing compound, backer rod, etc.
- Framing and trim may be replaced with weather sealed matching material.

- Weather-stripping and hardware will be applied to doors as needed to ensure a tight seal. Allowable materials include hinges, strike plates, locksets, solid thresholds (wood or metal), door shoes, door sweeps.
- Full-width kick plates may be installed on doors with holes in the lower section.

Inspection procedure

The Auditor/Inspector will verify the proper installation of window and door measures and proposed work as documented on the JOS has been completed according to installation specifications. Inspection information will be documented on the JOS, including further work requirements. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Wall Areas

Wall insulation improves the thermal integrity and overall comfort of the dwelling. This is accomplished by installing insulation, vapor barriers, sheathing, and other measures recommended by the Auditor/Inspector. Wall measures identified during the energy audit and proposed work will be documented on the JOS and entered into the computerized audit (EA4). Installed measures must have a SIR of 1.0 or greater (with the exception of measures installed for health and safety).

Energy audit procedures

The Auditor/Inspector will inspect all accessible exterior wall areas for existing insulation. The Auditor/Inspector will identify heat producing devices in the wall areas to be insulated (ducting, space heaters, and knob and tube wiring), and document their location on the JOS to ensure these cavities do not receive insulation. Installation of vapor barriers, fire breaks, sheathing and siding will be considered for open or unfinished wall areas. Knee walls in attic areas will be insulated to the maximum R-value possible. *(Updated 11/10)*

Proposed work for wall areas requiring insulation and other measures will be documented on the JOS.

Installation inspection

Materials will be installed according to the manufacturer's specifications, local building codes, and the following minimum standards.

Blow-in loose fill insulation

Finished exterior walls

Loose fill insulation may be installed in finished wall areas using either a nozzle (two-hole method) or tube-fill (one-hole method). The tube-fill method is recommended for ensuring adequate dense pack levels are reached.

- Two-hole method requires drilling (2) holes in each cavity. Drill lower hole no more than 48 inches from the bottom of wall cavity, upper hole no more than 18 inches from the top of the cavity. Fill cavity with tube or nozzle.
- Tube fill method requires use of a flexible tube inserted into the wall cavity. A 1-1/4 inch inside diameter vinyl tubing up to 10 feet in length is recommended for this method.

Permission form

Prior to the installation of exterior wall insulation, it is recommended the Direct Service Provider contacts the property owner and obtains a signature approving the insulation method (inside or outside access).

Outside access

1. If feasible, remove siding to drill access holes in subsiding. Install wall plug in access hole and seal; reinstall siding in professional manner.
2. When the siding cannot be removed, drill access holes through siding along a straight line with holes evenly spaced between cavities (use chalk line if necessary).
3. Ensure all possible cavities are accessed (check for diagonal bracing and blocking).
4. After insulating, apply exterior wood glue to recessed wood plugs and seal with exterior spackle to match existing finish. When spackle is dry, paint plugs to match the existing color of the siding.

Inside access

1. Schedule with residents in advance to arrange for all furniture and belongings to be moved away from interior side of walls to be insulated.
2. Cover contents of home with drop cloths.
3. Wall cavities may be accessed by drilling through the interior drywall or lath and plaster.
4. Ensure all possible cavities are accessed (check for diagonal bracing and blocking).
5. Seal access holes with a plug designed for interior applications. Cover the plug with an interior spackle to match existing finish. When spackle is dry, paint plugs to match the existing color of the wall area.

Dense pack insulation

Wall cavities in finished areas can be accessed from either the outside or the inside of the home for the addition of loose fill insulation. To effectively install loose fill insulation to dense pack levels, it is recommended installers use a "tube-fill" method. In this method, flexible vinyl tubing is inserted into the wall cavity (upward) to the top and (downward) to the bottom plates of the framed wall. Insulation is then "packed" into the cavity, using the tube to push insulation into any voids left as the cavity fills.

Manufacturers recommend the following densities in a standard (3 1/2 inch) wall cavity.

Cellulose	**1 pound cellulose per square foot of wall area.**
Fiberglass	**2.3 pounds fiberglass per square foot of wall area.**

To calculate the amount of insulation needed for a 2 x 4 framed wall cavity, multiply the wall area (less 15% for framing) by the density of the material (pounds per square foot), divided by the bag weight. For example (using fiberglass):

Wall Area (Sq. Ft.)		Framing Adjustment		Density (Fiberglass)		Bag Weight		Bag Count
1000	**x**	**.85**	**x**	**.5**	**÷**	**24**	**=**	**17 bags**

Wall cavities must be filled completely to dense pack levels in order to achieve maximum energy savings. Wall surface areas should be inspected prior to installing dense pack insulation to ensure no damage occurs to the interior and exterior sheathing.

To calculate dense pack levels in cubic feet, calculate the cavity volume and multiply by 3 - 4 pounds per cubic foot (cellulose), or –7 -7.5 pounds per cubic foot (fiberglass) according to the following formula.

Wall Area (Sq. Ft.)		Depth (Inches)		12		Framing Adjustment		Density		Bag Weight		Bag Count
	x		**÷**		**x**		**x**		**÷**		**=**	

(If wall areas cannot support dense pack insulation, refer to manufacturer's recommendations for additional coverage information).

Batt/blanket insulation

Unfinished walls

Unfinished walls in conditioned areas may be insulated using batt (or blanket) insulation. In conditioned areas, wall area must be covered with a fire break material meeting ASTM flame spread rating of 25 or less following installation of batt insulation (such as 1/2 inch drywall). In situations where the resident is remodeling and will provide cover for the insulation at a later date, the Direct Service Provider may document the information on the JOS and have the participant sign the form indicating their agreement. Insulation will be installed as follows:

1. Cut batt/blanket insulation to fit each wall cavity with ends fitting tightly.
2. Install insulation to fit tight against structural members, wiring and electrical boxes with no gaps. Insulation material should be in continuous contact with interior wall surface.
3. Do not compress insulation more than 10% behind or around obstructions.
4. Install faced insulation with an attached vapor barrier with the barrier between the insulation and the conditioned area. Secure the vapor barrier to the wall studs evenly, secured every 12 inches.
5. When a vapor barrier is installed separate from the insulation, install barrier evenly and continuously, with seams overlapping a minimum of 3 inches at wall studs. Secure vapor barrier to studs every 12 inches.

Knee & pony walls

Knee walls in attic areas and pony walls between conditioned and unconditioned basement and crawlspace areas will be insulated to the maximum R-value possible and to a minimum of R-19. *(Updated 11/10)*

The method for installation is the same as for unfinished walls, with vapor barrier installed against the interior wall. Material will be supported as follows with support system anchored with corrosion resistant fasteners.

- Install wood lath across wall studs spaced no greater than 18 inches apart.
- Install polypropylene or polyester twine in a zigzag pattern attached to studs on each side of cavity with anchor points spaced no greater than 12 inches apart.
- A vapor permeable air barrier may be installed evenly and continuously, overlapping wall studs a minimum of 3 inches at seams and secured to studs every 12 inches.

Basement/foundation walls

- Fir out wall with framing lumber, install batt/blanket insulation, and cover with fire break material (See Wall Insulation, Unfinished Walls).
- Apply rigid board (foam) insulation using an approved adhesive **(May require a fire break material**).
- Blown insulation combined with an adhesive binder may be applied to concrete foundation and or stem walls.

Bypass air sealing

Air bypasses in wall areas can be either obvious, large holes or small, obscure gaps and openings. In addition to identifying air leakage areas, special attention should be paid to openings in wall areas to avoid the introduction of moisture into the wall cavity. Bypasses in wall areas can be sealed using a variety of materials. Some recommended techniques are as follows:

1. Seal large, highly visible openings in wall with material to match existing surface (wallboard, siding, etc); seal with caulk or spackle.
2. Small openings can be sealed with a 20-year caulk, foam, and/or backer rod.
3. Dense pack insulation can effectively seal small air leakage openings in wall cavities.
4. Obscured openings (located behind cabinets, washers and dryers, etc.) and open cavities (as in balloon construction) can be sealed using packed fiberglass, rigid foam, foil-bubble wrap, or expanding foam.

Inspection procedure

The Auditor/Inspector will verify the proper installation of wall insulation measures and confirm that all proposed work as documented on the JOS has been completed according to installation specifications. Inspection information will be documented on the JOS, including further work requirements. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Attic areas

Attic insulation improves the thermal integrity and overall comfort of the dwelling. Other measures installed in attic areas can improve the health and safety of the structure. This is accomplished by installing insulation, ventilation, direct venting of exhaust systems, sealing bypasses, and other measures recommended by the Auditor/Inspector. Attic measures identified during the energy audit and proposed work will be documented on the JOS and entered into the EA4. Installed measures must have a SIR of one (1.0) or greater (with the exception of measures installed for health and safety).

In situations where deficiencies exist beyond the scope of weatherization (including major structural problems, deteriorated roofing, and unsafe electrical systems), the condition will be brought to the attention of the resident. Attic insulation will not be installed unless all necessary repairs/upgrades have been made prior to job completion. Direct Service Provider will retain any related correspondence in participant's file.

Energy audit procedure

The Auditor/Inspector will inspect all accessible attic areas for existing insulation. The Auditor/Inspector will identify heat-producing devices in the areas to be insulated, including chimneys, flues, recessed lights, transformers, fan motor housings, and knob and tube wiring and document their location on the JOS to ensure these areas are shielded or baffled and not covered by insulation. The Auditor/Inspector will also assess location of exhaust systems including bath fans, kitchen range fans, and dryer venting and verify direct connection to outside of attic area. While checking attic areas, the Auditor /Inspector will identify any supply or return ducting in the attic area and the amount and location of attic ventilation.

In addition to insulation, installation of vapor barriers, attic ventilation, flue and exhaust venting, bypass air sealing, fire break materials, duct insulation, shielding, and baffles will be considered for all accessible attic areas. Proposed work for attic areas requiring insulation and/or other measures will be documented on the JOS.

Installation specifications

Materials will be installed according to the manufacturer's specifications, local building codes, and the following minimum standards.

Attic preparation

Heat-producing devices

All heat-producing devices will be identified and shielded prior to the installation of attic insulation. Heat producing devices in attic areas include chimneys, flues, recessed lights, transformers, fan motor housings, and knob and tube wiring. Shielding of heat producing devices will be installed as follows:

1. Attach solid, flame resistant shielding to framing members around the heat-producing device with a minimum 3 inch air space between the shielding and the device. The height of the shielding must extend at least four inches above the final level of the insulation. Install according to manufacturer's instructions.

2. Install unfaced fiberglass batt/blanket insulation laid flat around the total perimeter of the device at a height extending at least four inches above the final level of the attic insulation and in a sufficient width to remain in place. Allow a minimum 3 inch air space between the device and the baffling.

Knob & Tube wiring

Insulation will not be installed over active knob and tube wiring. This type of wiring requires baffles or shielding between the blown insulation and the wiring, with batt/blanket insulation installed under the parallel wires.

1. Attach solid, non-metallic, flame resistant shielding to framing members along both sides of the wiring around the total perimeter with a minimum 3 inch air space between the shielding and the wire. The height of the shielding must extend above the final level of the insulation. Install according to manufacturer's instructions.
2. Install unfaced fiberglass batt/blanket insulation laid flat around the total perimeter of the wiring at a height extending above the final level of the attic insulation and in a sufficient width to remain in place. Allow a minimum 3 inch air space between the wire and the baffling.
3. Install an unfaced fiberglass batt/blanket with the highest possible R-value under the wiring and against the ceiling. Batt should be of sufficient length to reach the shielding along either side of the wiring.

Exhaust systems

Exhaust systems venting through attic areas will be connected directly to the outside. These systems include kitchen and bathroom fans, dryer vents, and other exhaust devices. With the exception of kitchen exhaust fans, connection to existing roof vents is acceptable if attic ventilation requirements are maintained. All exhaust ducting extending over 36 inches above the level of the attic insulation will be insulated to an R-11 with polypropylene twine, polyester twine or straps around ductwork. Space twine or straps no greater than 18 inches apart, or install vinyl or metallic tape with an ASTM flame spread of 25 or less and compatible with the insulation facing. Extend ductwork through the attic space up to the outside exhaust vent.

1. Kitchen range exhaust fans must be connected with a manufactured duct of not less than 26 gauge galvanized steel, substantially airtight and extended vertically, directly into a code approved metal vent cap.

Note: The duct should not run horizontally or contain 90-degree bends.

2. For other exhaust systems, install ducting fabricated of either flexible aluminum or rigid sheet metal secured with screws and substantially airtight. Any penetrations created by ducting should be sealed using packed fiberglass, rigid foam, foil-bubble wrap, or expanding foam.

Bypass air sealing

Surface areas between conditioned living spaces and unconditioned attic areas may require air sealing. These "bypasses" include gaps around chimneys, flues, soil stacks, plumbing vents, electrical boxes and wiring, exhaust fans, recessed lighting fixtures, drop ceilings, attic accesses, knee walls, open interior wall plates, and duct system penetrations. The following methods for sealing attic bypasses are recommended:

1. Open areas around chimneys and flues may be sealed either by installing sheet metal, sealed in place with a high temperature caulk; or by packing unfaced fiberglass insulation into the top end of the chase and applying a fire stop compound.
2. Open floor cavities between the first and second floors may be blocked at each end with one of the following; rigid foam, tightly packed, unfaced fiberglass insulation, or densely packed loose fill insulation.
3. Other bypass locations may be sealed using materials appropriate to the size and location of the bypass. These materials include high quality caulks (high temperature, silicone, urethane, and 20-year latex); polyethylene backer rod, polyurethane foams, sheet metal, plywood, and densely packed loose fill insulation.

Vapor barriers

Vapor barriers may be installed in attic areas when there is no existing insulation or barrier. Batt insulation with an attached vapor barrier installed toward the conditioned area, or a separate vapor barrier may be installed evenly and continuously prior to the installation of loose fill insulation. **Do not install vapor barriers over existing insulation or between layers of insulation.**

Attic accesses

Access doors and hatches between conditioned spaces and attic areas will be weather-stripped, insulated, and a barrier will be installed between access and loose fill insulation. The following methods are recommended;

1. As needed, apply weather-stripping on all sides of the access or stop. Install bolts or latches as necessary to ensure door stays in a tightly closed position.
2. Insulate access door to no less than the R-value of the adjoining surface (wall or ceiling). Fully cover access door with insulation and permanently secure. Retractable ladder accesses may require construction of an insulated cover over the entire opening.
3. Install barrier around the full perimeter of the access using unfaced fiberglass batt insulation or plywood frame attached to ceiling joists and access framing. Barriers must extend at least four inches above the final level of the attic insulation. When fiberglass batt insulation is utilized, it must be supported using lath to ensure the batts stay in place when the attic access is opened.

Attic ventilation

When possible, minimum ventilation requirements will be met for all attic areas. If minimum ventilation requirements cannot be met due to structural or other issues, documentation of issues must be included in the participant file. All venting will be screened with no less than 1/8 inch mesh. The minimum requirements for net free vent area are as follows:

1. For standard venting, the ratio of venting to ceiling area is not less than 1 square foot of net free area per 150 square feet.
2. If a vapor barrier is present, or the venting is split between high (roof, ridge, and gable venting) and low (soffit/eave venting), with a 3 foot rise between the high and low vents, the ratio of venting to ceiling area is not less than 1 square foot of net free vent area per 300 square feet.

Vent types

- **Gable Vents:** Install gable vents in gable end, centered with the ridge of the roof, with the louvers pointed downward. Position vents high enough to ensure ventilation is not restricted by attic insulation. Frame in opening when there is no sheathing behind gable end siding and wrap opening with exterior casing if necessary. When there is a possibility of moisture entering attic area, seal the vent flange with a moisture resistant sealant before securing the vent in place with screws.

- **Roof Vents:** Evenly space roof vents on the same side of the roof and as close to the ridge as possible. When possible, center vent between the truss cords. Seal underside of vent flange with a moisture resistant sealant and insert top and both sides of flange under shingles before securing the vent in place.

- **Soffit Vents:** Install vents in soffit area a uniform distance from the outside wall with louvers pointing toward the home. To ensure opening between the soffit and attic area is free of blockage, securely attach baffling material between the truss cords above vent to create an air chute.

Insulation

Insulation levels in attic areas will be installed to provide the highest possible R-value. Material will be installed evenly to maintain a consistent thermal blanket.

Open attic areas

Attic areas may be insulated using either loose fill, blow-in or batt/blanket insulation. Install insulation according to the following guidelines:

Loose fill

Install loose fill insulation evenly throughout attic area and toward eaves. Install barriers between attic areas over conditioned and unconditioned spaces (i.e., between attic and attached garages, porches, etc.) to maintain consistent insulation levels. Maintain required air spaces around heat producing devices and attic venting.

Batt/blanket

In areas with existing insulation the use of unfaced batt/blanket insulation sufficient to achieve a final value of R-49 is required. Install insulation with no gaps between batts and without undue compression.

In areas with no existing insulation, install faced batt/blanket insulation with vapor barrier toward conditioned area. Install second layer of unfaced insulation perpendicular to the first layer with no gaps. Ensure even coverage to achieve the highest possible R-value. The minimum acceptable value is R-49. Any exceptions to this installation requirement will be documented in the participant file. Maintain required air spaces around heat producing devices, attic venting, and knob and tube wiring.

Enclosed attic areas

Attic areas with "shed" style roofs and slope areas may be insulated using loose fill or batt/blanket insulation according to the following recommendations:

Loose fill

Closed attic spaces in finished areas can be insulated using methods similar to those used for installing wall insulation in finished wall cavities. The difference is slope areas are often open to adjoining attic areas providing access to the cavity. Slope and shed attic areas can be insulated using the following techniques:

1. For open-ended slopes, block ends of open cavities with unfaced fiberglass by packing material into openings at either end. Insulate the same as a wall cavity using the "tube-fill" method.
2. Attic areas covered by a shed roof with exposed rafter extensions can be accessed by drilling 2- 2 1/2 inch holes through bird blocking between rafters. If the slope of the roof is sufficient, the area can be accessed through the end wall or through roof venting installed above the space.
3. Closed cavities can be accessed using the same installation techniques as used for finished wall areas (See Wall Insulation, Finished Walls, Inside Access).

Batt/blanket

Slope and shed attic areas in unfinished areas can be insulated using the same installation techniques as used for unfinished wall areas (See Wall Insulation, Unfinished Walls).

Decked attic areas

Enclosed attic cavities located under decked areas can be insulated using the same techniques used for slope ceilings. Open-ended cavities can be blocked and filled using the tube fill method, and closed cavities can be accessed by drilling holes through the floor deck. Install wood plugs to seal holes unless additional insulation is installed over decked area.

Mobile homes

Additional ceiling insulation can be installed in mobile homes using a variety of methods. Use of lightweight, loose fill fiberglass is recommended for this application**.** When installing dense pack insulation, care must be taken to ensure no damage to the mobile home roof, ceiling, or attic framing occurs.

Install insulation in mobile homes according to the following guidelines:

1. **Ceilings in mobile homes with aluminum wiring will not be insulated.**
2. Carefully inspect ceiling for weakness and evidence of roof leaks prior to adding insulation. Do not add insulation if potential damage to ceiling may occur;
3. Check for level of existing insulation and available clearance in cavity to determine cost effectiveness of measure,
4. **Do not insulate mobile home ceilings if trusses do not have cross bracing, surface bracing, or gussets supporting the roof framing.**

<u>Access mobile home ceiling cavity through one of the following methods:</u>

1. Cut sufficient holes through top of roof to access cavities between trusses. Patch holes with sheet metal, corrosion resistant screws, roof sealant and membrane;
2. Drill holes through interior ceiling to access each cavity using same installation techniques as used for finished wall areas (see Wall Insulation, Finished Walls, and Inside Access). Installation of surface mounted, plastic plugs provides an acceptable finish. Plugs must be sealed to protect installed insulation and ensure health and safety of dwelling occupants is not compromised.

Access cavity for installation of insulation using a tube-fill method. Recommended equipment for this application is 2 1/2 inch schedule 40 PVC or ABS pipe. Cut into gable or crowned end of attic space by cutting gable vent sized openings (double wide), or access holes large enough to insert and control direction of pipes (single wide). After insulating attic area cover all openings with appropriately sized, louvered vent. When there is a possibility of moisture entering attic area, seal the vent flange with a moisture resistant sealant before securing the vent in place with screws.

Certification

Following installation of attic insulation, certification of material installed and coverage will be made available for review at job site.

- In site built homes, staple a bag label and completed insulation certification form provided by the manufacturer in the attic area near access opening.
- In mobile homes, certification may be attached to the electrical service panel access door, in water heater compartment, or in a location documented on the JOS.

Inspection procedure

The Auditor/Inspector will verify the proper installation of all attic measures and confirm that all proposed work as documented on the JOS has been completed according to installation specifications, including insulation, vapor barriers, attic ventilation, flue and exhaust venting, bypass air sealing, fire break materials, duct insulation, shielding, and baffles. Inspection information will be documented on the JOS, including further work requirements. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Floor areas

Floor insulation improves the thermal integrity and overall comfort of the dwelling. Other measures installed in crawlspace areas can improve the health and safety of the structure. This is accomplished by installing insulation, ventilation, direct venting of exhaust systems, sealing bypasses, and other measures recommended by the Auditor /Inspector. Floor measures identified during the energy audit and proposed work will be documented on the JOS and entered into the EA4. Installed measures must have a SIR of 1.0 or greater (with the exception of measures installed for health and safety).

In situations where deficiencies beyond the scope of weatherization exist (including major structural problems, plumbing and sewer leaks, vermin infestation, and unsafe electrical systems), the condition will be brought to the attention of the resident, and floor measures will not be installed unless all necessary repairs/upgrades have been made prior to job completion. Activities in areas with less than 24 inches of clearance may be waived. The JOS must be documented regarding the safety/clearance issue.

Energy audit procedure:

The Auditor/Inspector will inspect all accessible basement and crawlspace areas for existing insulation levels. The Auditor/Inspector will identify heat producing devices in the areas to be insulated, including chimneys, flues, transformers, and knob and tube wiring and document their location on the JOS to ensure these areas are not covered by insulation. The Auditor/Inspector will also assess location of exhaust systems including down-drafted kitchen range fans and dryer venting and verify their direct connection to the outside of basement or crawlspace area.

In addition to insulation, installation of vapor barriers, crawlspace ventilation, flue and exhaust venting, and bypass air sealing will be considered for all accessible floor areas. Proposed work for floor areas requiring insulation and/or other measures will be documented on the JOS.

Installation specification

Materials will be installed according to the manufacturer’s specifications, local building codes, and the following minimum standards.

Floor measures

Heat-producing devices

All combustion appliances and heat producing devices in basement and/or crawlspace areas will be identified prior to installing insulation.

- Heat producing devices in floor areas include chimneys, flues, transformers and knob and tube wiring.
- Allow a minimum 3 inch air space between heat producing devices and floor insulation.

Knob & Tube wiring

Insulation will not be installed over active knob and tube wiring. This type of wiring requires batt/blanket insulation to be installed between the wiring and the subfloor when knob and tube runs through floor joists in unconditioned areas.

- Install highest possible R-value unfaced fiberglass batt/blanket insulation between the knob and tube wiring and the floor, being careful not to cover wiring with insulation or damage the wire.

Exhaust systems

Exhaust systems venting through basement and crawlspace areas will be connected directly to the outside. These systems include down drafted kitchen range fans, bathroom fans (in basement areas), and dryer venting.

- Down drafted kitchen range exhaust fans must be connected with a manufactured duct of not less than 26 gauge galvanized steel, substantially airtight, extended directly to the outside through the basement or crawlspace area, and attached to a dampened hood. Rigid smooth metal is recommended.
- For other exhaust systems, install ducting fabricated of either flexible aluminum or rigid sheet metal secured with screws, substantially air tight, and attached to an outside hood.
- Any penetrations in the building envelope created by ducting should be sealed using packed fiberglass, rigid foam, foil-bubble wrap, or expanding foam

Bypass air sealing

Surface areas between conditioned living spaces and unconditioned floor areas may require air sealing. These "bypasses" include gaps around chimneys, flues, soil stacks, plumbing vents, electrical boxes and wiring, crawlspace accesses, duct system penetrations, and openings under bathtubs and showers. The following methods for sealing floor bypasses are recommended:

1. Open floor cavities may be boxed in with plywood and sealed with caulk, tightly packed with unfaced fiberglass insulation, or covered with a flexible covering secured with lath or staples.
2. Open areas around chimneys and flues may be sealed either by installing 28 gauge sheet metal, sealed in place with a high temperature caulk, or by packing unfaced fiberglass insulation into the bottom end of the chase and applying a non-combustible fire stop compound.
3. Other bypass locations may be sealed using materials appropriate to the size and location of the bypass. These materials include high quality caulks (high temperature, silicone, urethane, 20 year latex), polyethylene "backer" rod, polyurethane foams, sheet metal, and plywood.

4. Seal penetrations around duct boots with butyl tape or water-based mastic and mesh according to manufacturer's instructions.

Vapor barriers

Vapor barriers may be installed in floor areas when there is no existing insulation or barrier. Batt insulation with an attached vapor barrier installed toward the conditioned area, or a separate vapor barrier may be installed evenly and continuously prior to the installation of unfaced batt insulation. **Do not install vapor barriers over existing insulation.**

Crawlspace accesses

Access doors and hatches between conditioned spaces and crawlspace areas will be weather-stripped and insulated as needed. The following methods are recommended:

1. Apply weather-stripping on all sides of the access or stop as needed. Trim or adjust access to ensure door stays in a tightly closed position. Insulate accesses to no less than the R-value of the adjoining surface (basement pony wall or floor). Fully cover access with insulation and permanently secure, or install lath below access to support batt or blanket insulation.
2. Securely attach a cover to outside accesses with bolts/latches as needed to keep out animal and pests**.** Outside accesses may be screened with 1/4-inch mesh screen, if additional venting is needed.
3. Weather-strip all access doors between unconditioned basements and conditioned areas.

Ground covers

Ground covers will be installed in crawlspace areas where no cover exists**,** the existing cover is damaged or not large enough to cover the total crawlspace area, or the existing ground cover is clear visquene. Install ground cover according to the following guidelines:

1. Install a minimum 6-mil carbon black polyethylene or equivalent in perm rating, strength and resistance to soil chemical degradation.
2. Overlap all joints by no less than 12 inches, with the outer edge lapped up against the foundation wall. **Completely cover all exposed soil.**
3. **If ground cover is not installed due to clearance issues, it must be noted on the JOS.**

Crawlspace ventilation

Minimum ventilation requirements will be met for all crawlspace areas when possible. Ventilation is not required in unheated basement areas having concrete floor and walls (no soil exposure). All venting will be screened with no less than 1/4 inch mesh screen. The minimum requirements for net free crawlspace vent area are as follows:

1. For standard venting, the ratio of venting to floor area is not less than 1 square foot of net free vent area per 300 square feet.
2. If a vapor barrier is present and the venting is equally distributed along the length of at least two opposite sides, the ratio of venting to floor area is not less than 1 square foot of net free vent area per 1,500 square feet.

3. Install additional venting as needed by cutting vent holes in rim joist, installing vents along the length of at least 2 opposite sides of crawlspace area. Outside access hatch may be screened.
4. Replace existing vents or framing, which are blocked or damaged. Net free area can be increased by removing old vent (also old framing) and installing 1/4-inch metal mesh over opening.
5. Insulation should be baffled to keep vents operating and clear. Polypropylene twine, polyester twine or lath may be used to keep vents open.

Insulation

Insulation levels in floor areas will be installed to R-30 or equivalent to the depth of the floor cavity to provide the maximum final R-value. Material will be installed in continuous contact with the subfloor. Install floor insulation using the following techniques:

Open floor cavities

Unconditioned floor areas may be insulated using batt/blanket insulation. Insulation will be installed according to the following guidelines:

Batt/blanket

1. Cut batt/blanket insulation to fit each floor cavity with ends fitting tightly and not overlapping;
2. Install insulation to fit tight against structural members, plumbing, wiring and electrical boxes with no gaps. Insulation material should be in continuous contact with subfloor;
3. Do not compress insulation more than 10% behind or around obstructions;
4. Install faced insulation with an attached vapor barrier with the barrier between the insulation and the conditioned area;
5. Insulate exposed band/rim joists in conditioned basement areas with the material fitting tightly between the framing materials and continuously against the band/rim joist.

Support system

Insulation installed in open floor areas will be supported using corrosion resistant fasteners to penetrate the supporting structural member by a minimum of 5/8 of an inch. Do not block crawlspace venting with insulation. To support insulation installed in open floor areas, use one of the following methods:

1. Install wood lath across floor joists spaced no greater than 18 inches apart;
2. Install polypropylene or polyester twine in a zigzag pattern attached to joists on each side of cavity with anchor points spaced no greater than 12 inches apart;
3. A vapor permeable air barrier may be installed evenly and continuously, overlapping joists a minimum of 3 inches at seams and secured every 12 inches.

Exposed areas

In basement ceiling areas, floor area must be covered with a fire break material meeting ASTM flame spread rating of 25 or less following installation of batt insulation (such as 1/2 inch drywall). In exposed crawlspace areas (foundation walls open to the outdoors), a vapor permeable air barrier may be installed evenly and continuously, overlapping floor joists a minimum of 3 inches at seams and secured every 12 inches. After insulating exposed floor areas in garages located below living spaces, the area must be covered with fire break materials according to local codes.

In situations where the resident is remodeling and will provide cover for the insulation at a later date, the Direct Service Provider may document the information on the JOS and have the participant sign the form indicating their agreement.

Enclosed floor areas

Enclosed cavities in unconditioned, finished basement areas can be accessed and insulated using the same installation techniques as used for finished wall areas (see Wall Insulation, Finished Walls).

Mobile homes

Additional floor insulation can be installed in mobile homes using a variety of methods. Use of lightweight, loose fill fiberglass is recommended for this application**.** When installing dense pack insulation, care must be taken to ensure no damage to the mobile home rodent barrier and duct work occurs. Install insulation in mobile homes according to the following guidelines:

1. **Floors areas in mobile homes with aluminum wiring will not be insulated;**
2. Carefully inspect rodent barrier for weakness and evidence of plumbing leaks prior to adding insulation. Do not add insulation if potential damage to mobile home may occur, or to areas with plumbing leaks unless repaired prior to measure installation;
3. Check for existing insulation levels and available cavity clearance to determine cost effectiveness of measure;
4. Repair all gaps in rodent barrier and seal all ductwork prior to installing blown in insulation. Mobile home floors may be insulated using the same technique as site built homes if no rodent barrier is in place.

<u>Access to mobile home floor areas can be attained through one of the following methods:</u>

1. Cut sufficient holes through bottom of rodent barrier to access floor cavities between joists. Patch holes with membrane, sheathing, or other rodent barrier material attached with corrosion resistant staples, screws and/or adhesive.
2. Access cavity for installation of insulation using a tube-fill method. Recommended equipment for this application is 2 1/2 inch schedule 40 PVC, ABS or metal muffler pipe. Remove metal siding/trim over rim joist, cut or drill into rim joist from front or side (depending on framing) into each cavity. Make access holes large enough to insert and control direction of pipes. Seal holes, reinstall metal siding/trim.

Skirting

Reinstall or re-secure mobile home skirting where damaged or loose. Minor repairs to skirting are recommended to ensure buffering of floor area and to keep animals from damaging crossover ducts and rodent barriers. In some cases, mobile home skirting may be installed with prior approval in order to protect installation(s) of insulation and ground cover.

Inspection procedure

The Auditor/Inspector will verify the proper installation of floor measures and confirm that all proposed work as documented on the JOS has been completed according to installation specifications. Inspection information will be documented on the JOS, including further work requirements. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Air Sealing

Air sealing measures significantly reduce energy consumption and improve the overall comfort of the dwelling. During the audit, the blower door establishes the air tightness of each home, and the location of leakage areas. By using pressure diagnostic tools, the Auditor assesses the overall air leakage and general health and safety of the structure. Guidelines for the minimum standards for air sealing ensure maximum energy savings, while protecting indoor air quality, occupant health and safety, and insuring no unsafe conditions are aggravated. This is accomplished by the blower door directed air sealing of bypasses in the building envelope to standards of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

Air sealing measures identified during the energy audit and proposed work will be documented on the JOS and entered into EA4. Installed measures must have a SIR of 1.0 or greater (with the exception of measures installed for health and safety).

If deficiencies beyond the scope of weatherization exist (including major structural and severe indoor air quality problems), the conditions will be brought to the attention of the resident, and air sealing measures affecting those areas will not be installed unless the situation has been resolved prior to job completion.

Energy audit procedure

When feasible, the Auditor/Inspector will conduct a one-point blower door test to establish the airflow rate between the conditioned area and the outside. The Auditor/Inspector will identify major leakage areas and document their location on the JOS. Proposed work for air sealing and/or other repair measures will be documented on the JOS, including weather-stripping, repairing broken windows, caulking, duct sealing, window and door replacements, sheathing, membranes, and other materials designed to seal obvious leaks in the building envelope. In situations where air tightness is already below minimum standards, the Auditor /Inspector will consider measures designed to improve indoor air quality (see Health and Safety Measures) and document findings on the JOS by indicating “on target” (no air sealing required).

Blower door procedure

Install the blower door in an exterior doorway with fewest obstructions within 3 feet of the fan. Prior to blower door testing, the dwelling must be prepared as follows:

1. **Do not perform blower door testing when a fire is present in a wood stove or fireplace.** If possible, notify occupants 24 hours in advance to extinguish fireplace/stove.
2. Close exterior doors and windows and all other envelope openings (attic accesses, etc.);
3. Open interior door and duct registers;
4. Reduce settings on combustion appliances to ensure they do not operate during testing;
5. Close dampers in wood stoves and fireplaces (ensure no fire is present);
6. Turn off all exhaust systems including exhaust fans, clothes dryers, and air conditioners;
7. Close off large, seasonal bypasses if possible prior to testing (swamp coolers, window air conditioners, etc.)

After preparing dwelling for testing, zero gauges to inside pressure before connecting tubes or removing fan rings. Remove **A** or **B** fan ring, and check cubic feet of air flow per minute (cfm) at 50 pascals (cfm/50), and document findings on JOS. If pressure of 50 Pascals cannot be reached, check envelope for open window/door, etc. If necessary, remove all rings and test with open fan to highest possible pressure and refer to the following "Can't Reach 50" (CRF) table below. Multiply the flow rate by the CRF to establish actual flow rate at 50 Pascals.

House Pressure	**45**	**40**	**35**	**30**	**25**	**20**	**15**	**10**
CRF Factor	1.07	1.16	1.26	1.39	1.57	1.81	2.19	2.85

Document existing flow rates and fan ring used on JOS. While performing blower door test, the Auditor /Inspector will walk through home, checking areas of the building envelope for leakage and documenting findings on JOS. If unable to perform pre-test at time of audit, document reason and estimated CFM/50 on JOS (i.e., remodeling, windows and doors missing, etc.).

Proposed (target) flow rate for dwelling will be established based on ASHRAE standards (Appendix K). Reasons for proposed flow rates greater than the minimum standard will be documented on the JOS (i.e., remodeling, pets in home, etc.).

Below minimum standard

In situations where air tightness is already below minimum standards, the Auditor/Inspector will consider measures designed to improve indoor air quality (see Health and Safety Measures), including installation of mechanical ventilation.

Installation specification

Crews are encouraged to use the blower door while performing air sealing to ensure minimum air standards are maintained. Air sealing will be discontinued when minimum standards are reached. Materials will be installed according to the manufacturer's specifications, local building codes, and the following minimum standards.

Air sealing measures

Above minimum standards

When possible, install air sealing measures after all other measures are completed because air flow rates are usually reduced when other measures are installed (such as dense pack insulation). A periodic one point blower door test should be conducted while performing air sealing. Air sealing will be discontinued once the target flow rate is achieved.

Appropriate air sealing materials should be used depending on the application. Large air bypasses can be sealed with a variety of materials, including gypsum board, plywood, OSB wafer board, siding, rigid foam board, and sheet metal. Expanding foam, caulk, butyl tapes, membranes, mastics, gaskets, and densely packed insulation can be used to seal small and intermediate sized openings. Specific methods for sealing air bypasses can be found in each section of this Manual related to the building envelope.

Post blower door testing

When all measures called for on the JOS are completed, the installer(s) may perform a one-point post blower door test to determine the CFM/50. If additional air sealing is required, work should be performed to seal additional, obvious leakage areas and any remaining leaks in ductwork. After these leaks are repaired, if the CFM/50 cannot be reduced by more than 100 CFM within one hour work by a two person crew, air sealing work may be discontinued and the final blower door results entered on the JOS with documentation regarding inability to further reduce leakage. Installers may perform and document the final blower door test when the job is completed, but the Auditor/Inspector will be responsible for periodically testing and checking the installers' readings for accuracy. Any discrepancies between readings should be addressed prior to confirmation of job completion.

Inspection procedure

The Auditor/Inspector will verify the proper installation of air sealing measures and confirm that all proposed work as documented on the JOS has been completed according to installation specifications and perform post test with blower door to confirm final CFM/50 as needed. Safety and draft testing of combustion appliances is required if reductions in CFM/50 have been achieved (see Heating System Measures, Draft Testing). Inspection information will be documented on the JOS, including further work requirements. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Duct Systems

Duct system measures improve the delivered efficiency of the heating system and overall comfort of the dwelling. This is accomplished by installing insulation, sealing penetrations, repairing support systems, and other measures recommended by the Auditor/Inspector. Duct system measures identified during the energy audit and proposed work will be documented on the JOS and entered into the EA4. Installed measures must have a SIR of 1.0 or greater (with the exception of documented measures installed for health and safety).

In situations where deficiencies beyond the scope of weatherization exist (including major structural problems, plumbing and sewer leaks, vermin infestation, and unsafe environments), the condition will be brought to the attention of the resident, and duct measures will not be installed unless all necessary repairs/upgrades have been made prior to job completion. Activities in areas with less than 24 inches of clearance may be waived. The JOS must be documented regarding the safety/clearance issue.

Energy audit procedure

The Auditor/Inspector will inspect the heating system and all accessible supply and return air ducts for needed measures, including repair of loose connections, replacement of damaged or missing components, inadequate support systems, and insulation. Proposed work for duct systems requiring repairs, air sealing, insulation, and/or other measures will be documented on the JOS. Each duct system will be tested for air tightness prior during energy audit with either a duct blaster or a pressure pan. Any issues resulting in diagnostic testing not being performed at the time of the audit will be documented on the JOS. In these cases, the weatherization crew will perform diagnostic testing on the duct system in order to determine duct leakage prior to beginning work on the home. The only exceptions to this requirement are:

- Existing duct system has less than 40 linear feet in an unconditioned space
- Existing duct system is constructed, sealed, or covered with asbestos
- Existing duct system is in a basement

Inspection specification

Materials will be installed according to the manufacturer's specifications, local building codes, and the following minimum standards.

System components

Missing or damaged duct system components will be repaired or replaced. These include, boots, registers, elbows, ducting, and furnace cabinet doors. Replacement duct system components should be of like material to existing; preferably 26 gauge galvanized sheet metal.

Support systems

Repair or replace missing duct support systems when needed before installing duct insulation. Secure ducting level (eliminating bends that may create moisture traps) with corrosion resistant wire or galvanized metal hangers according to the following guidelines:

1. In crawlspace areas, secure duct systems off the ground, firmly secured to framing members. Extruded polystyrene may be installed under ducting designed to be close to the ground;
2. Firmly attach duct systems in basement areas to basement ceiling framing members;
3. Support duct systems in attic areas to framing members where system is suspended off the attic floor.

Air sealing duct systems

All duct systems in unconditioned areas will be sealed prior to installation of exterior insulation. Perform duct sealing according to the following guidelines:

1. Clean and prepare delivery system surface area at joints, including supply and return duct connections, boot connections, ductwork boxed into floor joists and framing cavities, furnace plenum connections, furnace cabinets, and all other possible joints, holes, cracks, seams couplings, unions, elbows and connections in duct system.
2. Apply sealants according to manufacturer's specifications. Water based mastic is the recommended sealant. Install mesh tape over gaps in surface area, applying mastic to completely cover tape and joint in sufficient quantity to ensure proper adhesion and coverage. Mastic is recommended for use in site built homes.
3. Butyl tape (2 mil aluminum backing with minimum 15 mil butyl adhesive) may be applied to duct joints in sheet metal. Thoroughly clean surface before installing tape. Butyl tape is recommended for use in for mobile home duct systems.
4. Seal off end of duct system in **mobile homes** with blocking and butyl tape or mastic at last register on either end of duct run.
5. Complete post work diagnostic testing to ensure ducts are airtight prior to installing insulation.

Insulation

<u>Duct systems in unconditioned areas will be insulated in the following situations</u>:

1. When they are not insulated.
2. When they are under insulated (with less than recommended R-value of insulation).
3. When existing insulation is not securely attached.

R-Values

<u>The guidelines for installing duct insulation are as follows:</u>

1. Attach exterior insulation to furnace plenums, supply and return ducting, and building cavities used for ducting which are located in crawlspaces, attics, and other unconditioned areas.
2. Install a minimum of R-11 insulation on systems located in crawlspaces or other unconditioned areas (i.e., basements, porches, and garages).
3. Install a minimum of R-19 on systems located in attic areas.

4. On duct systems subject to routine human contact (i.e., located in basements, porches, or garages), install insulation with a suitable facing made of vinyl or foil material with an ASTM flame spread rating of 25 or less. **Kraft faced (insulation with a paper backing) is not allowed for this application.**

Support system

Install polypropylene twine, polyester twine or straps around ductwork. Space twine or straps no greater than 18 inches apart, or install vinyl or metallic tape with an ASTM flame spread of 25 or less and compatible with the insulation facing. **Duct tape is not an allowable support material.**

Inspection procedure

The Auditor/Inspector will verify the proper installation of duct measures, confirming that all proposed measures as documented on the JOS have been completed according to installation specifications. Inspection information will be documented on the JOS, including further work requirements. Any work and/or diagnostic testing not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Water Heaters & Pipe Insulation

Water heater and pipe insulation measures may significantly reduce energy consumption. This is accomplished by installing tank insulation, reducing thermostat settings, repair or replacement of defective units, and other measures recommended by the Auditor/Inspector Auditor. Water heater and pipe insulation measures identified during the energy audit and proposed work will be documented on the JOS and entered into the EA4. Installed measures must have a SIR of 1.0 or greater (with the exception of crawlspace pipe insulation and measures installed for health and safety).

In situations where deficiencies beyond the scope of weatherization exist (including unsafe electrical systems and defective plumbing), the condition will be brought to the attention of the resident, and weatherization measures will not be installed unless all necessary repairs/upgrades have been made prior to job completion.

Energy audit procedure

The Auditor will visually inspect all appliances for evidence of leakage in fuel and water lines, improper venting, frayed or damaged wiring, and any other hazardous conditions. Following visual inspection, if unit is safe to operate, the Auditor will perform diagnostic testing. Proposed work for water heaters and pipes requiring insulation and/or other measures will be documented on the JOS.

Visual inspection

Prior to diagnostic testing, the Auditor will conduct a visual safety inspection of all water heaters and plumbing systems. When safety problems are identified during visual inspection, conditions will be documented on the JOS with recommendations for repair or replacement. **No diagnostic testing will be conducted until a qualified technician has corrected unsafe conditions.** The safety inspection should be conducted according to the following guidelines:

Gas/propane water heaters

- Discuss with occupants any problems they may be having with the appliance, including leaks, fumes, and malfunctions. With combustion appliances, note participant complaints of health problems, headaches, nausea, and other symptoms, which may indicate an unsafe appliance;
- Inspect fuel lines and components for leaks. When gas or propane leaks are detected, turn the gas valve on the appliance to the **'Off-position'** and call for immediate service by a licensed contractor;
- Inspect draft diverter and vent pipe for improper installation, defective components, or evidence of improper combustion (soot/rust near diverter and exhaust port).
- When combustion appliances are located in the living area, check for sufficient combustion air. Document need for additional combustion air on JOS when necessary.
- Inspect tank and plumbing around water heater for evidence of leaks. Note improper venting of pressure relief valve. If relief valve is not connected to vent pipe, indicate attachment of vent pipe to appliance relief valve under proposed work on the JOS.

Electric water heaters

- Discuss with occupants any problems they may be having with the appliance, including leaks and malfunctions.
- Switch circuit breakers to **'Off-position'**. Remove element cover plates and inspect for loose connections and/or frayed, burned wiring.
- Inspect tank and plumbing around water heater for evidence of leaks. Note improper venting of pressure relief valve. If relief valve is not connected to vent pipe, indicate attachment of vent pipe to appliance relief valve under proposed work on the JOS.

Temperature settings

- Test water temperature at a faucet closest to the water heater. Set a thermometer in a glass or cup, and run hot water until the temperature stabilizes. Document the existing water temperature on the JOS.
- Recommended water heater temperature settings are between 120° and 140°. Educate the household about the benefits of lower thermostat settings (reduced energy costs, less chance of scalding). In households with small children and the elderly, water temperature should be at the lowest possible setting (120°). With participants' permission, set water heater temperature to recommended temperature range and document the adjustment on the JOS.

Diagnostic testing

When the water heater is inspected and found to be in a safe condition, the following diagnostic testing will be conducted:

Gas/propane water heaters

When a combustion water heater is located in a conditioned area or adjacent location (garage, cellar, etc.), the Auditor will conduct safety testing. For units located in a conditioned area (inside the home), establish a **worst case scenario** prior to testing by closing all exterior doors and windows and turning on all exhaust systems (bathroom vent fans, range fans, dryer, etc.). In cases where the water heater and heating system are located in the same area or use a common flue, operate and test both appliances at the same time. Prior to testing, assemble and calibrate testing equipment according to the manufacturer's instructions.

1. In single-wall flue pipes, drill a 5/16-inch hole in the flue between 12 and 24 inches above the draft diverter.
2. **If flue is multiple-wall, insulated pipe or combustion appliance is a high efficiency, condensing unit, do not drill test hole in flue.**
3. Increase the thermostat/gas valve setting to fire unit.

Draft test

To draft test appliance, insert probe into hole in flue pipe, keeping probe in center of flue and perpendicular to pipe. On standard draft units, check for spillage of flue gases around the diverter (warm, moist air flowing into the living space). Flue draft should be within the following range:

Outside Temperature	Acceptable Draft
Greater than 80ºF	-.005 to -.10
30ºF to 80ºF	-.01 to -.10
Less than 30ºF	-.02 to -.10

If flue draft is not acceptable, document proposed work on JOS (i.e., check/ repair flue, install combustion air vent, etc.).

Carbon monoxide test

Perform Carbon Monoxide (CO) test according to instructions for test equipment using the following guidelines:

1. Allow the unit to operate for 5 minutes, and take gas samples from both sides of the exhaust port above the baffle dividing the internal exhaust flue.
2. Take undiluted samples of the combustion gases by inserting the probe under the draft diverter into the area above the exhaust port. When the CO reading stabilizes, document the level on the JOS.

3. While the water heater is operating, test the ambient air in the area around the unit for evidence of carbon monoxide.

Maximum CO levels

The maximum allowable level of CO at the exhaust port (undiluted gases) is 100 parts per million (PPM). CO levels in the ambient, inside air around appliance should not exceed 9 PPM. High levels of CO in water heaters may be caused by a variety of factors, including one or more of the following:

1. improper orifice installed or unit may be over fired;
2. insufficient draft or combustion air;
3. misalign or clogged burner assembly;
4. soot buildup in combustion chamber and flue.

If maximum allowable CO levels in exhaust gases are exceeded, the unit may not be operating properly and should be serviced and/or replaced by a qualified technician. If unsafe operation or defective components are identified in a gas/propane water heater, indicate repair or replacement of unit and document findings on the JOS.

Electric water heaters

Diagnostic testing will be performed on electric water heaters to verify the unit is operating properly. Prior to testing, assemble and calibrate testing equipment according to the manufacturer's instructions.

Electric circuit amperage

Element circuit amperage testing is performed on a **'live circuit'** to determine amperage draw; exercise extreme caution while performing tests on electric appliances**.**

Test the amperage draw of each element in an electric water heater. A standard 4500-watt water heater element on a 220-volt circuit will draw approximately 20 amps. For this example, the equation for calculating the appropriate amperage draw is:

4500 (Watts) ÷ 220 (Volts) = 20.45 (Amps)

Circuits drawing improper amperage may indicate an electrical or component problem. Use the following procedure for testing element circuit amperage in electric water heaters:

1. While element cover plates are off following visual inspection, turn circuit breakers to the **'On- position'.**
2. Attach electrical tester around one wire connected to the top element and/or thermostat.
3. Increase thermostat setting until circuit closes. Document reading for amperage at element.
4. Decrease setting on top thermostat and repeat procedure for bottom element (for water heaters with two elements).
5. Reset thermostats to appropriate settings (see **Water Heaters, Temperature Settings**).

Continuity test

If you are unable to get an amperage reading through the element circuit test, the water heater probably has a defective component. Test components using the following continuity tests:

1. Turn circuit breaker to the **'Off-position'**.
2. Turn thermostat to the highest setting, and check continuity through circuit. If circuit is open, check to make sure the water temperature is not too hot to allow the thermostat circuit to close. If the thermostat circuit is closed (shows continuity), the element may be bad.
3. Check continuity through element, and between element and tank to determine if element is bad.

If defective components are identified in an electric water heater, indicate repair or replacement of unit and document findings on the JOS.

Additional documentation

In addition to diagnostic test results and temperature settings, the Auditor will document the following water heater information on the JOS:

1. Number of occupants in the home;
2. Diameter and height of the water heater;
3. Type and cost of fuel;
4. Location of water heater (conditioned or unconditioned).

Installation specifications

Water heater repairs, replacements, tank insulation, pipe insulation, plumbing, wiring, gas piping, venting and other measures will be installed according to the manufacturer's specifications, local building codes, and the following minimum standards.

Repairs & replacements

Materials will be installed according to the manufacturer's specifications and local building codes. Repairs should be made to water heaters based on serviceability and the overall condition of the unit

Water heaters may be replaced when energy savings justify the replacement cost. As with all energy efficiency measures installed with DOE funds, water heater replacement must result in a savings-to-investment ratio (SIR) of 1.0 or greater.

The economic lifetime used in the SIR calculation should not exceed the manufacturer's guarantee. Water heater replacements are generally not cost effective unless savings accrue for at least 10 years. Therefore, agencies should purchase new replacement water heaters with at least a 10-year guarantee.

Water heaters may be replaced for energy-related health and safety reasons.

Replacement units can be one of four types: (1) standard tank water heater; (2) whole-house, tankless (also known as demand, instantaneous, and flash) water heater; (3) heat pump water heater; or (4) solar water heater.

Auditor/Inspectors take into consideration the following when considering water heater replacement:

Household size

Hot water consumption

Existing water heater performance

Existing water heater compartment

Hot water heater replacement sizing chart

Household Size	Gallon Capacity
1 – 3	50 (standard tank)
4 – 6	60 (standard tank)
Over 6	60 (standard tank) or whole-house, tankless

Insulation

Install water heater tank/jacket insulation with a suitable facing made of vinyl or foil with an ASTM flame spread rating of 25 or less. Insulation will be secured with twine, straps and/or vinyl or metallic tape compatible with the insulation facing. **Tank/jacket insulation will not be installed on water heaters with a label warning against additional, exterior insulation.**

Install insulation according to the following guidelines:

1. Do not cover drain or pressure relief valve and vent pipe;
2. Cut out flap over '**Operation and Safety Instructions**' on all water heaters, re-tape, and label;
3. On electric water heaters, cut out flap for access to thermostats, re-tape and label;
4. On gas/propane water heaters, do not insulate top of unit, within 3 inches of burner access and valve assembly, or block combustion air supply.

Do not install tank/jacket insulation when SIR is less than one (1.0), or:

- Existing insulation is satisfactory**;**
- Water heater is exposed to weather;
- Unit is located within 12 inches of a cook stove;
- Clearance is less than 3 inches on all sides (electric), or with 6 inches clearance in front (gas/propane) water heaters;
- Evidence of severe component problems, imminent failure, or code violations.

Water pipe insulation

Insulate all accessible water pipes in unconditioned areas with no less than R-4 preformed insulation or up to R-11 unfaced fiberglass. When possible, insulate hot and cold supply lines 3 feet off water heaters (especially in unconditioned areas, i.e., garages, cellars, porches, etc.). Secure fiberglass wrap with polypropylene twine, polyester twine or straps spaced no greater than 12 inches apart. Install properly sized, preformed insulation secured no greater than 24 inches apart with joints taped. Ensure coverage of all joints, elbows, unions and tees. Activities may be waived in areas with less than 24 inches of clearance, or where there are plumbing leaks beyond the scope of the program. The job order sheet should be documented regarding these issues.

Inspection procedure

On job completion, the Inspector will verify the completion of all water heater and pipe measures. Post diagnostic testing of appliances will be conducted in the following cases.

Post testing

If water heater has been repaired or replaced, post testing of the unit for function and safety will be conducted on all units according to audit procedures. Required tests include:

- Gas/Propane: Water temperature, draft test, and CO testing.
- Electric: Water temperature, Element Circuit Amperage.

If CFM/50 has been reduced in homes with combustion appliances located in conditioned areas, the following test will be conducted on all gas fired appliances:

- Gas/Propane: Draft test.

The Auditor/Inspector will verify the proper installation of water heater and pipe measures and confirm that all proposed measures as documented on the JOS have been completed according to installation specifications. Inspection information will be documented on the JOS, including post diagnostic test results and any further work requirements. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Heating Systems

Heating system measures can significantly reduce energy consumption, while other measures related to the heating system can improve the indoor air quality and the overall health and safety of the dwelling. This is accomplished by repairing or replacing defective units and delivery systems, improving combustion appliance drafting, lowering carbon monoxide emissions, and other measures recommended by the Auditor/Inspector. Heating system diagnostic test results, measures identified during the energy audit, and proposed work will be documented on the Job Order Sheet (JOS) and entered into the computerized audit (EA4). Installed measures must have a savings-to-investment ratio (SIR) of one (1.0) or greater (with the exception of measures installed for health and safety).

In situations where deficiencies beyond the scope of weatherization exist (including major repairs and replacement costs in excess of allowable limits), the participant will be notified and suggestions will be made for obtaining funding from other sources (homeowner, landlord, other Direct Service Provider, etc.). **No weatherization measures, which may aggravate a hazardous situation, will be installed unless all necessary repairs and/or upgrades to heating system will be made prior to job completion.**

All replacements will have minimum of 90% efficiency unless structural issues require a less efficient model. Any exceptions to this requirement will be documented in the participant file.

Emergency response

The agencies/Direct Service Provider will maintain an inventory of portable electric space heaters to provide to participants in **no-heat** situations during the heating season. Homes with inoperable or unsafe heating systems will be given emergency priority, and the heating system will be repaired or replaced as soon as possible. Space heaters will be returned to the Direct Service Provider when the home has a safe, operational heating system.

Energy audit procedure

The Auditor will visually inspect all appliances for evidence of leakage in fuel lines, cracks in heat exchangers, improper venting, frayed or damaged wiring, and any other hazardous conditions. Following visual inspection, if unit is safe to operate, the Auditor will perform diagnostic testing. Proposed work for heating systems and/or other related measures will be documented on the JOS.

Visual inspection

Prior to diagnostic testing, the Auditor will conduct a visual safety inspection of all heating systems. When safety problems are identified during visual inspection, conditions will be documented on the JOS with recommendations for repair or replacement. **No diagnostic testing will be conducted until a qualified technician has corrected unsafe conditions.** The visual safety inspection should be conducted according to the following guidelines:

Gas, propane and oil furnaces

1. Discuss with occupants any problems they may be having with the appliance, including health problems they may experience during the heating season. Headaches, nausea, and other symptoms may indicate an unsafe appliance.
2. Visually inspect heat exchanger/fire box for cracks or breaches.
3. Inspect fuel lines and components for leaks. **When gas or propane leaks are detected**, turn the gas valve on the appliance to the **'Off-**position' and call for immediate service by a licensed contractor. Severe oil leaks should be addressed immediately.
4. Inspect flue for improper installation or defective components. On standard draft, gas fired units, inspect area under draft hood for evidence of rust or improper combustion (soot/rust near exhaust ports). On oil systems, check function of barometric damper.

5. Inspect for air/oil filter maintenance. Remove dirty air filters and advise participant on proper upkeep/replacement of filters. Check fan belt and tension (if applicable), and inspect blower, housing and motor for cleanliness.
6. Check for frayed/damaged wiring (carefully) and loose connections on all units.
7. Inspect space (oil or gas stove, etc.) or wall type (gas wall furnaces) combustion heaters for evidence of burner rollout, improper draft, etc.

Electric furnaces

1. Discuss with occupants any problems they may be having with the appliance.
2. Switch circuit breakers to **'Off-**position' or pull fuse block. Remove element/component cover plate(s) and inspect for loose connections and/or frayed, burned wiring.
3. Inspect for air filter maintenance. Remove dirty air filters and advise participant on proper upkeep and replacement of filters. Inspect blower, housing and motor for cleanliness.
4. Visually inspect duct system, and open all supply registers.

Troubleshooting

Weatherization program staff performs basic troubleshooting on heating systems. Based on the results of a visual inspection and the following diagnostic techniques, the Auditor/Inspector may call for a variety of measures to improve the safety and function of a dwellings heating system. A licensed, certified Heating Ventilation and Air Conditioning (HVAC) technician should conduct all major repairs, replacements, and adjustments to combustion heating systems.

Fan & motor assembly

Check fan/motor assembly before cycling furnace for dirty motor, fan blades, loose or damaged fan belt, or loose fan/motor assembly. When furnace cycles, check fan/motor operation for vibration, motor drag, and bearing noise. Indicate required repairs, oiling and/or cleaning of fan/motor assembly on JOS.

Diagnostic testing

When the heating system is inspected and found to be in a safe condition, the following diagnostic testing will be conducted:

1. **Thermostats -** Check function, location and condition of wall thermostats. Replace damaged or malfunctioning thermostats with a comparable unit (heat only, heat/cool, etc.). Thermostats located on exterior walls should be considered for relocation to an interior wall if feasible.
2. **Visually impaired -** If participant is visually impaired or has trouble reading the old thermostat, a sight-impaired thermostat may be installed.

3. **Heat anticipator -** If thermostat includes a heat anticipator, check anticipator setting and set to the appropriate control circuit amperage. To test the thermostat circuit amperage, attach an amperage tester around one of the thermostat wires after 2 minutes of furnace operation, document amperage reading of circuit on JOS and adjust anticipator at thermostat. (The average amperage range for a 24 volt control circuit is between .25 and 1.2 amps).

Gas, propane and oil furnaces

When a combustion heating system is located in a conditioned area or adjacent location (garage, cellar, etc.), the Auditor/Inspector will conduct safety testing on all standard and induced draft gas fired and oil furnaces. For units located in a conditioned area (inside the home), establish a **'worst case scenario'** prior to testing by closing all exterior doors and windows and turning on all exhaust systems (bathroom vent fans, range fans, dryer, etc.). In cases where the water heater and heating system are located in the same area or use a common flue, operate and test both appliances at the same time. Prior to testing, assemble and calibrate testing equipment according to the manufacturer's instructions.

Draft Testing

Draft testing will be conducted on all combustion heating units with an accessible flue. Reinstall fan compartment access doors before testing.

1. In single-wall flue pipes, drill a 5/16 inch hole in the flue between 12 and 24 inches above the furnace. For oil systems, drill hole between the furnace and the barometric damper.
2. Increase the thermostat setting to fire unit.

Do not drill test hole in flue in the following circumstances:

- If flue is double or multiple-wall, insulated pipe, or
- the appliance is a condensing unit w/PVC-type flue, or
- the unit is a sealed combustion, mobile home-type furnace, or
- in flue pipes on gas wall furnaces.

To draft test appliance, insert test probe into hole in flue pipe, keeping probe in center of flue and perpendicular to pipe. Check for spillage of flue gases around the draft hood (standard draft) or barometric damper (oil) indicated by warm, moist air flowing into the living space. Flue draft should be within the following range.

Outside Temperature	Acceptable Draft
Greater than 80ºF	-.005 to -.10
30ºF to 80ºF	-.01 to -.10
Less than 30ºF	-.02 to -.10

If flue draft is not acceptable, document proposed work on JOS (i.e., check/ repair flue, repair or replace fan-induced motor, service oil furnace, install combustion air vents, etc.

Oil smoke test

To protect efficiency and Carbon Monoxide test equipment, perform an oil smoke test according to manufacturer's instructions before additional testing. If smoke level is greater than (2), do not perform other tests until unit has been serviced. Repeat smoke test after service to verify smoke levels before proceeding with other testing procedures.

Carbon monoxide (CO) test

Perform CO test according to instructions for test equipment using the following guidelines:

1. Allow the unit to operate for 5 minutes. Test gas-fired, standard draft units or gas wall furnaces at exhaust ports under draft hood/diverter. Test induced draft, oil and space heating units (oil, gas stoves) through draft test hole in flue.
2. Take samples of the combustion gases. When the CO reading stabilizes, document the level on the Job Order Sheet (JOS).
3. While the furnace is operating, test the ambient air in the home at supply ducts and around the unit for evidence of CO.

Maximum CO levels

The maximum allowable levels of CO in furnace flue gases is 100 parts per million (PPM). CO levels in the ambient, inside air around appliance should not exceed 9 PPM. **If maximum allowable CO levels in exhaust gases are exceeded, the unit may not be operating properly and should be serviced by a qualified technician.**

<u>High levels of CO indicates incomplete combustion of fuel and may be caused by one or more of the following</u>:

1. Improper orifice/nozzle installed or unit may be over fired;
2. Insufficient draft or combustion air;
3. Cracked or clogged burner assembly;
4. Soot buildup in combustion chamber and flue;
5. Damaged heat exchanger/fire box.

Efficiency testing

When feasible, efficiency testing will be conducted on all combustion heating systems. Perform efficiency testing according to equipment manufacturer's instructions. Test samples are taken at the same location as Carbon Monoxide samples. Document efficiency test results on the JOS, including the following:

1. Net stack temperature (temperature of flue gases less ambient air temperature);
2. Oxygen percentage in flue gases;

To establish the seasonal efficiency of the appliance, complete the following steps and enter the resulting seasonal efficiency on the JOS.

1. Compare fuel type, net stack temperature and percentage of oxygen to establish steady state efficiency (Appendix J**)**.
2. Convert steady state to seasonal efficiency (Appendix J).

Tune-ups

Direct Service Providers are required to have each heating system (forced air, wall furnaces or heat pumps) over 5 years old cleaned, inspected and tuned by an HVAC technician. The HVAC technician will advise Direct Service Provider if heating system will not last more than 5 more years and therefore should be replaced. Any exceptions must be noted in participant file.

In addition to adjustments to combustion components, service orders should include cleaning of air handler, filter, and any additional measures, which may improve the delivered efficiency of the system. When testing is complete, reset thermostat to original setting and return house to pretest conditions (turn off exhaust fans, etc.). If defective components are identified in a gas, propane or oil furnace, indicate repair or replacement based on serviceability of unit and document findings on the JOS.

Electric furnaces

Diagnostic testing will be performed on electric furnaces to verify the unit is operating properly. Prior to testing, assemble and calibrate testing equipment according to the manufacturer's instructions.

Fan & motor assemblies

Check fan/motor assembly before cycling furnace for dirty motor, fan blades, or loose fan/motor assembly. When furnace cycles, check fan/motor operation for vibration, motor drag, and bearing noise. Indicate required repairs, oiling and/or cleaning of fan/motor assembly on JOS.

Element circuit amperage

Element circuit amperage testing is performed on a **'live-circuit'** to determine amperage draw; **exercise extreme caution while performing tests on electric appliances.**

Test the amperage draw of each element in an electric furnace. A standard 5kw element in an electric furnace 220 volt circuit will draw approximately 20 amps. For this example, the equation for calculating the appropriate amperage draw is:

5000 (Watts) ÷ 220 (Volts) = 22.73 (Amps)

Circuits drawing improper amperage can indicate an electrical or component problem. Use the following procedure for testing element circuit amperage in electric water heaters:

1. While element cover plates are off following visual inspection, turn circuit breakers to '**On**-position'.
2. Attach electrical tester around one wire connected to the top element and/or thermostat.
3. Increase thermostat setting until furnace cycles on and element circuit closes. Document reading for amperage at element. Check each element as sequencer closes circuit. Sequencers are time delay switches, which turn elements off and on in **'sequence'** with the cycling of the unit).
4. Decrease setting on thermostat and check to make sure sequencers open, turning off elements as furnace completes cycle.
5. Reset thermostat to original setting.

Continuity test

If you are unable to get an amperage reading on one or more elements through the element circuit test, the furnace probably has a defective component. Repairs should be made by a qualified HVAC technician.

To troubleshoot system, components may be checked using the following continuity tests:

1. Turn main circuit breaker to **'Off**-position' or pull fuse block.
2. If fuse protected, visually inspect fuse block at furnace and check fuses for continuity. Replace fuses or damaged fuse block. Test breakers at furnace for continuity, replace as needed.
3. If fuses/breakers show continuity, check continuity through element to determine if element is bad.
4. If element shows continuity, check continuity through limit switch. If limit is open, switch may be defective.
5. If tests indicate fuses/breakers, elements, and limit switches are OK, unit may have a bad sequencer, relay or other wiring component.

If defective components are identified in an electric furnace, indicate repair or replacement of unit based on serviceability and document findings on the JOS.

Additional documentation

In addition to diagnostic test results and temperature settings, the Auditor will document the following heating system information on the JOS:

1. Type and cost of fuel;

2. Location of heating system (conditioned/unconditioned);
3. Secondary heating source;
4. Type of air conditioning (or none).

Direct Service Providers are required to have each heating system (forced air, wall furnaces or heat pumps) over 5 years old cleaned, inspected and tuned by an HVAC technician. The HVAC technician will advise Direct Service Provider if heating system will not last more than 8 more years and therefore should be replaced. Any exceptions must be noted in participant file.

Wood heating systems

Wood heating systems may present safety hazards to occupants, and methods of installation may violate state, local or national codes. Safety hazards may be corrected when the unit is the primary heating source and corrective action is within the scope of the weatherization program. Wood stoves are prone to creosote deposits in stove pipes and chimney flues, requiring periodic maintenance. The Auditor/Inspector Auditor may recommend stovepipe and chimney cleaning if the unit has not been serviced within the current or previous heating season.

Replacement of a wood heating system will be installed in compliance with local, county, and state codes and according to standards set by the local Fire Marshall. Systems must be certified to meet the stricter of the Environmental Protection Agency emission standards or local building codes. Program funds may be only used to purchase wood heating systems certified and labeled by the National Fire Protection Association under 86m-1986 and 211-1984 (attachment XIII), the international conference of building officials, or other equivalent listing organizations. Electrical parts must be certified and labeled by Underwriters Laboratories.

Wood heating systems installed in mobile homes must be certified and labeled for mobile home use. The label should include reference to the Department of Housing and Urban Development's Mobile Home Standard and name the independent testing laboratory. Installation must be performed in accordance with manufacturer's recommendations and local building codes.

A wood stove will not be replaced if the occupant refuses to allow the installation to be done according to code. In those cases, the participant/property owner will be provided with written information describing the existing conditions, and a copy will be placed in the participant's file.

Coal heating systems

Coal systems are prone to soot buildup and mechanical breakdown, requiring periodic maintenance. The Auditor/Inspector Auditor may recommend cleaning and tuning the system if the unit has not been serviced within the current or previous heating season.

Installation specifications

Heating system repairs, replacements, modifications, and other heating system related measures will be installed according to the manufacturer's specifications and local building codes.

Repairs & replacements

Materials will be installed according to the manufacturer's specifications and local building codes. Repairs should be made to heating systems based on a 5 year or more serviceability, taking into account the overall condition of the unit. Units with less than 5 year serviceability should be considered for replacement.

Inspection specifications

On job completion, the Inspector will verify completion of all heating system measures. Any work not completed due to structural conditions and/or health and safety concerns will be documented and verified by Auditor/Inspector on the JOS.

Post diagnostic testing of appliances will be conducted in the following cases.

Post testing

If heating system has been repaired or replaced, post testing of the unit for function and safety will be conducted on all units according to audit procedures. Required tests include:

- Gas/Propane/Oil: Draft, CO, and efficiency testing.
- Electric: Element Circuit Amperage.

If CFM/50 has been reduced in homes with combustion appliances located in conditioned areas, the following test will be conducted on all gas fired appliances.

- Gas/Propane/Oil: Draft test.

The Auditor/Inspector will verify the proper installation of all heating system measures and confirm that all proposed measures as documented on the JOS have been completed according to installation specifications. Inspection information will be documented on the JOS, including post diagnostic test results and any further work requirements.

Space Heating

The following is guidance from Department of Energy (WPN 08-4) regarding space heaters.

Vented Space Heaters: Vented gas- and liquid-fueled space heaters should be treated the same as furnaces in terms of repair and replacement, as well as combustion appliance safety testing. This policy applies to vented natural gas-fired space heaters, vented propane-fired space heaters, and oil-fired space heaters (which are always vented).

Unvented Space Heaters: Separate guidance applies to electric space heaters and unvented gas- and liquid-fueled space heaters.

Electric Space Heaters – DOE will not permit any DOE-funded weatherization work other than incidental repairs on electric space heaters. DOE will not preclude the use of other funding sources for the replacement or major repair of electric space heaters, but the Department does not encourage it because of:

- The high cost of electricity as compared to fossil fuels;
- Lower output ratings (size);

- Risk of fire hazards; and,
- Inadequate electrical systems in older homes frequently cannot safely carry the power required to operate an electric heater.

Work on such systems may make local agencies liable for inadequate electric wiring and damages that may result.

Unvented Gas- and Liquid-Fueled Space Heaters – DOE will not permit any DOE-funded weatherization work where the completed dwelling unit is heated with an unvented gas- and/or liquid-fueled space heater as the primary heat source. This policy applies to unvented natural gas-fired space heaters, unvented propane-fired space heaters, and unvented kerosene space heaters. This policy is consistent with the IRC and the IFGC.

DOE strongly encourages removal of all unvented gas- and liquid-fueled space heaters and replacement with vented, code-compliant heating systems as a prerequisite to weatherization. However, DOE will allow unvented gas- or liquid-fueled space heaters to remain as secondary heat sources in single-family houses provided they comply with the IRC and the IFGC. DOE is allowing this flexibility primarily to provide low-income clients an emergency back-up source of heat in the event of electrical power outages. Therefore, preference should be given to code-compliant units that do not require electricity.

Specifically, any unvented gas- and liquid-fueled space heaters that remain in a completed single-family house after weatherization:

- Shall not have an input rating in excess of 40,000 Btu/hour;
- Shall not be located in, or obtain combustion air from sleeping rooms, bathrooms, toilet rooms, or storage closets, unless:
  - Where approved by the authority having jurisdiction, one listed wall-mounted space heater in a bathroom:
    - Has an input rating that does not exceed 6,000 Btu/hour;
    - Is equipped with an oxygen-depletion sensing safety shut-off system; and
    - The bathroom meets required volume criteria to provide adequate combustion air;
  - Where approved by the authority having jurisdiction, one listed wall-mounted space heater in a bedroom:
    - Has an input rating that does not exceed 10,000 Btu/hour;
    - Is equipped with an oxygen-depletion sensing safety shut-off system; and
    - The bedroom meets required volume criteria to provide adequate combustion air.
- Shall require the enforcement of minimum ventilation guidelines as determined by the greater of:
  - 15 cubic feet per minute (CFM) per person,
  - 15 CFM per bedroom plus one [(# of bedrooms + 1) x 15 CFM], or
  - .35 air changes per hour.

  The above minimum ventilation guidelines are natural ventilation rates, not with the house depressurized to -50 Pascal with a blower door.

  Alternately, the minimum ventilation guidelines in the American Society of Heating,

Refrigeration, and Air-Conditioning Engineers (ASHRAE) Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings, may be used if the State desires.

DOE funds may only be used to replace the primary heating source. DOE funds may not be used to replace unvented space heaters to be left in the weatherized dwelling unit as secondary heating sources. For example, a home has several older gas- or liquid-fueled, unvented space heaters that do not comply with the International Residential Code because they do not have oxygen-depletion sensing safety shut-off systems. The Weatherization Program can replace the primary unvented space heater with a vented unit, but cannot expend DOE funds to replace one of the existing secondary space heaters with a code-compliant unvented unit with an oxygen-depletion sensing safety shut-off system. DOE will not preclude the use of other funding sources to replace secondary space heaters with code-compliant units.

The Manufactured Home Construction and Safety Standards require all fuel-burning, heat-producing appliances in mobile homes, except ranges and ovens, to be vented to outside. Further, all fuel-burning appliances in mobile homes, except ranges, ovens, illuminating appliances, clothes dryers, solid fuel-burning fireplaces and solid fuel-burning fireplace stoves, must be installed to provide for the complete separation of the combustion system from the interior atmosphere of the manufactured home (i.e., to draw their combustion air from outside).

Cost Effectiveness: Current regulations governing weatherization activities require that measures installed in a dwelling unit be selected on the basis of cost effectiveness, with the most cost effective installed first. Unvented space heaters have very high efficiency ratings because they discharge their exhaust gases directly into the space being heated rather than outside, allowing the energy embodied in the hot exhaust gases to be released into the heated space. Vented space heaters exhaust combustion products and considerable amounts of energy out of the residence, and, therefore, are far less energy efficient.

The replacement of an unvented space heater with a vented one may not be cost-justified through energy savings. However, DOE strongly encourages States to combine other weatherization measures and health and safety considerations with vented space heaters as replacements for unvented space heaters. In such instances, the heat energy demanded by the structure can be lowered by energy-saving, cost-effective weatherization measures so that total energy costs are less or the same, while the indoor air quality is greatly improved through the use of a vented space heater paid for with health and safety funds.

Smoke and Carbon Monoxide Detectors: Any space heater replacement or repair procedure should include inspection to ensure that working smoke and carbon monoxide detectors are installed on the same floor as the space heater. In instances where smoke and carbon monoxide detectors are not present or are not operating properly, new detectors may be purchased and installed with DOE funds. The purchase and installation cost of the smoke and carbon monoxide detectors may be charged to the health and safety category or to program operations at the State's

discretion.

Client Education: Client education, including information on the proper operation of the heating equipment and installed smoke or carbon monoxide detectors, should be provided. Of critical importance is strong client education regarding the dangers of carbon monoxide and excessive moisture levels, particularly if any unvented space heaters are left in the dwelling as a secondary heat source, or emergency back-up.

Other Health and Safety Consideration: Electrical wiring and chimneys should be checked to ensure they are in good condition and that no obvious building code violations are evident. Masonry chimneys used by vented space heaters should be properly lined in compliance with the IFGC. Safety inspection related to the space heater should include, but not be limited to, a check for adequate floor protection and code-compliant clearances to walls and other combustible materials. Even though many vented space heaters are manufactured with spill switches, it is still a requirement that a worst-case depressurization draft test be performed on all vented units.

Compliance with Local Code, Permitting, and Inspection Requirements: Installation of space heaters requires knowledge of appropriate industry standards and adherence to all aspects of the applicable building code(s) in the municipality where installation is taking place. Building permits should be secured, where required, (this is a program operations cost) for all space heater work and final inspection by competent professionals should take place before any heater is put into operation. States are reminded that even licensed heating contractors may not be aware of the stringent requirements of the Weatherization Program, so their work should be reviewed by Program staff.

Cooling Systems

Replacing an existing air conditioner is generally cost effective in climates with more than 2,000 cooling degree days, and sometimes cost effective in climates with 1,200 to 2,000 cooling degree days. Energy Efficiency Ratios, which measure cooling efficiency, vary according to the size of the unit. When EA4 shows that replacing the existing unit is cost effective, replacements must be Energy Star qualified.

Energy audit procedure

The key to saving money with energy-efficient air conditioners is selecting a correctly sized unit.

To determine how much capacity your client needs, use the following chart:

Area To Be Cooled (sq. ft.)	Capacity (BTU/HR)
100 to 150	5,000
150 to 250	6,000
250 to 300	7,000
300 to 350	8,000

350 to 400	9,000
400 to 450	10,000
450 to 550	12,000
500 to 700	14,000
700 to 1000	18,000

For more back-of-the-envelope calculation, assume that an air conditioner generally needs 20 BTU for each square foot of living space.

Now make the following adjustments:

- If the room is heavily shaded, reduce capacity by 10 percent
- If the room is very sunny, increase capacity by 10 percent.
- If more than two people regularly occupy the room, add 600 Btu/Hr for each additional person.
- If the units is for a kitchen, increase capacity by 4,000 Btu/Hr

Another tool that can help to determine if cooling system (central or room air conditioning) is cost effective can be found at: http://www.energystar.gov/index.cfm?c=roomac.pr_room_ac and http://www.energystar.gov/index.cfm?c=cac.pr_central_ac

Repairs and replacements

Any repairs and replacements of cooling systems must have an SIR of 1.0 or greater to be provided with DOE funding. Any exceptions must be noted in the file as provided using Health and Safety funds.

Inspection specifications

The Auditor/Inspector will verify the installation of cooling system equipment to industry and manufacturer's standards and confirm that all proposed measures as documented on the JOS have been completed according to installation specifications. Inspection information will be documented on the JOS, including any further work requirements.

Refrigerator Replacement

The refrigerator to be replaced must have been manufactured before 1993 and must be the primary refrigerator used by the household. In cases where more than one refrigerator is being used, the Direct Service Provider should encourage the client to dispose of the secondary refrigerator(s). The disposal of secondary refrigerator(s) will be considered an eligible activity; however, the client must provide the Direct Service Provider with written permission for this disposal. If the client does not wish to dispose of secondary refrigerator(s), the Direct Service Provider should provide client education regarding the energy cost involved with the operation of this additional refrigerator.

1. The replacement refrigerator must be an Energy Star-rated[7] energy-efficient refrigerator with an estimated annual consumption of 600 kWh/yr. or less. It must be a similar style and capacity as the one being replaced, where practical. Refrigerators with advanced options such as an ice maker will not be considered allowable replacements.
2. Direct Service Providers must determine that a replacement will be cost effective before considering a refrigerator replacement as an eligible repair option. To accurately determine the cost effectiveness of replacing a refrigerator, first determine the annual energy consumption of the existing refrigerator and compare this to the estimated consumption of the replacement.

Energy Audit Procedure

Use a cumulative watt hour meter to determine the present usage of the refrigerator. Plug the meter into a wall outlet and plug the refrigerator into the meter. You must document the date, exact time, and the initial reading, when removing the meter you must also record the date, time and reading. The difference in the two readings will be the number of watt hours or kilowatt hours used for the time the refrigerator was metered. If Watt hours are shown they must be converted to kilowatt hours by dividing the number of watt hours by 1000.

The refrigerator must be metered for a minimum of two hours and, wherever possible longer. This should be accomplished during the course of performing the energy audit on the dwelling. The usage is then noted on the JOS and entered into the EA4 to determine if the replacement will meet the SIR requirement of 1.0 or greater.

Some older refrigerators had to be manually defrosted; however, most that are currently in use have an automatic defrost cycle. If the automatic defrost cycle is activated during testing, you will not get a true reading of usage. In cases where you have a unit with an automatic defrost cycle, try to return to the refrigerator every 15-20 minutes to determine if it has gone into the defrost mode. A significant increase in watts over a short period of time is a good indicator of defrost mode. If the refrigerator has gone into the defrost mode, the reading cannot be used and the refrigerator must be retested.

Another tool that can be utilized to determine if a refrigerator replacement will meet the SIR of 1.0 or greater can be found online at:

http://www.waptac.org/sp.asp?id=70#refrigdata.htm

The mean usage from the link above can be entered into the EA4 to determine if the replacement will meet the SIR requirement of 1.0 or greater.

Refrigerators not replaced will receive the following:

a. Thorough cleaning of evaporator coils.
b. Provide adequate ventilation.
c. Test and readjust interior temperature
d. Client education on proper refrigerator usage.

Installation Specifications

All refrigerator replacements will be installed according to manufacturer's specifications. All refrigerators that are replaced must be removed from the clients' premises upon delivery of the replacement and properly disposed of in accordance with The Clean Air Act, USC Title 42, Section 7671g. This Act makes it unlawful for any person to dispose of refrigerants in a manner in which they will be allowed to enter the environment.
All dwellings receiving a refrigerator replacement will sign a Refrigerator Replacement Form (Appendix W) to verify ownership of the refrigerator and that the existing refrigerator will be removed from the premises. This form will remain in the participant file.

Inspection Procedure

The Auditor/Inspector will verify the installation of replacement refrigerator and removal of inefficient refrigerator and confirm that all proposed measures as documented on the JOS have been completed according to installation specifications. Inspection information will be documented on the JOS, including any further work requirements.

7.5 Health & Safety

The health and safety of participants, Direct Service Providers, employees, and subcontractors is a primary concern of the weatherization assistance program. The work performed by Direct Service Providers involves a complex interaction between the weatherization personnel and aspects of each home, which may include potential hazards associated with the weatherization process.

The standards set forth in these procedures provide only general guidelines for health and safety concerns. Detailed specifications regarding the health and safety of workers in the construction industry can be found in **Construction Industry OSHA Safety and Health Standards (29 CFR 1926/1910**) available from the U.S. Department of Labor. These standards are applicable to all workers providing services using funding under the Idaho Weatherization Assistance Program. Chapter XVII, subpart c., item 1926.20 of the OSHA standards states:

" . . . no contractor or subcontractor for any part of the contract work shall require any laborer or mechanic employed in the performance of the contract to work in surroundings or working conditions which are unsanitary, hazardous, or dangerous to his or her health and safety. . ."

Employee Health & Safety

Training & monitoring

The Direct Service Provider Program Manager is responsible for maintaining a Weatherization Health and Safety Program. Specific responsibilities may be delegated to adequately trained and competent personnel. All activities will be conducted according to standards established by the Occupational Safety and Health Administration (OSHA).

Employee training

New employees will not begin working in the field until training has been provided, including but not limited to the following:

1. Training on conventional health and safety issues, including heavy lifting, safe ladder usage, electrical safety, power tool safety, and other work practices and conditions encountered in the weatherization program.
2. Instruction on proper usage/maintenance of protective equipment, including eye/ear protection, respirator, gloves, Tyvek suits or coveralls, etc.
3. Information is provided on hazardous chemicals and substances in the work environment and the proper usage of these materials, the content and location of Material Safety Data Sheets (MSDS), and employee has an understanding of how they may obtain and use appropriate hazard information.

Accident Prevention

The prevention of occupationally induced injuries will be given precedence over production activities. To the greatest degree possible, the Direct Service Provider will ensure all equipment and facilities are in compliance with OSHA standards. Participants will be notified of potential hazards pertaining to production activities, and employees will undertake activities in a safe manner, protecting themselves and members of participant households while work is in progress.

The Direct Service Provider will initiate and maintain programs in compliance with OSHA standards. Each home will be individually assessed prior to weatherization to identify the existence of potential hazards to workers or participants. The Weatherization Assistance Program provides a waiver for the non-performance of weatherization activities if those activities will expose workers to conditions regarded as unsafe or unhealthy as determined by OSHA Construction Industry Standards or the State of Idaho denial/delay of services policy.

Weatherization services will be provided in a manner, which minimizes the risk to workers and participants. Workers are responsible for performing their duties in a safe manner. Individuals who demonstrate an inability to work in a safe manner will not be retained by the program. To limit the possibility of accidents, the Direct Service Provider will implement the following safety programs:

Safety Meetings

Safety meetings will be conducted monthly. The content of the meeting should focus on issues of current importance. During the meeting, employees should be encouraged to comment and ask any questions they may have about the content. The goal of these meetings will be employee understanding and retention of the information addressed. When possible, meeting topics should be limited to a single issue, and written/visual information should be used to reinforce subject matter (handouts, posters, etc.). Minutes of each meeting (including topics discussed and attendee signatures) will be entered on the Monthly Safety Meeting form (Appendix O) and kept on file by the Direct Service Provider.

On-Site Inspections

The Direct Service Provider will conduct a minimum of quarterly on-site inspections of each crew to ensure health and safety policies are being followed. Findings related to the inspections will be documented on the Job Site Health and Safety Checklist (Appendix P) and maintained by the Direct Service Provider. Issues related to job site inspections should be resolved as soon as possible.

On-site inspections will include, but not be limited to, the following:

1. Ascertain employee understanding of weatherization activities, and inspect work area to ensure activities are being conducted in a safe manner.
2. Confirm all crew members are supplied with safety equipment. Inspect condition of personal safety equipment, and confirm equipment is in use as warranted by the activities being conducted.
3. Inspect hand and power tools. Any equipment found to be defective will be removed from service, tagged and repaired or replaced as soon as possible.

Each crew vehicle should be supplied with the following health and safety items, including, but not limited to, the following:

1. Complete first aid kit designed to provide basic first aid for injuries, which may result from weatherization activities.
2. Adequately charged, hand operated fire extinguisher designed for all three types of fires (electrical, wood and liquid) with current service date.
3. Binder containing a list of hazardous chemicals (common and chemical name), usage location, hazard information, and MSDS sheets (unless master files are accessible by all crewmembers on a daily basis).

Personal Protective Equipment

Employees will be notified of hazards in the work area, and provided adequate protective equipment. The use of personal protective equipment will be strictly enforced. Each crew member will wear a respirator, protective eye wear, hearing protection, and protective clothing when necessary. Respiratory protection is required when working in high dust environments. Hearing protection is required for individuals working around high decibel equipment or in high dust environments. Employees will use eye protection as required when working with hand/power tools or in high dust environments. Any problems or malfunctions with personal protective equipment must be reported immediately to the supervisor.

Respiratory Protection

Each employee will be issued an individual respirator and instructions on proper fit, usage, cleaning and maintenance of the respiratory equipment. Respirators must be NIOSH/MSHA approved, and worn in areas with high concentrations of particulate or chemical contaminants. Respiratory protection should be worn in, but not be limited to, the following areas:

- While working in attic and crawlspace areas.
- While installing insulation or if existing insulation will be disturbed.
- When applying chemical sealants and adhesives in confined places.

When wearing a respirator, the employee must leave the work area immediately and remove the respirator in the event of:

- Dizziness or other physical distress.
- Difficult or labored breathing.

Hand & Power Tools

All hand/power tools and similar equipment will be maintained in a safe condition. This equipment will be inspected daily, and any equipment found defective will be tagged and removed from service until it has been repaired or replaced. Protective guards are to be in place and functioning properly while a power tool is in use.

All electrical equipment, tools and extension cords will be properly grounded. A ground fault interrupter (GFCI) will protect all electrical power for 120 volt or greater equipment. Any extension cords found defective (worn insulation, frayed wires, etc.) are to be removed from service and replaced.

General Fall Protection

Portable ladders will be placed on a substantial base at a 4/1 pitch. Extension ladders are to be extended a minimum of 36 inches above the landing, or provided with grab rails and secured against movement while in use. Portable metal ladders will not be used where they may contact electrical conductors.

The use of ladders with broken or missing rungs or steps, broken or split side rails, or with other faulty or defective construction is prohibited. When ladders with irreparable defects are discovered, they are to be immediately withdrawn from service and discarded.

Precautions are required when weatherization activities are conducted on roof areas. When an individual is either above 16 feet, or adequate stability can not be maintained safety gear is required (harness, safety straps, etc.).

Housekeeping Activities

All scrap lumber, waste material, and debris will be removed from the immediate area as work progresses. An area outside the home should be designated for storing such material, and all waste materials will be removed from the premises at the end of each work day or when the job is completed.

Equipment will be removed from the immediate work area and properly stored when no longer required or when each phase of the weatherization process is completed. Individuals should be equipped with a tool belt, making hand tools easily accessible when required.

Asbestos

In addition to particulate and chemical hazards posed while working with weatherization materials, employees should be informed of possible exposure to areas contaminated with asbestos. In addition to informing residents of these hazards, employees should be familiar with the dangers of exposure to asbestos in the workplace. Work should not be conducted in areas containing "friable" asbestos. The definition of friable asbestos is as follows.

- Any material containing greater than one percent (1%) asbestos by weight or volume that hand pressure can crumble, pulverize or reduce to powder when dry.
- Any asbestos containing material that can reasonably be expected, as a result of retrofitting practices, to become pulverized through breaking, chipping, crumbling, crushing, or other means of rendering fibers available to the ambient air.

Asbestos containing materials (ACM) which are non-friable (undamaged) **should not be disturbed.** The location and condition of ACM should be noted on the JOS, and crews should wear appropriate protection and exercise caution while working around non-friable asbestos.

Lead

Lead is a hazardous substance found in materials used in homes prior to 1978. Direct Service Provider personnel who may encounter lead based paint hazards in the application of weatherization materials will be trained on the proper use of protective equipment, lead safe work practices, and be aware of the dangers of lead contamination when working in areas where lead paint may be disturbed.

Weatherization activities will be carried out according to *Lead Safe Weatherization* (LSW) work practices when those activities are conducted on homes within the following guidelines (Appendix U)

1. The dwelling was constructed pre-1978, <u>and</u>
2. The dwelling has not been determined to be lead-based paint free, <u>and</u>
3. Either the amount of disturbed lead-based painted surface exceeds two (2) square feet per room of interior surface, twenty (20) square feet of exterior surface, or 10% of a small component type, (e.g., window); or, the amount of lead-based paint dust that will be generated by the weatherization work exceeds the OSHA defined airborne levels for lead.

Weatherization activities occurring within these guidelines may also require agencies to follow regulations as required by the Environmental Protection Agency (EPA), (Appendix V)

Participant Health & Safety

Energy audit procedure

Each home will be individually assessed prior to weatherization to identify the existence of potential hazards to workers or participants. The Auditor/Inspector Auditor will inspect the home and identify unsafe conditions. Existing unsafe conditions will be documented before any work begins on the home, and those conditions that can be corrected through the program will be addressed. These conditions may include, but are not limited to, improperly installed or unsafe operating combustion appliances and electric heating systems, unsafe wiring, moisture and plumbing problems, minor structural deficiencies, and indoor air quality concerns. Where possible, the Auditor will propose measures to eliminate or reduce the hazards. All health and safety measures identified during the energy audit and proposed work will be documented on the JOS and entered into the EA4.

Weatherization activities that may aggravate existing unsafe conditions beyond the scope of the weatherization program must not be conducted. In cases where deficiencies or hazards are beyond the scope of weatherization, the participant will be informed of the condition and the file will be documented.

The participant should be referred to additional support services and a delay or denial of services may be required until repairs and or upgrades have been made.

Combustion appliances

Safety testing of combustion appliances located in living spaces will be conducted to ensure their safe operation. When possible, furnaces, water heaters, and gas ranges will be tested for Carbon Monoxide; flue draft testing will be conducted on vented appliances. Use of unvented combustion space heaters by participants will be discouraged. Infiltration measures may not be installed in homes with unvented space heaters. Gas ranges will be tested for Carbon Monoxide (CO). To test, turn on top burners and oven. Check for CO at oven exhaust port located at rear of stove top after 5 minutes of operation, and check top burners after 15 seconds of operation with probe located approximately 12 inches above cook top. Maximum allowable CO levels for burners and oven is 200 parts per million (PPM). If CO is above acceptable levels, advise participant to contact the gas company to have unit checked/adjusted.

Measures related to combustion appliances and designed to improve the health and safety of the dwelling may be addressed. The participant will be notified when health and safety costs related to combustion appliances exceed allowable limits, and suggestions will be made for obtaining funding from other sources (homeowner, landlord, other Direct Service Provider, etc.).

Sensors

The program may install or replace household sensors designed to protect the occupants of homes receiving weatherization assistance. Smoke and Carbon Monoxide (CO) detectors should be installed in dwelling areas determined to represent a hazard to participants. Direct Service Provider personnel will recommend installation or replacement of smoke and CO detectors based on an evaluation of dwelling conditions.

Wiring

The weatherization program will only address minor wiring problems associated with weatherization activities. This may include repairs to furnace and space heating systems, water heaters, wiring connections, exhaust system wiring, fuse/circuit breaker replacement, and other minor, safety related repairs. The participant/property owner will be notified of repairs beyond the scope of the weatherization program (i.e., replacement of unsafe electrical panel, extensive replacement of unsafe wiring, etc.), and a delay/denial of services may be required until repairs/upgrades have been made.

Moisture & Mold

Moisture problems may be addressed by either eliminating the source (leaking pipes, unvented dryers, bare ground in crawlspaces), or by installing measures designed to reduce the impact moisture has on a home (installing foundation /attic vents, vapor barriers, ground covers, splash blocks on downspouts). Mechanical ventilation may be required in homes with moisture problems, including bath vent fans and kitchen range fans. Repair or replacement of existing exhaust fans (or installation of new exhaust systems) may be required to control moisture in homes below minimum air tightness standards. The following table contains the required ventilation air levels (ASRAE 62.2):

:

Floor Area – square feet	**0-1 bedrooms**	**2-3 bedrooms**	**4-5 bedrooms**	**6-7 bedrooms**	**7 + bedrooms**
Under 1500	30	45	60	75	90
1501-3000	45	60	75	90	105
3001-4500	60	75	90	105	120
4501-6000	75	90	105	120	135
6001-7500	90	105	120	135	150
7500 +	105	120	135	150	165

Each mechanical ventilation system (supply, exhaust, or both) shall be equipped with a readily accessible switch or other means for shutoff (or volume reduction and shutoff) when ventilation is not required. Outdoor air intakes and exhausts shall be provided automatic or gravity dampers that close when the ventilation system is not operating. (2006 IECC code).

Plumbing

Minor plumbing problems may be repaired (leaking pipes, elbows, unions, etc.), but repairs beyond the scope of the weatherization program (i.e., replacement of plumbing, raw sewage or standing water in crawlspace areas, etc.) will be brought to the attention of the participant/property owner, and measures will not be installed in those areas unless repairs/upgrades have been made prior to job completion.

Structural Repairs

Minor structural repairs may be provided to shield weatherization materials from indoor and outdoor exposure. Measures may include replacement of damaged or missing sections of the building envelope including dry wall, plywood, sheathing, siding and repairs to damaged or leaking roofs. Roof repairs are limited to $500 or 25% of the total roof surface area. Repairs beyond the scope of the weatherization program (extensive roof repairs, major portions of interior and/or exterior surface areas exposed, etc.) will be brought to the attention of the participant/property owner, and measures will not be installed in those areas unless repairs/upgrades have been made prior to job completion.

Indoor Air Quality (IAQ)

Asbestos

Asbestos containing materials (ACM) identified during the energy audit will be brought to the attention of the participants. The condition of the ACM will be assessed, and residents will be advised not to disturb the material. Educational materials may be provided, including the EPA pamphlet **"Asbestos in the Home, a Homeowner's Guide."**

Lead

When applicable, weatherization activities within participants' homes will be carried out according to *Lead Safe Weatherization* (LSW) work practices when those activities are conducted on homes within the following guidelines (Appendix U**).**

1. The dwelling was constructed pre-1978, <u>and</u>
2. The dwelling has not been determined to be lead-based paint free, <u>and</u>
3. Either the amount of disturbed lead-based painted surface exceeds two (2) square feet per room of interior surface, twenty (20) square feet of exterior surface, or 10% of a small component type, (e.g., window); or, the amount of lead-based paint dust that will be generated by the weatherization work exceeds the OSHA defined airborne levels for lead.

Additionally, certain weatherization activities may require agencies to provide lead hazard notification to households under the Lead Renovation, Repair, and Painting Program rule (LRRPP) as required by the Environmental Protection Agency (EPA) (Appendix V)

Radon

Radon is an odorless, colorless gas, which occurs naturally in the earth's crust. Radon may migrate into homes, and long term exposure to elevated levels may cause lung cancer. This migration may be reduced by the following measures:

1. Installation of 6 mil black visqueen ground cover,
2. Sealing duct systems (especially return systems) in crawlspace/basement areas,

3. Sealing floor penetrations,
4. Ventilating crawlspace areas.

Formaldehyde

Formaldehyde is a strong smelling, colorless gas released by components of various building materials. Health hazards from the gas include lung ailments, impaired brain and vision function, and can be fatal in high doses. Extensive air sealing is not recommended on homes with significant levels of formaldehyde.

Particulates & Volatile Organic Chemicals (VOCs)

Particulate contamination occurring from a variety of sources can negatively impact indoor air quality. Tobacco smoke, pets, exposed insulation materials, and volatile organic chemicals (VOC) stored in the home contribute to unhealthy indoor environments. Participants should be educated regarding the proper storage of household chemicals and the importance of proper ventilation. Recommendations for air sealing measures should take into account the home's existing indoor air quality, avoiding the aggravation of unhealthy conditions.

Installation specifications

Materials will be installed according to the manufacturer's specifications and local building codes.

Inspection procedure

The Auditor/Inspector will verify the proper installation of health and safety measures and confirms that all proposed work as documented on the JOS has been completed according to installation specifications. Inspection information will be documented on the JOS, including further work requirements. When conditions related to health and safety are beyond the scope of the weatherization program, the participant will be notified of the unsafe condition, and the nature of the condition will be documented on the Job Completion Form.

Walk-Away Policy

Direct Service Providers performing weatherization activities which may aggravate existing unsafe conditions involving lead paint, asbestos, radon, VOC's, or other hazardous substances should determine whether to proceed with work based on the following factors:

- Does the Direct Service Provider have the necessary training, equipment and insurance to allow work to proceed; and
- does the condition of the dwelling and/or the hazardous substances to be encountered during the weatherization process pose a threat to the health and safety of the participants or to the workers themselves; and
- to what extent will the specific energy efficiency measures to be installed disturb or aggravate conditions within the home; and
- will the cost of doing work safely represent a large portion of the total cost and exceed the 10% of total job cost allowed by the state for health and safety?

Based on consideration of these factors, Direct Service Providers should determine whether to:

- Proceed with all the weatherization work following safe work practices, or
- Complete some of the weatherization tasks and defer others for a period of 90 days, or
- Defer all the weatherization work until unsafe conditions are corrected.

Limited weatherization activities may be conducted which do not affect or aggravate conditions related to hazardous substances, but which provide energy efficiency benefits to participant households. If additional weatherization measures are deferred, Direct Service Providers will allow a deferment period of ninety (90) days following job completion for participants to correct deficiencies and/or hazards thereby allowing for the installation of those additional measures.

In cases where deficiencies or hazards are beyond the scope of weatherization (including dangers posed by lead based paint and/or laden dust residues, asbestos, radon, VOC's, or other hazardous substances), the participant will be informed of the condition and the file will be documented. The participant should be referred to additional support services, and a delay/denial of services may be required until repairs, upgrades or abatement activities have been completed.

APPENDIX A—STANDARDS FOR WEATHERIZATION MATERIALS

If the standards listed in this appendix conflict with those required by current local codes, the local code shall have precedence and a copy of the applicable section will be retained with procurement records.

The following Government standards are produced by the Consumer Product Safety Commission and are published in title 16, Code of Federal Regulations:

Thermal Insulating Materials for Building Elements Including Walls, Floors, Ceilings, Attics, and Roofs Insulation—organic fiber—conformance to Interim Safety Standard in 16 CFR part 1209;

Fire Safety Requirements for Thermal Insulating Materials According to Insulation Use—Attic Floor—insulation materials intended for exposed use in attic floors shall be capable of meeting the same flammability requirements given for cellulose insulation in 16 CFR part 1209;

Enclosed spaces—insulation materials intended for use within enclosed stud or joist spaces shall be capable of meeting smoldering combustion requirements in 16 CFR part 1209.

The following standards which are not otherwise set forth in part 440 are incorporated by reference and made part of part 440. The following standards have been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on January 3, 2002 and a notice of any change in these materials will be published in the FEDERAL REGISTER. The standards incorporated by reference are available for inspection at the Office of the Federal Register Information Center, 800 North Capitol Street, Suite 700, Washington, DC 20001.

The standards incorporated by reference in part 440 can be obtained from the following sources:

Air Conditioning and Refrigeration Institute, 4301 N. Fairfax Drive, Suite 425, Arlington, VA 22203; (703) 524-8800.

American Architectural Manufacturers Association, 1827 Walden Office Square, Suite 104, Schaumburg, Illinois 60173-4268; (847) 303-5664.

American Gas Association, 400 N. Capitol Street, NW, Washington, DC 20001; (202) 824-7000.

American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036; (212) 642-4900.

American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990; (212) 591-7722.

American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959; (610) 832-9585.

Association of Home Appliance Manufacturers, 1111 19th Street, NW, Suite 402, Washington DC, 20036; (202) 872-5955.

Federal Specifications, General Services Administration, General Services Administration, Federal Supply Service, Office of the CIO and Marketing Division, Room 800, 1941 Jefferson Davis Hwy., Arlington, VA 22202; (703) 305-6288.

Gas Appliance Manufacturers Association, 2107 Wilson Boulevard, Suite 600, Arlington, Virginia 22201; (703) 525-7060.

National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209; (703) 841-3200.

National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101; (617) 770-3000.

Sheet Metal and Air Conditioning Contractors Association, 4201 Lafayette Center Drive, Chantilly, Virginia 20151-1209; (703) 803-2980.

Solar Rating and Certification Corporation, c/o FSEC, 1679 Clearlake Road, Cocoa, FL 32922-5703; (321) 638-1537.

Steel Door Institute, 30200 Detroit Road, Cleveland, OH 44145-1967; (440) 899-0010.

Steel Window Institute, 1300 Sumner Avenue, Cleveland, OH 44115-2851; (216) 241-7333.

Tubular Exchanger Manufacturers Association, 25 North Broadway, Tarrytown, NY 10591; (914) 322-0040.

Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096; (847) 272-8800.

Window & Door Manufacturers Association, 1400 East Touhy Avenue, Suite 470, Des Plaines, IL 60018; (800) 223-2301.

More information regarding the standards in this reference can be obtained from the following sources:

Environmental Protection Agency, 401 M Street, NW, Washington, DC 20006; (202) 554-1080.

National Institute of Standards and Technology, U.S. Department of Commerce, Gaithersburg, MD 20899; (301) 975-2000.

Weatherization Assistance Program, Office of Building Technology Assistance, Energy Efficiency and Renewable Energy, 1000 Independence Avenue, SW, EE-42, Washington, DC 20585-0121; (202) 586-4074.

THERMAL INSULATING MATERIALS FOR BUILDING ELEMENTS INCLUDING WALLS, FLOORS, CEILINGS, ATTICS, AND ROOFS

[Standards for conformance]

Insulation--mineral fiber:	
Blanket insulation	ASTM[1] C665-98.
Roof insulation board	ASTM C726-00a.
Loose-fill insulation	ASTM C764-99.
Insulation--mineral cellular:	
Vermiculite loose-fill insulation	ASTM C516-80 (1996)e1.
Perlite loose-fill insulation .	ASTM C549-81 (1995)e1.
Cellular glass insulation block	ASTM C552-00.
Perlite insulation board . . .	ASTM C728-97.
Insulation–organic fiber:	
Cellulosic fiber insulating board	ASTM C208-95.
Cellulose loose-fill insulation	ASTM C739-00.
Cellulose wet-spray insulation	ASTM C1149-97.
Insulation–organic cellular:	
Preformed block-type polystyrene insulation	ASTM C578-95.
Rigid preformed polyurethane insulation board	ASTM C591-00.
Polyurethane or polyisocyanurate insulation board face with aluminum foil on both sides	FS[2] HH-I-1972/1 (1981).
Polyurethane or polyisocyanurate insulation board face with felt on both sides	FS HH-I-1972/2 (1981) and Amendment 1, October 3, 1985).
Insulation–composite boards:	
Mineral fiber insulation board	ASTM C726-00a.
Perlite board	ASTM C728-97.
Gypsum board and polyurethane or poliso-cyanurate composite board	FS HH-I-1972/4 (1981).

[1] ASTM indicates American Society for Testing and Materials.

[2] FS indicates Federal Specifications.

THERMAL INSULATING MATERIALS FOR BUILDING ELEMENTS INCLUDING WALLS, FLOORS, CEILINGS, ATTICS, AND ROOFS–Continued

[Standards for conformance]

Materials used as a patch to reduce infiltration through the building envelope	Commercially available.

THERMAL INSULATING MATERIALS FOR PIPES, DUCTS, AND EQUIPMENT SUCH AS BOILERS AND FURNACES

[Standards for conformance]

Insulation–mineral fiber:	
Preformed pipe insulation .	ASTM[1] C547-00.
Blanket and felt insulation (industrial type)	ASTM C553-00.
Blanket insulation and blanket type pipe insulation (metal-mesh covered, industrial type)	ASTM C592-00.
Block and board insulation	ASTM C612-00.
Spray applied mineral fiber thermal and sound absorbing insulation	ASTM C1014-99ae1.
High-temperature fiber blanket insulation	ASTM C892-00.
Duct work insulation	ASTM C1290-00.
Insulation–mineral cellular:	
Calcium silicate block and pipe insulation	ASTM C533-95.
Cellular glass insulation . .	ASTM C552-00.
Expanded perlite block and pipe insulation	ASTM C610-99.
Insulation–organic cellular:	
Preformed flexible elastomeric cellular insulation in sheet and tubular form	ASTM C534-99.
Unfaced preformed rigid cellular polyurethane insulation	ASTM C591-00.
Insulation skirting	Commercially available.

[1] ASTM indicates American Society for Testing and Materials.

FIRE SAFETY REQUIREMENTS FOR INSULATING MATERIALS ACCORDING TO INSULATION USE

[Standards for conformance]

Attic floor	Insulation materials intended for exposed use in attic floors shall be capable of meeting the same smoldering combustion requirements given for cellulose insulation in ASTM[1] C739-00.
Enclosed space	Insulation materials intended for use within enclosed stud or joist spaces shall be capable of meeting the same smoldering combustion requirements given for cellulose insulation in ASTM C739-00.
Exposed interior walls and ceilings	Insulation materials, including those with combustible facings, which remain exposed and serve as wall or ceiling interior finish, shall have a flame spread classification not to exceed 150 (per ASTM E84-00a).
Exterior envelope walls and roofs	Exterior envelope walls and roofs containing thermal insulation shall meet applicable local government building code requirements for the complete wall or roof assembly.
Pipes, ducts, and equipment	Insulation materials intended for use on pipes, ducts, and equipment shall be capable of meeting a flame spread classification not to exceed 150 (per ASTM E84-00a).

[1] ASTM indicates American Society for Testing and Materials.

STORM WINDOWS

[Standards for conformance]

Storm windows:	
All storm windows . .	AAMA/NWWDA[1] 101/I.S. 2-97.
Aluminum frame storm windows	AAMA[2] 1002.10-93.
Rigid vinyl frame storm windows	ASTM[3] D4726-00.
Frameless plastic glazing storm	Required minimum thickness for windows is 6 mil (0.006 inches).
Movable insulation systems for windows	Commercially available.

[1] AAMA/NWWDA indicates American Architectural Manufacturers Association/National Wood Window & Door Association (now the Window & Door Manufacturers Association).

[2] AAMA indicates American Architectural Manufacturers Association.

[3] ASTM indicates American Society for Testing and Materials.

REPLACEMENT WINDOWS

[Standards for conformance]

Replacement windows:	
All windows	AAMA/NWWDA[1] 101/I.S. 2-97.
Steel frame windows	Steel Window Institute recommended specifications for steel windows, 1990.
Rigid vinyl frame windows	ASTM[2] D4726-00.

[1] AAMA/NWWDA indicates American Architectural Manufacturers Association/National Wood Window & Door Association (now the Window & Door Manufacturers Association).

[2] ASTM indicates American Society for Testing and Materials.

STORM DOORS

[Standards for conformance]

Storm doors:	
All storm (glass) doors	AAMA/NWWDA[1] 101/I.S. 2-97.
Aluminum frame storm doors	AAMA[2] 1102.7-89.
Sliding glass storm doors	AAMA 1002.10-93.
Rigid vinyl storm doors .	ASTM[3] D3678-97 and D4726-00..
Vestibules:	
Materials to construct vestibules	Commercially available.

[1] AAMA/NWWDA indicates American Architectural Manufacturers Association/National Wood Window & Door Association (now the Window & Door Manufacturers Association).

[2] AAMA indicates American Architectural Manufacturers Association.

[3] ASTM indicates American Society for Testing and Materials.

REPLACEMENT DOORS

[Standards for conformance]

Replacement doors:	
All replacement doors	AAMA/NWWDA[1] 101/I.S. 2-97.
Steel doors	ANSI[2] A250.8-98.
Wood doors:	
Flush doors	ANSI/NWWDA[3] I.S. 1-97 (Amendment, exterior door provisions).
Stile and rail doors	NWWDA[4] I.S. 6-97.

[1] AAMA/NWWDA indicates American Architectural Manufacturers Association/National Wood Window & Door Association (now the Window & Door Manufacturers Association).

[2] ANSI indicates American National Standards Institute.

[3] ANSI/NWWDA indicates American National Standards Institute/National Wood Window & Door Association (now the Window & Door Manufacturers Association).

[4] NWWDA indicates National Wood Window & Door Association (now the Window & Door Manufacturers Association).

CAULKS AND SEALANTS

[Standards for conformance]

Caulks and sealants:	
Glazing compounds for metal sash	ASTM[1] C669-00.
Oil and resin base caulks	ASTM C570-00.
Acrylic (solvent types) sealants	ASTM C920-98e1.
Butyl rubber sealants	FS[2] Commercial Item Description A-A-272 (6/7/95).
Chlorosulfonated polyethylene sealants	ASTM C920-98e1.
Latex sealing compounds	ASTM C834-00e1.
Elastomeric joint sealants (normally considered to include polysulfide, polyurethane, and silicone)	ASTM C920-98e1.
Preformed gaskets and sealing materials	ASTM C509-00.
Duct sealing mastic	UL[3] 181A-M, Second Edition, 1994 and UL 181B-M, First Edition, 1995.

[1] ASTM indicates American Society for Testing and Materials.

[2] FS indicates Federal Specifications.

[3] UL indicates Underwriters Laboratories.

WEATHERSTRIPPING

[Standards for conformance]

Weatherstripping	Commercially available.
Vapor retarders	Selected according to the provisions cited in ASTM[1]C755-97. Permeance not greater than 1 perm when determined according to the desiccant method described in ASTM E96-00.
Items to improve attic ventilation	Commercially available.

[1] ASTM indicates American Society for Testing and Materials.

HEAT EXCHANGERS

[Standards for conformance]

Heat exchangers, water-to-water and steam-to-water	ASME[1] Boiler and Pressure Vessel Code, 1998, Sections II, V, VIII, IX, and X, as applicable to pressure vessels. Standards of Tubular Exchanger Manufacturers Association, Eighth Edition, 1999.
Heat exchangers with gas-fired appliances[2]	ANSI/UL[3] 462, Ninth Edition, approved by ANSI February 28, 1997.

[1] ASME indicates American Society for Mechanical Engineers.

[2] The heat reclaimer is for installation in a section of the vent connector from appliances equipped with draft hoods or appliances equipped with powered burners or induced draft and not equipped with a draft hood.

[3] ANSI/UL indicates American National Standards Institute/Underwriters Laboratories.

BOILER/FURNACE CONTROL SYSTEMS

[Standards for conformance]

Automatic set back thermostats	Listed by UL[1]. Conformance to NEMA[2] DC3-1989 (R1996).
Line voltage or low voltage room thermostats	Listed by UL. Conformance to NEMA DC3-1989 (R1996).
Clock thermostats	Listed by UL. Conformance to NEMA DC3-1989 (R1996).
Automatic gas ignition systems	ANSI[3] Z21.21-2000. AGA[4] Laboratories Certification Seal.
Energy management systems	Listed by UL.
Hydronic boiler controls	Listed by UL.
Other burner controls . .	Listed by UL.

[1] UL indicates Underwriters Laboratories.

[2] NEMA indicates National Electrical Manufacturers Association.

[3] ANSI indicates American National Standards Institute.

[4] AGA indicates American Gas Association.

WATER HEATER MODIFICATIONS

[Standards for conformance]

Insulate tank and distribution piping	(See insulation section of this appendix)
Install heat traps on inlet and outlet piping	Applicable local plumbing code.
Install/replace water heater heating elements	Listed by UL[1].
Electric, freeze-prevention tape for pipes	Listed by UL.
Install stack damper, gas-fueled	ANSI[2] Z21.66-1996, including Exhibits A & B, and ANSI Z223.1-1999 (same as NFPA[3] 54-1999).
Install stack damper, oil-fueled	UL 17, Third Edition, 1994, NFPA 31-2001, NFPA 211-2000 (same as ANSI A52.1), and ANSI/ NFPA 70-1999 (same as IEEE[4] National Electrical Code).
Install water flow modifiers	Commercially available.

[1] UL indicates Underwriters Laboratories.
[2] ANSI indicates American National Standards Institute.
[3] NFPA indicates National Fire Prevention Association.
[4] IEEE indicates Institute of Electrical and Electronics Engineers.

REPLACEMENT WATER HEATERS

[Standards for conformance]

Electric (resistance) water heaters	10 CFR[1] 430 and UL[3] 174.
Heat pump water heaters	UL 1995, Second Edition, 1995. Electrical components to be listed by UL.
Gas water heaters:	
Rated ≤ 75 kBtu/hr . .	10 CFR 430 and ANSI[4] Z21.10.1-1998.
Rated ≥ 75 kBtu/hr . .	ANSI Z21.10.3-1998.
Oil water heaters	UL 732, Fifth Edition, 1995.

[1] CFR indicates Code of Federal Regulations.
[2] UL indicates Underwriters Laboratories.
[3] ANSI indicates American National Standards Institute.

SOLAR WATER HEATING SYSTEMS

[Standards for conformance]

Solar water heating systems including forced circulation, integral collector storage, thermo-syphon, and self-pumping systems	System must be certified per SRCC[1] OG 300, July 16, 1998.

[1] SRCC indicates Solar Rating and Certification Corporation.

WASTE HEAT RECOVERY DEVICES

[Standards for conformance]

Desuperheater/water heaters	ARI[1] 470-1995 and UL 1995, Second Edition, 1995.
Condensing heat exchangers	Commercially available components installed per manufacturers' specifications. NFPA[2] 211-2000 (same as ANSI A52.1) may apply in certain instances. See also the Heat Exchangers section of this appendix.
Heat pump water heating heat recovery systems	UL 1995, Second Edition, 1995. Electrical components to be listed by UL.
Energy recovery equipment	Energy Systems Analysis and Management, 1997 (SMACNA[3]).

[1] ARI indicates Air Conditioning and Refrigeration Institute.
[2] NFPA indicates National Fire Prevention Association.
[3] SMACNA denotes Sheet Metal and Air Conditioning Contractors' National Association.

BOILER REPAIR AND

Install gas conversation burners	ANSI[1] Z21.8-1994 (for gas- or oil-fired systems), ANSI Z21.17-1998, and ANSI Z223.1-1999 (same as NFPA 54-1999). AGA[2] Laboratories Certification Seal.
Replace oil burner	UL[3] 296, Ninth Edition, 1994 and NFPA 31-2001.
Install burners (oil/gas)	ANSI Z223.1-1999 for gas equipment and NFPA[4] 31-2001 for oil equipment.
Re-adjust boiler water temperature or install automatic boiler temperature reset control	ASME[5] CSD-1-1998, ANSI Z223.1-1999, and NFPA 31-2001.
Replace/modify boilers	ASME Boiler and Pressure Vessel Code, 1998, Section II, IV, V, VI, VIII, IX, and X. Boilers must be Hydronics Institute Division of GAMA equipment.
Clean heat exchanger, adjust burner air shutter(s), check smoke no. on oil-fueled equipment. Check operation of pump(s) and replacement filters.	Per manufacturers' instructions.
Replace combustion chambers	Refractory linings may be required for conversions.

BOILER REPAIR AND MODIFICATIONS/EFFICIENCY IMPROVEMENTS—Continued

[Standards for conformance]

Replace heat ex-changers, tubes	Protection from flame contact with conversion burners by refractory shield.
Install/replace thermo-static radiator valves	Commercially available. One-pipe steam systems require air vents on each radiator; see manufacturers' requirements.
Install boiler duty cycle control system	Commercially available. ANSI/NFPA 70-1999 (same as IEEE National Electrical Code) and local electrical code provisions for wiring.

[1] ANSI indicates American National Standards Institute.
[2] AGA indicates American Gas Association.
[3] UL indicates Underwriters Laboratories.
[4] NFPA indicates National Fire Prevention Association.
[5] ASME indicates American Society for Mechanical Engineers.

HEATING AND COOLING SYSTEM REPAIRS AND TUNE-UPS/EFFICIENCY IMPROVEMENTS

[Standards for conformance]

Install duct insulation . .	ASTM[1] C612-00 (see insulation sections of this appendix).
Reduce Input of burner; derate gas-fueled equipment	Local utility company and procedures if applicable for gas-fueled furnaces and ANSI[2] Z223.1-1999 (same as NFPA[3] 54-1999) including Appendix H.
Repair/replace oil-fired equipment	NFPA 31-2001.
Replace combustion chamber in oil-fired furnaces or boilers	NFPA 31-2001.
Clean heat exchanger and adjust burner; adjust air shutter and check CO_2 and stack temperature. Clean or replace air filter on forced air furnace	ANSI Z223.1-1999 (same as NFPA 54-1999) including Appendix H.
Install vent dampers for gas-fueled heating systems	Applicable sections of ANSI Z223.1-1999 (same as NFPA 54-1999) including Appendix H, I, J, and K. ANSI Z21.66-1996 and Exhibits A&B for electrically operated dampers.
Install vent dampers for oil-fueled heating systems	Applicable sections of NFPA 31-2001 for installation and in conformance with UL[4] 17, Third Edition, 1994.

HEATING AND COOLING SYSTEM REPAIRS AND TUNE-UPS/EFFICIENCY IMPROVEMENTS—Continued

[Standards for conformance]

Reduce excess combustion air:	
A: Reduce vent connector size of gas-fueled appliances	ANSI Z223.1-1999 (same as NFPA 54-1999) part 9 and Appendices G & H.
B: Adjust barometric draft regulator for oil fuels	NFPA 31-2001 and per furnace and boiler manufacturers' instructions.
Replace constant burning pilot with electric ignition device on gas-fueled furnaces or boilers	ANSI Z21.71-1993.
Readjust fan switch on forced air gas-or oil-fueled furnaces	Applicable sections and Appendix H of ANSI Z223.1-1999 (same as NFPA 54-1999) for gas furnaces and NFPA 31-2001 for oil furnaces.
Replace burners	See install burners (oil/gas).
Install/replace duct furnaces (gas)	ANSI Z223.1-1999 (same as NFPA 54-1999).
Install/replace heat pumps	ARI[5] 210/240-1994. UL 1995, Second Edition, 1995.
Replace air diffusers, intakes, registers, and grilles	Commercially available.
Install/replace warm air heating metal ducts	UL 181, Ninth Edition 1996, including UL 181A, Second Edition 1994 and 181B, First Edition, 1995.
Filter alarm units	Commercially available.

[1] ASTM indicates American Society for Testing and Materials.

[2] ANSI indicates American National Standards Institute.

[3] NFPA indicates National Fire Prevention Association.

[4] UL indicates Underwriters Laboratories.

[5] ARI indicates Air Conditioning and Refrigeration Institute.

REPLACEMENT FURNACES, BOILERS, AND WOOD STOVES

[Standards for conformance]

Chimneys, fireplaces, vents and solid fuel burning appliances	NFPA[1] 211-2000 (same as ANSI[2] A52.1).
Gas-fired furnaces	ANSI Z21.47-1998 and ANSI Z223.1-1999 (same as NFPA 54-1999).
Oil-fired furnaces	UL[3] 727, Eighth Edition, 1994 and NFPA 31-2001.
Liquefied petroleum gas storage	NFPA 58-2001.
Ventilation fans:	
Including electric attic, ceiling, and whole-house fans	UL 507, Ninth Edition, 1999.

[1] NFPA indicates National Fire Prevention Association.
[2] ANSI indicates American National Standards Institute.
[3] UL indicates Underwriters Laboratories.

AIR CONDITIONERS AND COOLING EQUIPMENT

[Standards for conformance]

Air conditioners:	
Central air conditioners	ARI[1] 210/240-1994.
Room size units	ANSI/AHAM[2] RAC 1-1992.
Other cooling equipment:	
Including evaporative coolers, heat pumps, and other equipment	UL[3] 1995, Second Edition, 1995.

[1] ARI indicates Air Conditioning and Refrigeration Institute.
[2] ANSI/AHAM indicates American National Standards Institute/Association of Home Appliance Manufacturers.
[3] UL indicates Underwriters Laboratories.

SCREENS, WINDOW FILMS, AND REFLECTIVE MATERIALS

[Standards for conformance]

Insect screens	Commercially available.
Window films	Commercially available.
Shade screens:	
Fiberglass shade screens	Commercially available.
Polyester shade screens	Commercially available.
Rigid awnings:	
Wood rigid awnings	Commercially available.
Metal rigid awnings .	Commercially available.
Louver systems:	
Wood louver awnings	Commercially available.
Metal louver awnings	Commercially available.
Industrial-grade white paint used as a heat-reflective measure on roofs, awnings, window louvers, doors, and exterior duct work (exposed)	Commercially available.

REFRIGERATORS

[Standards for conformance]

Refrigerator/freezers (does not include freezer-only units)	UL[1] 250. Replaced units must be disposed of properly per Clean Air Act 1990, Section 608, as amended by 40 CFR[2] 82, May 14, 1993.

[1] UL indicates Underwriters Laboratories.
[2] CFR indicates Code of Federal Regulations.

FLUORESCENT LAMPS AND FIXTURES

[Standards for conformance]

Compact fluorescent lamps	ANSI/UL[1] 542, Seventh Edition, February 6, 1997 and UL 1993, First Edition, 1993.
Fluorescent lighting fixtures	UL 1570, Fourth Edition, 1995.

[1] ANSI/UL indicates American National Standards Institute/Underwriters Laboratories.

Rules and Regulations

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This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

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DEPARTMENT OF ENERGY

10 CFR Part 440

[Docket No. EEWAP1201]

RIN 1904–AB84

Weatherization Assistance Program for Low-Income Persons

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Final rule.

SUMMARY: The U.S. Department of Energy (DOE) is expanding the definition of ''State'' under the Weatherization Assistance Program for Low-Income Persons and amending the financial assistance allocation procedure to reflect the expanded definition. The Energy Independence and Security Act of 2007 amended the Weatherization Assistance Program definition of ''State'' to include the Commonwealth of Puerto Rico and the other territories and possessions of the United States. Consistent with the statutory amendment, DOE is amending the regulatory definition of ''State,'' and amending the allocation procedure relied on to calculate the amount of financial assistance received by each State so as to include American Samoa, Guam, Commonwealth of the Northern Mariana Islands, Commonwealth of Puerto Rico, and the Virgin Islands. Further, DOE is amending the Weatherization Assistance Program regulations consistent with recent statutory amendments in the American Recovery and Reinvestment Act of 2009.

DATES: This final rule is effective March 25, 2009, and applicable on March 12, 2009.

FOR FURTHER INFORMATION CONTACT: Jean Diggs, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Weatherization Assistance Program, EE–2K, Room 6070, 1000 Independence Avenue, SW., Washington, DC 20585–0121, (202) 586–8506, e-mail: *jean.diggs@ee.doe.gov,* or Chris Calamita, U.S. Department of Energy, Office of the General Counsel, Forrestal Building, GC–72, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586–9507, e-mail: *Christopher.Calamita@hq.doe.gov.*

SUPPLEMENTARY INFORMATION:

I. Introduction
II. Definition of ''State''
III. Allocation of Funds
IV. American Recovery and Reinvestment Act of 2009
V. Effective Date
VI. Regulatory Analysis
VII. Congressional Notification
VIII. Approval of the Office of the Secretary

I. Introduction

Sections 411–418 of the Energy Conservation and Production Act established the Weatherization Assistance Program for Low-Income Persons (Weatherization Assistance Program). (42 U.S.C. 6861 *et seq.*) The Weatherization Assistance Program reduces energy costs for low-income households by increasing the energy efficiency of their homes, while promoting their health and safety. DOE works in partnership with State- and local-level agencies to implement the Weatherization Assistance Program. DOE's Project Management Center awards grants to State-level agencies, which then contract with local agencies.

DOE issued a notice of proposed rulemaking (NOPR) to amend the Weatherization Assistance Program regulations consistent with amendments to the Energy Conservation and Production Act under the Energy Independence and Security Act of 2007 (Pub. L. No. 110–140; December 19, 2007). (73 FR 79414; December 29, 2008) The Energy Independence and Security Act of 2007 amended the Weatherization Assistance Program definition of ''State'' to include the Commonwealth of Puerto Rico and the other territories and possessions of the United States. Consistent with the statutory amendment, DOE proposed to amend the regulatory definition of ''State,'' and to amend the allocation procedure relied on to calculate the amount of financial assistance received by each State so as to include American Samoa, Guam, Commonwealth of the Northern Mariana Islands, Commonwealth of Puerto Rico, and the Virgin Islands.

DOE received one comment in response to the NOPR, from the Governor of the Virgin Islands. The comment was generally supportive of the rule as proposed. As explained in the remainder of this notice, DOE is adopting the NOPR as proposed. Further, DOE is making additional amendments to the Weatherization Assistance Program regulations consistent with the recent statutory changes in the American Recovery and Reinvestment Act of 2009 (Pub. L. No. 111–5).

II. Definition of ''State''

DOE allocates financial assistance for weatherization to States and Indian tribes. 10 CFR 440.10 and 440.11. Section 411(c) of the Energy Independence and Security Act of 2007 amended section 412 of the Energy Conservation and Production Act to include under the definition of ''State,'' the Commonwealth of Puerto Rico, and any other territory or possession of the United States. (42 U.S.C. 6862(8)) In the NOPR, DOE proposed to amend the regulatory definition of ''State'' under the Weatherization Program consistent with the statutory definition. As proposed the definition of ''State'' would include American Samoa, Guam, Commonwealth of the Northern Mariana Islands, Commonwealth of Puerto Rico, and the Virgin Islands (hereafter collectively referred to as the U.S. territories).

The amended statutory definition of ''State'' includes territories or possessions of the United States generally, which would indicate that the territories of Palmyra Atoll and Wake Atoll would also be included. However, as explained in the NOPR, the territories of Palmyra Atoll and Wake Atoll do not have significant permanent populations to warrant inclusion in the Weatherization Program. Palmyra Atoll is a national Wildlife Refuge and access to Wake Atoll is restricted. (See, *http://www.doi.gov/oia/Firstpginfo/islandfactsheet.htm*, last visited September 30, 2008.) The purpose of the Weatherization Assistance Program is to provide grants ''for the purpose of providing financial assistance with regard to projects designed to provide for the weatherization of dwelling units, particularly those where elderly or

handicapped low-income persons reside, occupied by low-income families.'' (42 U.S.C. 6863(a)) Further DOE must ''allocate financial assistance to each State on the basis of the relative need for weatherization assistance among low-income persons throughout the States[.]'' (42 U.S.C. 6864) The absence of permanent populations on Palmyra Atoll and Wake Atoll would make the inclusion of these Atolls superfluous. As such DOE did not propose to include the territories of Palmyra Atoll and Wake Atoll in the regulatory definition of State for the purpose of the Weatherization Assistance Program.

The comment from the Governor of the Virgin Islands supported inclusion of the U.S. territories in the definition of ''State,'' and urged DOE to finalize the revised definition in advance of distributing funds made available under the American Recovery and Reinvestment Act of 2009.

DOE has concluded that the rationale for the proposed definition remains valid. Therefore, DOE is amending the definition of ''State,'' as proposed, to mean each of the States, the District of Columbia, American Samoa, Guam, Commonwealth of the Northern Mariana Islands, Commonwealth of Puerto Rico, and the Virgin Islands.

III. Allocation of Funds

Each year Congress appropriates funds to implement the Weatherization Assistance Program. A portion of the appropriated funds is used for training and technical assistance. The remaining funds, comprising the majority of the appropriated funds, are distributed to the States as program funds based on a two-part allocation.

From the total appropriation, DOE reserves funds for national training and technical assistance (T&TA) activities that benefit all States. In addition, DOE specifically allocates funding to States for T&TA activities at both the State and local levels. Prior to the American Recovery and Reinvestment Act of 2009, the total funds for national, State, and local T&TA could not exceed 10 percent of the Congressional appropriation. Section 407 of the American Recovery and Reinvestment Act of 2009 increased the percent of funds eligible for T&TA to up to 20 percent. (42 U.S.C. 6866) The remaining funds comprise the State program allocations.

If the State program allocations in a fiscal year (FY) are at or above the amount allocated to States in FY 1994 under Public Law No. 103–332 (September 30, 1994) (i.e., the funds made available to the Weatherization Assistance Program minus funds for T&TA, which equaled $209,724,761) the State program allocations are distributed according to a two-part allocation procedure. Should total funds for State program allocation fall below $209,724,761, the allocations to States are reduced proportionally. *See* 10 CFR 440.10(c).

The two-part allocation is comprised of a base allocation plus a formula allocation. *See* 10 CFR 440.10(b). The base allocation for each State is fixed, but differs for each State and was derived from each State's allocation under the appropriations for FY 1993.[1] The base allocation was developed to minimize fluctuations in funds received by States between fiscal years resulting from changes in the total amount of appropriated funds received for the Weatherization Assistance Program. The base allocation was established in response to concern that substantial fluctuation between annual funds could disrupt a State's program.

Under the two-part allocation, funds in excess of the total base allocation are allocated among States according to the formula allocation set forth in 10 CFR 440.10(b)(3). A State's formula allocation is based on three factors for each State. Factor 1, Low-Income Population, represents the share of the nation's low-income households in each State expressed as a percentage of all U.S. low-income households. Factor 2, Climatic Conditions, is obtained from the heating and cooling degrees for each State, treating the energy needed for heating and cooling proportionately. Factor 3, Residential Energy Expenditures by Low-Income Households in each State, is an approximation of the financial burden that energy use places on low-income households. The approximation is necessary because State-specific data on residential energy expenditures by low-income households is generally lacking.

In the NOPR, DOE proposed to revise how funds are allocated under the Weatherization Assistance Program so as to include the U.S. territories. The proposed revisions were based on a method for determining the base and formula allocation for the U.S. territories that was consistent with how the current allocation method for States was developed.

Essentially, the Department followed the development process used in 1995 to establish the existing allocation method (i.e., basing the allocation formula on FY 1994 allocation) under the assumption that at that time the U.S. territories were included in the Weatherization Assistance Program. DOE recognized that the data used to calculate a State's share of the funds under the 1995 rulemaking are not available for the U.S. territories. Therefore, DOE proposed to use Hawaii's information for the U.S. territories. Similar to Hawaii, the U.S. territories are in hot climates with virtually no heating load, are all islands, and share a common main fuel type used in low-income households, electricity.

A. Allocation Threshold

As discussed in the previous paragraphs, the allocation of funding under the Weatherization Assistance Program is dependent first upon whether the total funds available for allocation to the States (excluding funds for T&TA) are at or above the level made available under Public Law No. 103–322, i.e., $209,724,761. In order to make the regulations clearer, the Department is replacing the references in 10 CFR part 440 to the ''total program allocations under Public Law No. 103–322'' with the actual dollar value. This amendment does not impact the allocation process, and is solely for the purpose of making the current regulation easier to read and understand.

B. Base Allocation

To reflect the addition of the U.S. territories to the Weatherization Assistance Program, DOE is revising the base allocation to include the newly added jurisdictions, as proposed. As discussed previously, DOE relied on Hawaii's base allocation ($120,000) as the base allocation for the U.S. territories. This revision does not reduce the base allocation amount for any State, but instead increases the total base allocation value so as to include the U.S. territories.

The comment from the Governor of the Virgin Islands supported the use of data from Hawaii, although indicated that such data could be made available for the Virgin Islands. However, such data was not provided as part of the comment.

For the reasons expressed in the NOPR and in this Final Rule, DOE is adopting the Base Allocation as proposed.

C. Formula Allocation

In addition to a base allocation, DOE will now allocate weatherization funds to the U.S. territories through the formula allocation. Essentially, the weatherization funds will be based on

[1] Calculation of each State's share of the funds was based on a formula different from that in the current regulations. See, 60 FR 4480, 4482; January 23, 1995.

the U.S. territories' (1) Number of low-income households (10 CFR 440.10(b)(3)(i)), (2) number of ''heating degree'' and ''cooling degree'' days (10 CFR 440.10(b)(3)(ii) and (iii)), and (3) average residential household energy expenditures (10 CFR 440.10(b)(3)(v)). DOE recognizes that data for the third factor of the formula allocation, i.e., average residential household energy expenditures, may not be available for all the U.S. territories. In the instances in which DOE does not have such data, DOE will again rely on comparable data from a comparable State, i.e., Hawaii, as proposed. This approach does not require revisions to the regulatory text for the formula allocation.

IV. American Recovery and Reinvestment Act of 2009

Section 407 of the American Recovery and Reinvestment Act of 2009 amended several of the Weatherization Assistance Program provisions in the Energy Conservation and Production Act. The amendments under section 407—

- Increased the referenced percentage of the poverty level in the definition of ''low income'' from 150 percent to 200 percent (42 U.S.C. 6862(7));
- Increased the limit on the minimum average expenditure per dwelling unit from $2,500 to $6,500 (42 U.S.C. 6865(c)(1));
- Increased the maximum amount of appropriated funds that the Department may apply towards T&TA from 10 percent of the appropriated sums to 20 percent (42 U.S.C. 6866); and
- Extended eligibility for further financial assistance to dwelling units that had been partially weatherized under a Federal program from September 30, 1975, through September 30, 1994.

The first three of these amendments under section 407 of the American Recovery and Reinvestment Act of 2009 require updates to the Weatherization Assistance Program regulations. Today's final rule amends the regulations consistent with these changes. The time period for previously received financial assistance as it relates to dwelling eligibility is governed by the statute and is not reflected in regulation, and as such there is no existing regulation to update.

DOE finds that there is good cause to amend the Weatherization Assistance Program regulations consistent with the American Recovery and Reinvestment Act of 2009 without providing an opportunity for notice and comment as such procedures are unnecessary. DOE is establishing the maximum percent of poverty level referenced in the definition of ''low income,'' the maximum permitted expenditure per dwelling, or the maximum percent of funds permitted to be used for T&TA in accordance with the specific provisions of the statute. DOE is exercising no discretion in codifying these provisions and does not have the authority to amend the specific aspects of these provisions. Thus, no useful purpose would be served by offering an opportunity for public comment.

V. Effective Date

Today's final rule is effective on March 25, 2009. Pursuant to 5 U.S.C. 553(d)(3), the Department finds good cause that the effective date of this final rule need not be delayed. In the American Recovery and Reinvestment Act of 2009 Congress appropriated $5 billion for the Weatherization Assistance Program. The stated purposes of the American Recovery and Reinvestment Act of 2009 are—

(1) To preserve and create jobs and promote economic recovery.

(2) To assist those most impacted by the recession.

(3) To provide investments needed to increase economic efficiency by spurring technological advances in science and health.

(4) To invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits.

(5) To stabilize State and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive state and local tax increases. (Section 3(a), Pub. L. No. 11–5) Moreover, Congress directed the agencies to manage and expend the funds made available so as to achieve the specified purposes, including commencing expenditures and activities as quickly as possible consistent with prudent management. (Section 3(b), Pub. L. No. 11–5) A delay in the effective date of today's final rule would delay the allocation of weatherization assistance funds to the States including the U.S. territories.[2] DOE believes it would be contrary to the public interest to delay the allocation of weatherization funds made available under the American Recovery and Reinvestment Act of 2009. Thus, a delay to the final rule would be inconsistent with the Congressional direction to commence expenditures as quickly as possible, and thereby unnecessary, impracticable, and contrary to public interest. For the reasons stated above, DOE finds good cause, pursuant to 5 U.S.C. 553(d)(3), to waive the 30-day delay in effective date required by the rulemaking provisions of the Administrative Procedures Act.

[2] The comment from the Governor of the Virgin Islands encouraged DOE to apply the amended definition and allocation formula to funds made available under the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009 (Pub. L. No. 110–329; September 30, 2008). Today's final rule will apply to fund allocation determinations made following the issuance date of today's final rule.

VI. Regulatory Analysis

A. Review under Executive Order 12866

Today's final rule is not a significant regulatory action under section 3(f)(1) of Executive Order 12866, ''Regulatory Planning and Review'' (58 FR 51735; October 4, 1993). Accordingly, today's action was not subject to review by the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB).

B. Review under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires the preparation of an initial regulatory flexibility analysis for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by Executive Order 13272, ''Proper Consideration of Small Entities in Agency Rulemaking,'' (67 FR 53461; August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the rulemaking process (68 FR 7990). DOE has made its procedures and policies available on the Office of General Counsel's Web site: *http://www.gc.doe.gov.*

DOE has reviewed today's final rule for the Weatherization Assistance Program under the provisions of the Regulatory Flexibility Act. Today's final rule incorporates statutory changes made to the Weatherization Assistance Program. The amendments include the U.S. territories in the Weatherization Assistance Program to the same extent as States are currently included. This rule will directly affect States and individual recipients of assistance. It will not have an economic impact on small entities. On this basis, DOE certifies that today's final rule will not have a significant economic impact on a substantial number of small entities. Accordingly, DOE has not prepared a regulatory flexibility analysis for this rulemaking.

C. Review Under the National Environmental Policy Act of 1969

DOE has determined that today's final rule is covered under the Categorical Exclusion found in DOE's National Environmental Policy Act regulations at paragraph A.6. of Appendix A to subpart D, 10 CFR part 1021. That Categorical Exclusion applies to rulemakings that are strictly procedural, such as rulemaking establishing the administration of grants. Today's final rule establishes the procedure for allocating funds under the Weatherization Assistance Program so as to cover, in addition to the States and the District of Columbia, the U.S. territories. The regulations will not have any independent environmental impact. Accordingly, DOE has not prepared an environmental assessment or an environmental impact statement.

D. Review Under Executive Order 13132, ''Federalism''

Executive Order 13132, 64 FR 43255 (August 4, 1999), imposes certain requirements on agencies formulating and implementing policies or regulations that pre-empt State law or that have federalism implications. Agencies are required to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and carefully assess the necessity for such actions. DOE has examined today's final rule and has determined that it will not pre-empt State law and will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. No further action is required by Executive Order 13132.

E. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, Civil Justice Reform, 61 FR 4729 (February 7, 1996), imposes on Executive agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; and (3) provide a clear legal standard for affected conduct rather than a general standard and promote simplification and burden reduction. The review required by sections 3(a) and 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the pre-emptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in sections 3(a) and 3(b) to determine whether they are met or it is unreasonable to meet one or more of them.

DOE has completed the required review and determined that, to the extent permitted by law, today's final rule meets the relevant standards of Executive Order 12988.

F. Review Under the Unfunded Mandates Reform Act of 1995

The Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) generally requires Federal agencies to examine closely the impacts of regulatory actions on State, local, and tribal governments. Subsection 101(5) of Title I of that law defines a Federal intergovernmental mandate to include any regulation that would impose upon State, local, or tribal governments an enforceable duty, except a condition of Federal assistance or a duty arising from participating in a voluntary Federal program. Title II of that law requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and tribal governments, in the aggregate, or to the private sector, other than to the extent such actions merely incorporate requirements specifically set forth in a statute. Section 202 of that title requires a Federal agency to perform a detailed assessment of the anticipated costs and benefits of any rule that includes a Federal mandate which may result in costs to State, local, or tribal governments, or to the private sector, of $100 million or more. Section 204 of that title requires each agency that proposes a rule containing a significant Federal intergovernmental mandate to develop an effective process for obtaining meaningful and timely input from elected officers of State, local, and tribal governments.

Today's final rule will not impose a Federal mandate on State, local or tribal governments, and it will not result in the expenditure by State, local, and tribal governments in the aggregate, or by the private sector, of $100 million or more in any one year. Accordingly, no assessment or analysis is required under the Unfunded Mandates Reform Act of 1995.

G. Review Under the Treasury and General Government Appropriations Act of 1999

Section 654 of the Treasury and General Government Appropriations Act of 1999 (Pub. L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. Today's final rule will not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

H. Review Under the Treasury and General Government Appropriations Act of 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516, note) provides for agencies to review most disseminations of information to the public under guidelines established by each agency pursuant to general guidelines issued by OMB. OMB's guidelines were published at 67 FR 8452 (February 22, 2002), and DOE's guidelines were published at 67 FR 62446 (October 7, 2002). DOE has reviewed today's final rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

I. Review Under Executive Order 13211

Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,'' 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to the OMB a Statement of Energy Effects for any proposed significant energy action. A ''significant energy action'' is defined as any action by an agency that promulgated or is expected to lead to promulgation of a final rule, and that: (1) Is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of the Office of Information and Regulatory Affairs (OIRA) as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use, should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

Today's regulatory action will not have a significant adverse effect on the supply, distribution, or use of energy and is therefore not a significant energy action. Accordingly, DOE has not prepared a Statement of Energy Effects.

J. Review Under Executive Order 13175

Executive Order 13175. ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249; November 9, 2000), requires DOE to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.'' ''Policies that have tribal implications'' refers to regulations that have ''substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.'' Today's regulatory action is not a policy that has ''tribal implications'' under Executive Order 13175.

Under the Weatherization Assistance Program, a tribal organization may qualify as a unit of general purpose local government and, therefore, be eligible to apply for funds. See 10 CFR 440.11. Today's regulatory action will not change the eligibility of Indian tribes to apply for or receive funds under the Weatherization Assistance Program. Today's regulatory action will include the U.S. territories in the allocation of available funds. DOE has reviewed today's final rule under Executive Order 13175 and has determined that it is consistent with applicable policies of that Executive Order.

VII. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this rule prior to its effective date. The report will state that it has been determined that the rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

VIII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of today's final rule.

List of Subjects in 10 CFR Part 440

Administrative practice and procedure, Energy conservation, Grant programs—energy, Grant programs—housing and community development, Housing standards, Indians, Individuals with disabilities, Reporting and record keeping requirements, Weatherization.

Issued in Washington, DC, on March 12, 2009.

Steve Chalk,

Acting Assistant Secretary, Energy Efficiency and Renewable Energy.

■ For the reasons set forth in the preamble, DOE amends part 440 of chapter II of title 10, Code of Federal Regulations, to read as follows:

PART 440—WEATHERIZATION ASSISTANCE PROGRAM FOR LOW-INCOME PERSONS

■ 1. The authority citation for Part 440 continues to read as follows:

Authority: 42 U.S.C. 6861 *et seq.*; 42 U.S.C. 7101 *et seq.*

■ 2. Section 440.3 is amended by revising the definitions of ''low income'' and ''State'' to read as follows:

§ 440.3 Definitions.

* * * * *

Low Income means that income in relation to family size which:

(1) At or below 200 percent of the poverty level determined in accordance with criteria established by the Director of the Office of Management and Budget, except that the Secretary may establish a higher level if the Secretary, after consulting with the Secretary of Agriculture and the Secretary of Health and Human Services, determines that such a higher level is necessary to carry out the purposes of this part and is consistent with the eligibility criteria established for the weatherization program under Section 222(a)(12) of the Economic Opportunity Act of 1964;

(2) Is the basis on which cash assistance payments have been paid during the preceding twelve month-period under Titles IV and XVI of the Social Security Act or applicable State or local law; or

(3) If a State elects, is the basis for eligibility for assistance under the Low Income Home Energy Assistance Act of 1981, provided that such basis is at least 200 percent of the poverty level determined in accordance with criteria established by the Director of the Office of Management and Budget.

* * * * *

State means each of the States, the District of Columbia, American Samoa, Guam, Commonwealth of the Northern Mariana Islands, Commonwealth of Puerto Rico, and the Virgin Islands.

* * * * *

■ 3. Section 440.10 is amended by:

■ a. Removing the phrase ''total program allocations under Pub. L. 103–332'' in paragraph (b) introductory text and adding in its place ''$209,724,761'';

■ b. Revising Table 1 in paragraph (b)(1) and paragraph (c) to read as follows:

§ 440.10 Allocation of funds.

* * * * *

(b) * * *

(1) * * *

BASE ALLOCATION TABLE

State	Base allocation
Alabama	$1,636,000
Alaska	1,425,000
Arizona	760,000
Arkansas	1,417,000
California	4,404,000
Colorado	4,574,000
Connecticut	1,887,000
Delaware	409,000
District of Columbia	487,000
Florida	761,000
Georgia	1,844,000
Hawaii	120,000
Idaho	1,618,000
Illinois	10,717,000
Indiana	5,156,000
Iowa	4,032,000
Kansas	1,925,000
Kentucky	3,615,000
Louisiana	912,000
Maine	2,493,000
Maryland	1,963,000
Massachusetts	5,111,000
Michigan	12,346,000
Minnesota	8,342,000
Mississippi	1,094,000
Missouri	4,615,000
Montana	2,123,000
Nebraska	2,013,000
Nevada	586,000
New Hampshire	1,193,000
New Jersey	3,775,000
New Mexico	1,519,000
New York	15,302,000
North Carolina	2,853,000
North Dakota	2,105,000
Ohio	10,665,000
Oklahoma	1,846,000
Oregon	2,320,000
Pennsylvania	11,457,000
Rhode Island	878,000
South Carolina	1,130,000
South Dakota	1,561,000
Tennessee	3,218,000
Texas	2,999,000
Utah	1,692,000
Vermont	1,014,000
Virginia	2,970,000
Washington	3,775,000
West Virginia	2,573,000
Wisconsin	7,061,000
Wyoming	967,000
American Samoa	120,000
Guam	120,000
Puerto Rico	120,000
Northern Mariana Islands	120,000
Virgin Islands	120,000
Total	171,858,000

* * * * *

(c) Should total program allocations for any fiscal year fall below $209,724,761, then each State's program allocation shall be reduced from its allocated amount under a total program allocation of $209,724,761 by the same

percentage as total program allocations for the fiscal year fall below $209,724,761.

* * * * *

■ 4. Section 440.18 is amended by revising paragraphs (a) and (c) introductory text to read as follows:

§ 440.18 Allowable expenditures.

(a) Except as adjusted, the expenditure of financial assistance provided under this part for labor, weatherization materials, and related matters included in paragraphs (c)(1) through (9) of this section shall not exceed an average of $6,500 per dwelling unit weatherized in the State, except as adjusted in paragraph (c) of this section.

* * * * *

(c) The $6,500 average will be adjusted annually by DOE beginning in calendar year 2010 and the $3,000 average for renewable energy systems will be adjusted annually by DOE beginning in calendar year 2007, by increasing the limitations by an amount equal to:

* * * * *

■ 5. Section 440.22 is amended by revising paragraph (a) to read as follows:

§ 440.22 Eligible dwelling units.

(a) A dwelling unit shall be eligible for weatherization assistance under this part if it is occupied by a family unit:

(1) Whose income is at or below 200 percent of the poverty level determined in accordance with criteria established by the Director of the Office of Management and Budget,

(2) Which contains a member who has received cash assistance payments under Title IV or XVI of the Social Security Act or applicable State or local law at any time during the 12-month period preceding the determination of eligibility for weatherization assistance; or

(3) If the State elects, is eligible for assistance under the Low-Income Home Energy Assistance Act of 1981, provided that such basis is at least 200 percent of the poverty level determined in accordance with criteria established by the Director of the Office of Management and Budget.

* * * * *

■ 6. Section 440.23 is amended by revising paragraph (e) to read as follows:

§ 440.23 Oversight, training, and technical assistance.

* * * * *

(e) The Secretary may reserve from the funds appropriated for any fiscal year an amount not to exceed 20 percent to provide, directly or indirectly, training and technical assistance to any grantee or subgrantee. Such training and technical assistance may include providing information concerning conservation practices to occupants of eligible dwelling units.

[FR Doc. E9–6628 Filed 3–24–09; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

18 CFR Part 37

[Docket Nos. RM05–17–004 and RM05–25–004; Order No. 890–C]

Preventing Undue Discrimination and Preference in Transmission Service

March 19, 2009.

AGENCY: Federal Energy Regulatory Commission.

ACTION: Order on Rehearing and Clarification.

SUMMARY: The Federal Energy Regulatory Commission affirms its basic determinations in Order Nos. 890, 890–A and 890–B, granting rehearing and clarification regarding certain revisions to its regulations and the *pro forma* open-access transmission tariff, or OATT, adopted in Order Nos. 888 and 889 to ensure that transmission services are provided on a basis that is just, reasonable, and not unduly discriminatory. The Commission grants clarification of the degree of consistency required in the calculation of available transfer capability by transmission providers and denies rehearing regarding the requirement to undesignate network resources used to serve off-system sales

DATES: *Effective Date:* This rule will become effective March 25, 2009.

FOR FURTHER INFORMATION CONTACT: W. Mason Emnett, Office of the General Counsel—Energy Markets, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, (202) 502–6540.

SUPPLEMENTARY INFORMATION:

Before Commissioners: Jon Wellinghoff, Acting Chairman; Suedeen G. Kelly, Marc Spitzer, and Philip D. Moeller.

1. On February 16, 2007, the Commission issued Order No. 890,[1] addressing and remedying opportunities for undue discrimination under the *pro forma* Open Access Transmission Tariff (OATT) adopted in Order No. 888.[2] The *pro forma* OATT was intended to foster greater competition in wholesale power markets by reducing barriers to entry in the provision of transmission service. In the ten years since Order No. 888, however, flaws in the *pro forma* OATT undermined its ability to realize the core objective of remedying undue discrimination. The Commission acted in Order No. 890 to correct these flaws by reforming the terms and conditions of the *pro forma* OATT in several critical areas, including the calculation of available transfer capability (ATC), the planning of transmission facilities, and the conditions of services offered by each transmission provider.

2. In Order Nos. 890–A and 890–B, the Commission largely affirmed the reforms adopted in Order No. 890. The Commission concluded that, taken together, these reforms will better enable the *pro forma* OATT to achieve the core objective of remedying undue discrimination in the provision of transmission service. The Commission did, however, grant rehearing and clarification regarding certain revisions to its regulations and the *pro forma* OATT. NorthWestern Corporation (NorthWestern) and South Carolina Electric and Gas Co. (SCE&G) have requested further rehearing and clarification of Order No. 890–B on certain discrete issues, which we address below.

I. Reforms of the OATT

A. Consistency and Transparency of ATC Calculations

3. In Order No. 890–B, the Commission among other things affirmed a clarification provided in Order No. 890–A that adjacent transmission providers must coordinate and exchange data and assumptions to achieve consistent available transfer capability (ATC) values on either side of a single interface.[3] The Commission stated that it disagreed with petitioners arguing that consistent ATC values

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[1] *Preventing Undue Discrimination and Preference in Transmission Service,* Order No. 890, 72 FR 12,266 (March 15, 2007), FERC Stats. & Regs. ¶ 31,241, *order on reh'g,* Order No. 890–A, 73 FR 2984 (January 16, 2008), FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g,* Order No. 890–B, 123 FERC ¶ 61,299 (2008).

[2] *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities,* Order No. 888, 61 FR 21,540 (May 10, 1996), FERC Stats. & Regs. ¶ 31,026 (1996), *order on reh'g,* Order No. 888–A, 62 FR 12,274 (Mar. 14, 1997), FERC Stats. & Regs. ¶ 31,048 (1997), *order on reh'g,* Order No. 888–B, 81 FERC ¶ 61,248 (1997), *order on reh'g,* Order No. 888–C, 82 FERC ¶ 61,046 (1998, *aff'd in relevant part sub nom. Transmission Access Policy Study Group v. FERC,* 225 F.3d 667 (DC Cir. 2000)(*TAPS* v. *FERC*), *aff'd sub nom. New York* v. *FERC,* 535 U.S. 1 (2002).

[3] Order No. 890–B at P 15.

Department of Energy
Washington, DC 20585

WEATHERIZATION PROGRAM NOTICE 09-5
EFFECTIVE DATE: February 18, 2009

SUBJECT: 2009 POVERTY INCOME GUIDELINES AND DEFINITION OF INCOME

PURPOSE: To provide States with the 2009 Poverty Income Guidelines and Definition of Income for use in the Low-Income Weatherization Assistance Program (Weatherization).

SCOPE: The provisions of this guidance apply to all grantees applying for financial assistance under the Department of Energy (DOE) Weatherization Assistance Program.

LEGAL AUTHORITY: Title IV, Energy Conservation and Production Act, as amended, authorizes the Department of Energy to administer the Low-Income Weatherization Assistance Program. All grant awards made under this program shall comply with applicable law including regulations contained in 10 CFR Part 440 (issued February 1, 2002), the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, the American Recovery and Investment Act of 2009 and other procedures applicable to this regulation as DOE may, from time to-time, prescribe for the administration of financial assistance.

PROCEDURES: The American Recovery and Reinvestment Act of 2009, Public Law 111-005, signed by the President on February 17, 2009, raised the DOE Weatherization eligibility criterion by striking "150 percent" in both places it appears in Section 412(7) of the Energy Conservation and Production Act (42 U.S.C. 6862(7)) and inserting "200 percent." The annual revision of the poverty income guidelines was published in the **Federal Register**/Volume 74, Number 14/Friday, January 23, 2009, on pages 4200-4201. Attached is a table displaying the revised guidelines showing income eligibility limits at 200 percent of poverty. Guideline tables for Alaska and Hawaii are also included. These guidelines are effective as of January 23, 2009, and apply to both farm and non-farm families. States should distribute these tables immediately to their subgrantees for their use. Additionally, this notice provides grantees with a definition of income for use in the Weatherization Program. This definition is unchanged from the previous year's guidance. Clarifications on income and eligibility issues are discussed in the Program Year 2009 Weatherization Grant Guidance, in section 5.9, Determining Eligibility Levels and Defining Income, of WPN 09-1B.

Gilbert P. Sperling
Program Manager
Office of Weatherization and Intergovernmental Program
Energy Efficiency and Renewable Energy

Attachment

2009 POVERTY INCOME GUIDELINES
CONTIGUOUS U.S. GRANTEES
EFFECTIVE JANUARY 23, 2009

INCOME LEVELS

Size of Family Unit	**Threshold**	**200%**
1	$10,830	$21,660
2	14,570	29,140
3	18,310	36,620
4	22,050	44,100
5	25,790	51,580
6	29,530	59,060
7	33,270	66,540
8	37,010	74,020
Each additional member add	3,740	7,480

2009 POVERTY INCOME GUIDELINES
ALASKA
EFFECTIVE JANUARY 23, 2009

Size of Family Unit	**Threshold**	**200%**
1	$13,530	$27,060
2	18,210	$36,420
3	22,890	$45,780
4	27,570	$55,140
5	32,250	$64,500
6	36,930	$73,860
7	41,610	$83,220
8	46,290	$92,580
Each additional member add	4,680	$9,360

2009 POVERTY INCOME GUIDELINES
HAWAII
EFFECTIVE JANUARY 23, 2009

Size of Family Unit	**Threshold**	**200%**
1.....	$12,460	$24,920
2.....	16,760	33,520
3.....	21,060	42,120
4.....	25,360	50,720
5.....	29,660	59,320
6.....	33,960	67,920
7.....	38,260	76,520
8.....	42,560	85,120
Each additional member add	4,300	8,600

DEFINITION OF INCOME

Refers to total annual cash receipts before taxes from all sources, with the exceptions noted below. Income data for a part of a year may be annualized in order to determine eligibility--for example, by multiplying by four the amount of income received during the most recent three months. The method of calculation is to be determined by the Grantee. Grantees should have a consistent policy covering its subgrantees on re-certification of applicants whose eligibility may have changed due to the length of time that may have expired awaiting weatherization services.

INCOME INCLUDES: money, wages and salaries before any deductions; net receipts from non-farm or farm self-employment (receipts from a person's own business or from an owned or rented farm after deductions for business or farm expenses). **INCOME ALSO INCLUDES** regular payments from social security, railroad retirement, unemployment compensation, strike benefits from union funds, worker's compensation, veteran's payments, training stipends, alimony, and military family allotments; private pensions, government employee pensions (including military retirement pay), and regular insurance or annuity payments; dividends, interest, net rental income, net royalties, periodic receipts from estates or trusts, and net gambling or lottery winnings.

INCOME EXCLUDES capital gains; any assets drawn down as withdrawals from a bank, the sale of property, a house, or a car; one-time payments from a welfare agency to a family or person who is in temporary financial difficulty; tax refunds, gifts, loans, lump-sum inheritances, one-time insurance payments, or compensation for injury. **INCOME ALSO EXCLUDES** non-cash benefits, such as the employer-paid or union-paid portion of health insurance or other employee fringe benefits, food or housing received in lieu of wages, the value of food and fuel produced and consumed on farms, the imputed value of rent from owner-occupied non-farm or farm housing, and such Federal non-cash benefit programs as Medicare, Medicaid, Food Stamps, school lunches, housing assistance and combat zone pay to the military. Note: **CHILD SUPPORT PAYMENTS AND COLLEGE SCHOLARSHIPS ARE EXCLUDED.**

Department of Energy
Washington, DC 20585

WEATHERIZATION PROGRAM NOTICE 10-18
EFFECTIVE DATE: September 20, 2010

SUBJECT: 2010 POVERTY INCOME GUIDELINES AND DEFINITION OF INCOME

PURPOSE: To provide States with the 2010 Poverty Income Guidelines and Definition of Income for use in the Low-Income Weatherization Assistance Program (Weatherization).

SCOPE: The provisions of this guidance apply to all Grantees applying for financial assistance under the Department of Energy (DOE) Weatherization Assistance Program.

LEGAL AUTHORITY: Title IV, Energy Conservation and Production Act, as amended, authorizes the Department of Energy to administer the Low-Income Weatherization Assistance Program. All grant awards made under this Program shall comply with applicable law including regulations contained in 10 CFR Part 440 (issued February 1, 2002), the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, the American Recovery and Reinvestment Act of 2009 and other procedures applicable to this regulation.

BACKGROUND: Usually the Poverty Income Guidelines are published in late January to early February of the current year. However, this year legislation enacted in late 2009 and early 2010 prohibited publication of 2010 poverty guidelines before May 31, 2010, and required that the 2009 poverty guidelines remain in effect until publication of updated guidelines. The procedure for updating the 2010 guidelines was modified to take into account the Consumer Price Index (CPI-UP for the period for which their publication was delayed. As a result, the poverty guideline figures for the remainder of 2010 are the same as the 2009 poverty guideline figures.

PROCEDURES: The American Recovery and Reinvestment Act of 2009, Public Law 111-005, signed by the President on February 17, 2009, raised the DOE Weatherization eligibility criterion by striking "150 percent" in both places it appears in Section 412(7) of the Energy Conservation and Production Act (42 U.S.C. 6862(7)) and inserting "200 percent." The annual revision of the poverty income guidelines was published in the **Federal Register**/Volume 75, Number 148/Wednesday, August 3, 2010, pages 45628-45629. Attached is a table displaying the guidelines showing income eligibility limits at 200 percent of poverty. Guideline tables for Alaska and Hawaii are also included. These guidelines are effective as of August 3, 2010, and apply to both farm and non-farm families. States should distribute these tables immediately to their subgrantees for their use. Additionally, this notice provides grantees with a definition of income for use in the Weatherization Program. This definition is updated from the previous

year's guidance. Clarifications on income and eligibility issues are discussed in the Program Year 2010 Weatherization Grant Guidance, in section 5.9, Determining Eligibility Levels and Defining Income, of WPN-10-1.

Tobias Russell
Acting Program Manager
Office of Weatherization and Intergovernmental Program
Energy Efficiency and Renewable Energy

Attachment

DEFINITION OF INCOME

A. INCOME: Income means Cash Receipts earned and/or received by the applicant before taxes during applicable tax year(s) **but not** the Income Exclusions listed below in **Section C**.

B. CASH RECEIPTS: Cash Receipts include the following:

1. money, wages and salaries before any deductions;
2. net receipts from non-farm or farm self-employment (receipts from a person's own business or from an owned or rented farm after deductions for business or farm expenses);
3. regular payments from social security, railroad retirement, unemployment compensation, strike benefits from union funds, worker's compensation, veteran's payments, training stipends, alimony, and military family allotments;
4. private pensions, government employee pensions (including military retirement pay), and regular insurance or annuity payments;
5. dividends and/or interest;
6. net rental income and net royalties;
7. periodic receipts from estates or trusts; and
8. net gambling or lottery winnings.

C. INCOME EXCLUSIONS: The following Cash Receipts **are not** considered sources of Income for the purposes of determining applicant eligibility:

1. capital gains;
2. any assets drawn down as withdrawals from a bank;
3. money received from the sale of a property, house, or car;
4. one-time payments from a welfare agency to a family or person who is in temporary financial difficulty;
5. tax refunds;
6. gifts, loans, or lump-sum inheritances;
7. college scholarships;
8. one-time insurance payments, or compensation for injury;
9. non-cash benefits, such as the employer-paid or union-paid portion of health insurance;
10. employee fringe benefits, food or housing received in lieu of wages;
11. the value of food and fuel produced and consumed on farms;
12. the imputed value of rent from owner-occupied non-farm or farm housing;
13. Federal non-cash benefit programs such as Medicare, Medicaid, Food Stamps, school lunches, and housing assistance;
14. combat zone pay to the military; and
15. Child Support, as defined below in **Section E**.

D. **PROOF OF ELIGIBILITY**: Grantees and subgrantees are reminded that, to the maximum extent practicable, proof of income eligibility and the associated documentation should be included in the client file.

1. **Eligibility Determined by Outside Agency/Program:** If income eligibility is determined by an outside agency or program, i.e. Low-Income Home Energy Assistance Program (LIHEAP) or the U.S. Department of Housing and Urban Development (HUD), then copies of the eligibility documentation can be a statement of LIHEAP eligibility or a copy of the HUD building list, included in the client file.

2. **Self-Certification**: After all avenues of documenting income eligibility are exhausted, self-certification is allowable, but evidence of the various attempts at proving eligibility must be contained in the client file, **including** a notarized statement signed by the potential applicant indicating that he has no other proof of income.

E. **CHILD SUPPORT**: Child Support payments, whether received by the Payee or paid by the Payor, are not considered sources of Income for the purposes of determining applicant eligibility.

1. **Payee:** Where an applicant receives child support from any state program or individual during an applicable tax year, such assistance **is not** considered Income for the purposes of determining eligibility.

2. **Payor:** Where an applicant pays child support through a state program and/or to an individual, such assistance **is not** considered Income for the purposes of determining eligibility (i.e., where an applicant pays Child Support, he or she may not deduct said assistance for the purposes of determining eligibility).

F. **ANNUALIZATION OF INCOME**: Where an applicant receives Income for a part of the applicable tax year, their partial Income may be annualized to determine eligibility. (Example: Applicant A received income during January, February and March. The method of annualizing income to determine eligibility could be multiplied by four the amount of income received during those three months). The method of calculating annualization of Income is to be determined by the Grantee.

G. **RE-CERTIFICATION**: An applicant who is deemed ineligible based on Income may be re-certified **if** ineligibility is due to the length of time that expired while the applicant was waiting to receive weatherization services. As a reminder, re-certification of eligibility should occur at least every 12 months. The method of determining Re-Certification is to be determined by the Grantee.

HW-0478
REV 08/09

WEATHERIZATION ENERGY ASSISTANCE BLOCK GRANT
PARTICIPANT ASSESSMENT APPLICATION

Social Security Number:	CAP	SAT	Application Date:	(OFFICE USE ONLY) BENEFIT AMT $ DENIAL CODE
Last Name:	First Name:		M.I.:	
MAILING Address:				
City:	State:		Zip Code: -	
RESIDENT Address:				T O N E
City:	State:		Zip Code: -	
County:	Code:	Home Phone: ( )	Other Phone: ( )	
Vendor Code:	Fuel Supplier:		Account Number:	Consumption Cost: $

Household Members	Applicant				
Relationship	1				
Date of Birth					
Soc. Sec. Number					
Race					
Citizen					
Disabled					
Gender					
SSI					
Social Security					
TAFI					
Food Stamps					
Farm Worker					
Education					
Employment					
Veteran					
Health Insurance					
Homeless					

3 Month Total Gross Income: $ **Number in Household**: **Number in EA Household**:

Target: ☐YES ☐NO **Referral:** ☐YES ☐ NO **Referral Resource**:

1) Been Wx by Agency? 1. Y 2. N

2) Agree to Wx Audit? 1. Y 2. N

3) Living Arrangements
1. Own Home
2. Rent / Lease
3. Other

4) Heat Included in Rent? 1. Y 2. N

5) Rent Subsidized? 1. Y 2. N

6) Rent Amount? $

7) Energy Ed? 1. Y 2. N

8) Housing Type
1. Mobile Home
2. Single Family
3. Multi (1 - 3)
4. Multi (4 +)
5. Nursing Home
6. Homeless Shelter
7. Shelter / Group Home
8. Institution

9) Primary Heat
1. Oil / Propane
2. Natural Gas
3. Electricity
4. Wood

9a) Secondary Heat
1. Oil / Propane
2. Natural Gas
3. Electricity
4. Wood

10) Family Type
1. Sngl Parent / Female
2. Sngl Parent / Male
3. Two Parent HH
4. Sngl Person
5. Two Adult / no children
6. Grandparents / Grandchildren
7. Two Adult/Children
8. Other

9. Retirement Center 5. Coal 5. Coal

Approximate Age of Housing _____

SOURCE OF INCOME	**Applicant Income (3 months)**	**Spouse / Other Household Income (3 months)**	**3 MONTHS - TOTAL GROSS INCOME**
Employment	$	$	$
TAFI	$	$	$
SSI / AABD	$	$	$
Social Security	$	$	$
Self Employment	$	$	$
Disability Benefits	$	$	$
Unemployment Compensation	$	$	$
Child Support	$	$	$
Interest Income	$	$	$
Other (List: _____)	$	$	$
3 Months Total Gross Income	$	$	$
	3 MONTH TOTAL HOUSEHOLD GROSS INCOME		**$**

COMMENTS:	OTHER INFORMATION: Landlord: Address: Landlord Phone:

ZERO INCOME DECLARATION: I DECLARE THAT THE GROSS INCOME FOR MY HOUSEHOLD HAS BEEN ZERO THE PREVIOUS 3 MONTHS. I understand that willful misrepresentation and/or concealment of facts can result in criminal and civil penalties. My household basic living needs for the previous 3 months have been met by (Give brief explanation):

Shelter: _____ Food: _____ Utilities:

SIGNATURE:

OUTREACH / HOMEBOUND USE ONLY

I have personally reviewed the following household documentation as part of outreach intake: ☐ Employer Verification

☐ Wage Stubs ☐ DHW Notice ☐ Unemployment Compensation ☐ SS/SSI Verification ☐ Tax Records ☐ Other

I (we) certify that the information provided in this application is true and accurate. I give my permission to the Department to verify and/or release this information to any appropriate organization necessary to provide my household with assistance. I understand that willful misrepresentation and/or concealment of facts on this application can result in criminal and civil penalties.

Signature of Participant	Date
Signature of Agency Representative	Date

State of Idaho - Department of Health and Welfare

WEATHERIZATION ENERGY ASSISTANCE BLOCK GRANT PARTICIPANT ASSESSMENT APPLICATION

HW 0478

REVISED 09/2006

Social Security Number:	CAP	SAT	Application Date:	(OFFICE USE ONLY)
Last name:	First Name:		M.I.:	BENEFIT AMT $
MAILING Address:				DENIAL CODE
City:	State:		Zip Code: -	
RESIDENT Address:				
City:	State:		Zip Code: -	
County:	Code:	Home Phone: ( )	Other Phone: ( )	
Vendor Code:	Fuel Supplier:		Account Number:	

This eligibility notice is based on household information as stated on your Participant Assessment Application. Receipt of Services is contingent upon sufficient information and available resources. The participant information obtained from TAFI Assistance, Medicaid and Food Stamps was assessed solely to determine eligibility for these services. You may be subject to criminal penalties and your eligibility re-determined for misrepresentation and/or concealment of pertinent household facts.

DENIAL CODES

1. Your three month income exceeds the eligibility guidelines.
2. You are living in an ineligible institution.
3. You are living in subsidized housing and your heat is included in your rent payment.
4. You are not a legal U.S. resident.

****

SOUTHERN IDAHO COUNTIES	ADA, ELMORE and OWYHEE	BENEWAH, BONNER, BOUNDARY, KOOTENAI and SHOSHONE	CLEARWATER, IDAHO, LATAH, LEWIS and NEZ PERCE
Idaho Migrant Council 317 Happy Day Blvd., Suite 350 Caldwell, ID 83607 Phone: (208) 454-1652 Toll Free: 1-800-787-7863	El-Ada, Inc. 701 E. 44th St. #1 Boise, ID 83714 Phone: (208) 377-0700	Community Action Partnership 4942 Industrial Avenue East Coeur D'Alene, ID 83814 Phone: (208) 664-8757 Toll Free: 1-888-725-3663	Community Action Partnership 124 New 6th Street Lewiston, ID 83501 Phone: (208) 746-3351 Toll Free: 1-800-326-4843
CANYON, PAYETTE, ADAMS, GEM, BOISE, VALLEY and WASHINGTON	**PAYETTE**	**ADAMS, CANYON, GEM, BOISE, VALLEY and WASHINGTON**	**BLAINE, CAMAS, CASSIA, GOODING, JEROME, TWIN FALLS, LINCOLN and MINIDOKA**
Canyon County Organization on Aging 1614 Industrial Way, Suite 102 Caldwell, ID 83605 Wx Phone: (208) 459-0065	Western Idaho Community Action Partnership 215 S. Main Payette, ID 83661 Phone: (208) 642-4436 Toll Free: 1-800-870-2427	Western Idaho Community Action Partnership ADAMS (208) 253-4300 CANYON (208) 454-0675 GEM/BOISE (208) 365-3116 VALLEY (208) 382-4577 WASHINGTON(208) 549-2066	South Central Community Action Agency 550 Washington St. South P.O. Box 531 Twin Falls, ID 83303-0531 Phone: (208) 733-9351 Toll Free: 1-800-627-1733
BONNEVILLE, BUTTE, CLARK, FREMONT, JEFFERSON, MADISON and TETON	**LEMHI and CUSTER**	**BANNOCK, BINGHAM and POWER**	**FRANKLIN, BEAR LAKE, ONEIDA and CARIBOU**
Eastern Idaho Community Action Partnership 357 Constitution Way PO Box 51098 Idaho Falls, ID 83402 Phone: (208) 522-5391 Toll Free: 1-800-632-4813	Eastern Idaho Community Action Partnership 955 Riverfront Dr., Suite A Salmon, ID 83467 Phone: (208) 756-3999 Toll Free: 1-800-359-9163	Southeastern Idaho Community Action Agency 825 East Bridger Pocatello, ID 83201 BANNOCK (208) 232-1114 BINGHAM (208) 785-1583 POWER (208) 226-7330	Southeastern Idaho Community Action Agency 159 South Main, Room 102 P.O. Box 1002 Soda Springs, ID 83276 CARIBOU and BEAR LAKE (208) 547-4257 ONEIDA (208) 766-2737 FRANKLIN(208) 852-1515

NONDISCRIMINATION

If you believe you have been discriminated against because of race, color, sex, handicap, national origin, religious creed, political belief, you can file a complaint. Complaint forms are available from the address listed below or at the assistance provider listed above.

DEPARTMENT OF HEALTH AND WELFARE
CIVIL RIGHTS AFFIRMATIVE ACTION SECTION
P.O. BOX 83720
BOISE, ID 83720-0036

YOUR RIGHTS

If your application for assistance is denied, you will be notified in writing of the reason for the denial. If you are dissatisfied with this decision or feel you have been discriminated against in any way, you have thirty (30) days from the date the notice is mailed in which to request a fair hearing. If you file a fair hearing, you will have a right to find out if your eligibility for LOW INCOME ENERGY ASSISTANCE, WEATHERIZATION ASSISTANCE AND COMMUNITY SERVICES BLOCK GRANT was incorrectly determined according to State and Federal law and policy.

PRIVACY ACT AND INFORMATION RELEASE

Under Section 3(e)(3) of the Privacy Act of 1974, 5 U.S.C. 552 a(e)(3), each agency that maintains a system of records shall inform each individual from whom it solicits information of the authority which permits the solicitation of the information; whether disclosure is voluntary; the principal purpose for which the information is intended to be used; the routine uses which may be made of the information; and the consequences, if any, resulting from failure by the individual to provide the requested information. This statement is required by the Privacy Act to be furnished prior to the collection and use of the information requested. You may retain this statement for your records.

Authority: The specific authority for the maintenance of this report is in sections 416 and 417 of the Energy Conservation and Production Act, Pub. L. 94-385. These sections direct Federal and State agencies, which are sponsoring these programs, to monitor the effectiveness of the programs, and to require the local non-profit agency implementing the programs to keep records to enable program monitoring.

Your responses to the request for information are entirely voluntary, however should you decline to provide the information requested, you will not be considered for assistance.

I hereby give my permission for the release of any information regarding my energy fuel consumption and costs to a representative of the Department of Health and Welfare and/or non-profit agency or their designee.

I understand my information is used only to provide data for internal evaluation purposes and is held in accordance with DHW Confidentiality Regulations.

Participant Signature Date	**Agency Representative Date**

Address

Vendor Utility	**Billing Account Number**

HW-603
REV 09/10

State of Idaho
Weatherization Assistance Program
Owner and Renter Agreement

The parties to this agreement, being the occupant owner and/or being the owner or authorized assignee of a rental property (hereinafter referred to as OWNER) and/or being the occupant renter (hereinafter referred to as RENTER) of the property located at:

and

herby release and pledge to hold harmless the Weatherization Assistance Program and said AGENCY in the performance of weatherization activities, including any act or eventuality arising from work related to the project, and agree to the following:

1) OWNER and/or RENTER agrees that the AGENCY has permission to enter the above premises and is authorized to make all necessary weatherization repairs and improvements as determined by the Energy Audit performed by the AGENCY. The AGENCY agrees that the weatherization work deemed suitable for the property will be done according to the U.S. Department of Energy regulations.

2) OWNER and/or RENTER agree to authorize the utility and/or fuel supplier to provide information to the AGENCY regarding the quantity of fuel used at the above address. This information will only be used to determine the cost effectiveness of the weatherization improvements.

3) OWNER and/or RENTER, in consideration of the weatherization work to be performed, agree to the following:
   a) To accept the decision of the AGENCY regarding the work to be done on the property. Appeals regarding the work performed must be made within ninety (90) days of the completion date.
   b) To accept the responsibility for repairing and maintaining the property as improved including, but not limited to, maintaining and/or repairing the heating system (as to insure it is in safe, working order), water heater, roof, plumbing, windows, and doors.
   c) To assure that the materials installed will remain on the dwelling and a responsible person is at the property during the scheduled weatherization work.

4) There will be no charge to the OWNER and/or RENTER by the Weatherization Assistance Program for the materials installed and/or labor performed by AGENCY employees and/or subcontractors involved in the project. To ensure that weatherized rental benefits accrue primarily to low-income tenants, the OWNER agrees that rent on the unit will not be raised due to provision of weatherization measures/efficiency improvements for a period of one year.

5) There will be no direct or indirect expense to the OWNER for the work performed. No liens or encumbrances will be assigned to the property based on participation by the OWNER in the weatherization grant program. If the unit is a rental property, the OWNER is allowed to offer a voluntary contribution toward the cost of the project.

6) As the OWNER and/or RENTER of the above property, I understand that no undue or excessive enhancement will occur to the value of the dwelling as a result of the weatherization measures funded by the U.S. Department of Energy.

OWNER	DATE	RENTER	DATE
ADDRESS		ADDRESS	

PHONE

AGENCY REPRESENTATIVE

(Acceptance of the agreement does not guarantee dwelling eligibility)

EACR Funding Guidelines

Purpose

The purpose of the Low Income Home Energy Assistance Crisis (EACR) is to address and ameliorate energy issues which may pose health and/or safety risks to low-income households, particularly the elderly, disabled and households with small children.

Funding Uses

Direct Service Providers are expected to evaluate each household's situation,-extenuating circumstances, and other family or community resources that may be available to effectively alleviate the crisis at hand.

Examples of usage of EACR funding include deposits, reconnection fees, past due bills, including those bills that are at a previous address if they are preventing continued service that is critical to a participant's health and safety. The energy source does not have to be the same as the heat source. LIHEAP Managers refer high energy usage participants to the Weatherization Assistance Program for any mechanical measures involving the envelope of the participant's dwelling including, but not limited to, the following: furnace repair, furnace replacement, broken window repair, broken window replacement, bulk fuel tank setting fees, bulk fuel tank purchase, roofing repairs/replacement, cooling system repair, or cooling system replacement. It is the responsibility of the Weatherization Assistance Program to evaluate and assess the structure's needs. If the primary heat source has been addressed, the secondary heat source (i.e. wood stove) can be addressed only if the participant is using a secondary heat source that is causing a health and safety hazard to the participant and/or their household member(s).

Should the Weatherization Program be unable to assist a household with an emergent need involving mechanical issues within the appropriate crisis response time frame, they will communicate the need to the LIHEAP Manager. The two Managers shall work in concert to assess and address the needs of the household. The LIHEAP Manager can then approve LIHEAP-CR funds for this purpose. Reasons for this exception must be thoroughly documented, including reasoning for Weatherization Crisis funds not being used.

Funding Amount

The funding amount limit is $750 per household. If the circumstances require an expenditure of more than $750, the LIHEAP or WX Manager shall consult with CAPAI or the CERM staff if CAPAI is unavailable for any reason. Prior approval is needed for all expenditures over $750. Households can only apply for EACR funding once per calendar year.

Application Process

The HW 0478 will be used as the application for this program. Applications will be processed within 48 hours (18 hour if life threatening). If the participant has an application on file < 1 yr. old and information has not changed, the participant does not need to complete a new application. If the applicant has an open FS or TAFI case in EPICS, no application will be required for a crisis situation.

Participants requesting EACR funding assistance must provide the following at the time of application:

- Proof of household income for previous three months
- Names and birth dates of all household members
- Social Security Numbers for all household members- copies of cards are not required for participant file documentation

The current LIHEAP (WX for LPW CR) Program Guidelines also apply to this program, including income guidelines. A code will be used when entering into the CAPAI Database for this program which will be used to track program usage.

Reporting

Performance reports will be due 5 working days after the end of each month until funding is exhausted. The report must reconcile to the amount billed by the Direct Service Provider for reimbursement. The report form is attached.

EACR Funding Monthly Reporting Form

Name	Case #	Address	City	Zip Code	Utility	Account Number	Health/ Safety	Assistance Amount	Comments

EXHIBIT F

APPLICATION PRIORITY FORMULA

The priority Formula must be used to assign a priority rating to every eligible application immediately following the energy analysis. The rating will determine the scheduling for crew assignment. Numbers are to be assigned to the rating sheet according to the following formula.

AGE AND/OR INFIRMITY

None of the below	0
One or more children eighteen years or younger	1
One or more residents wither elderly or infirm	2
One or more residents both elderly and infirm	3

CONDITION OF HOME

Good Condition	-House is structurally sound, requiring minimal or no infiltration measures and/or repairs	0
Fair Condition	-House requiring minor infiltration measures and/or repair; partial window / door jam replacement; limited amount of envelope sealing; weatherstrip kits, etc	1
Poor Condition	-Definite structural deficiencies requiring considerable amount of infiltration measures and/or repairs; window / door replacements/ roof leaks; water damage due to leaking pipes; extensive envelop sealing, etc	2
Emergency	-Condition of home severe; adequate indoor temperatures are not maintainable during the heating season; possible health (hypothermia) risks to occupants	10

ANTICIPATED BENEFIT OF WEATHERIZATION

LC/NC -	Majority of energy savings is anticipated through client education; nature of possible weatherization measures and/or repair being limited, resulting in minimal reduction in energy consumption. Home will receive (low cost / no cost) weatherization	0
Combination of:	Client education; infiltration measures	1
	Client education; infiltration measures; one of the following measures (floor/duct wall - attic) insulation	2
	Client education; infiltration measures; two of the following measures (floor/duct wall - attic) insulation	3
	Client education; infiltration measures; three of the following measures (floor/duct wall - attic) insulation	4

Add one point when furnace modification or replacement reduces overall savings to investment ration (SIR).

HIGH ENERGY

BURDEN -	Client referral from LIHEAP -utility consumption is more than 15% of house hold income	10

FINANCIAL SITUATION

Under DOE guidelines, but above 100% poverty line	0
Below 100% poverty line, but above 75% of poverty line	1
Below 75% of poverty line	2

DATE OF VERIFICATION

1 - 60 Days	0
60 -90 Days	1
Over 90 Days	2

Period is measured from date of income verification to date the Energy Audit is complete and job is available to be assigned to production

ADDITIONAL POINTS

DATE OF AUDIT

Add one point for each month that job is held back after audit from production in favor of higher priority jobs.

LOCATION OF HOME
A lower priority job may be assigned in conjunction with a higher priority job located in the same area at the discretion of the program manager.

UTILITY/OTHER FUNDING HOME
Add five points when job receives an investment from a utility, landlord, or other sources such as housing rehabilitation funds.
Subtract five points when job does not receive an investment from the landlord.

CLIENT EDUCATION
Add one point when client receives an agency/utility structured Client Education Component.

After determining the number according to the formula for each category above, use the schedule to arrive at total points.

AGE &/OR INFIRMITY		0	1	2	3			
CONDITION OF HOME		0	1	2				
ANTICIPATED BENEFIT		0	1	2	3	4	5	10
FINANCIAL SITUATION		0	1	2				
DATE OF VERIFICATION		0	1	2				
ADDITIONAL POINTS	-5	0	1	2	3	4	5	10
TOTAL								

PRIORITY POINT RATING		
TOTAL POINTS	PRIORITY	RATING
10 PLUS	EMERGENCY	E
7 - 9	FIRST	1
4 - 6	SECOND	2
LESS THAN 3	THIRD	3

Place the priority number or letter E on the Energy Analysis and on the file folder for immediate reference.

Lead Based Paint Pre-Renovation Form

This form may be used by firms to document compliance with the requirements of the Federal Lead-Based Paint Renovation, Repair, and Painting Program.

Occupant Confirmation

Pamphlet Receipt

___ I have received a copy of the lead hazard information pamphlet informing me of the potential risk of the lead hazard exposure from renovation activity to be performed in my dwelling unit. I received this pamphlet before the work began.

Printed Name of Owner-occupant

Signature of Owner-occupant

Signature Date

Renovator's Self Certification Option (for tenant-occupied dwellings only)
Instructions to Renovator: If the lead hazard information pamphlet was delivered but a tenant signature was not obtainable, you may check the appropriate box below.

___ **Declined** – I certify that I have made a good faith effort to deliver the lead hazard information pamphlet to the rental dwelling unit listed below at the date and time indicated and that the occupant declined to sign the confirmation of receipt. I further certify that I have left a copy of the pamphlet at the unit with the occupant.

___ **Unavailable for signature** – I certify that I have made a good faith effort to deliver the lead hazard information pamphlet to the rental dwelling unit listed below and that the occupant was unavailable to sign the confirmation of receipt. I further certify that I have left a copy of the pamphlet at the unit by sliding it under the door or by (fill in how pamphlet was left).

Printed Name of Person Certifying Delivery

Attempted Delivery Date

Signature of Person Certifying Lead Pamphlet Delivery

Unit Address

Note Regarding Mailing Option — As an alternative to delivery in person, you may mail the lead hazard information pamphlet to the owner and/or tenant. Pamphlet must be mailed at least 7 days before renovation. Mailing must be documented by a certificate of mailing from the post office.

Lead Safe Renovation Verification Checklist

Name of Direct Service Provider: _____
Date and Location of Renovation: _____
Brief Description of Renovation: _____
Name of Assigned Renovator: _____
Name(s) of Trained Workers, if used: _____
Name of Dust Sampling Technician, Inspector, or Risk Assessor, if used: _____

- ☐ Copies of renovator and dust sampling technician qualifications (training certificates, certifications) on file.
- ☐ Certified renovator provided training to workers on (check all that apply):
  - ☐ Posting warning signs
  - ☐ Setting up plastic containment barriers
  - ☐ Maintaining containment
  - ☐ Avoiding spread of dust to adjacent areas
  - ☐ Waste handling
  - ☐ Post-renovation cleaning
- ☐ Test kits used by certified renovator to determine whether lead was present on components affected by renovation (identify kits used and describe sampling locations and results): _____
- ☐ Warning signs posted at entrance to work area.
- ☐ Work area contained to prevent spread of dust and debris
- ☐ All objects in the work area removed or covered (interiors)
- ☐ HVAC ducts in the work area closed and covered (interiors)
- ☐ Windows in the work area closed (interiors)
- ☐ Windows in and within 20 feet of the work area closed (exteriors)
- ☐ Doors in the work area closed and sealed (interiors)
- ☐ Doors in and within 20 feet of the work area closed and sealed (exteriors)
- ☐ Doors that must be used in the work area covered to allow passage but prevent spread of dust
- ☐ Floors in the work area covered with taped-down plastic (interiors)
- ☐ Ground covered by plastic extending 10 feet from work area—plastic anchored to building and weighted down by heavy objects (exteriors)
- ☐ If necessary, vertical containment installed to prevent migration of dust and debris to adjacent property (exteriors)
- ☐ Waste contained on-site and while being transported off-site
- ☐ Work site properly cleaned after renovation
- ☐ All chips and debris picked up, protective sheeting misted, folded dirty side inward, and taped for removal
- ☐ Work area surfaces and objects cleaned using HEPA vacuum and/or wet cloths or mops (interiors)
- ☐ Certified renovator performed post-renovation cleaning verification (describe results, including the number of wet and dry cloths used): _____
- ☐ If dust clearance testing was performed instead, attach a copy of report.
- ☐ I certify under penalty of law that the above information is true and complete.

_____ _____
Name and Title Date

STATE OF IDAHO
WEATHERIZATION ASSISTANCE PROGRAM
REQUEST FOR VARIANCE

Job number _____

Client name _____

Address _____

City _____

Agency requesting authorization for a capital intensive dwelling unit: _____

Attach copies of the computerized energy audit, job order sheet, and any other pertinent information, including bidding information for the heating system (replacement - modification).

Comments: _____

Auditor/Inspector	Date of Request
Weatherization Program Manager	Date Submitted
Energy Programs Coordinator	Date Approved

GUÍA DE PRÁCTICAS ACREDITADAS SEGURAS PARA TRABAJAR CON EL PLOMO PARA REMODELAR CORRECTAMENTE

EPA

1-800-424-LEAD (5323)
www.epa.gov/getleadsafe
EPA-740-K-10-002
April 2010

Información importante sobre el riesgo del plomo para familias, proveedores de cuidado infantil y escuelas

EPA

LEAD-SAFE EPA CERTIFIED FIRM

¡ES LA LEY!

La ley federal requiere que contratistas que alteran superficies pintadas en casas, instalaciones de cuidado infantil y escuelas construidas antes de 1978, sean acreditados y sigan prácticas de trabajo específicas para prevenir la contaminación causada por el plomo. Siempre pida ver la certificación de su contratista.

La ley federal requiere que los individuos reciban cierta información antes de remodelar más de seis pies cuadrados de superficies pintadas en una habitación para proyectos interiores o más de veinte pies cuadrados de superficies pintadas para proyectos exteriores o reemplazo de ventanas o demolición en viviendas, instalaciones de cuidado infantil y escuelas construidas antes de 1978.

- Propietarios de casas e inquilinos: los renovadores deben darle este folleto antes de empezar a trabajar.
- Instalaciones de cuidado infantil, incluyendo las aulas de escuelas preescolares y de kindergarten, y las familias de niños menores de seis años que asisten a esas instalaciones: los renovadores deben proveer una copia de este folleto a las instalaciones de cuidado infantil e información general de la remodelación a las familias de los niños que asisten a esas instalaciones.

¿QUIÉN DEBERÍA LEER ESTE FOLLETO?

Este folleto es para usted si usted:

- Reside en una casa construida antes de 1978.
- Es propietario u opera una instalación de cuidado infantil, incluyendo aulas preescolares y de kindergarten, construida antes de 1978, o
- Tiene un niño menor de seis años que asiste a una instalación de cuidado infantil construida antes de 1978.

Usted aprenderá:

- Datos básicos acerca del plomo y su salud.
- Cómo elegir a un contratista, si usted es el dueño de una propiedad.
- Lo que los inquilinos, y padres/tutores de un niño en una instalación de cuidado infantil o escuela deberían considerar.
- Cómo prepararse para el trabajo de renovación o reparación.
- Qué buscar durante el trabajo y después de que el trabajo esté completado.
- Dónde obtener más información acerca del plomo.

Este folleto no es para:

- **Proyectos de eliminación**. La eliminación es un conjunto de actividades dirigidas específicamente a eliminar el plomo o los riesgos del plomo. La EPA (Agencia de Protección Ambiental por sus siglas en inglés) tiene normas para la certificación y capacitación de profesionales en el campo de eliminación de plomo. Si su meta es eliminar el plomo o los riesgos del plomo, comuníquese con el Centro Nacional de Información sobre el Plomo (National Lead Information Center) al **1-800-424-LEAD (5323)** para mayor información.
- **Proyectos "Hágalo usted mismo"**. Si usted mismo planea hacer trabajos de remodelación, este documento es un buen inicio, pero usted necesitará más información para finalizar el trabajo con seguridad. Llame al Centro Nacional de Información sobre el Plomo (National Lead Information Center) al 1-800-424-LEAD (5323) y pida más información sobre cómo trabajar con seguridad en una casa con pintura a base de plomo.
- **Educación del contratista**. Los contratistas que quieran información acerca de cómo trabajar de una manera segura con el plomo deberán comunicarse con el Centro Nacional de Información sobre el Plomo (National Lead Information Center) al **1-800-424-LEAD (5323)** para información sobre cursos y recursos sobre prácticas seguras para trabajar con el plomo.

¿REMODELANDO, REPARANDO O PINTANDO?

- ¿Está siendo remodelada, reparada o pintada su casa, su edificio, o la instalación de cuidado infantil o escuela a la que asisten sus hijos?
- ¿Fue su casa, su edificio, o la instalación de cuidado infantil o escuela a la que asisten sus hijos menores de seis años, construida antes de 1978?

Si la respuesta a estas preguntas es SI, hay unas cuantas cosas importantes que usted necesita saber acerca de la pintura a base de plomo.

Este folleto proporciona datos básicos sobre el plomo e información acerca de seguridad contra el plomo cuando se está haciendo trabajo en su casa, su edificio o la instalación de cuidado infantil o escuela a la que asisten sus hijos.

La realidad acerca del plomo

- El plomo puede afectar al cerebro y sistema nervioso en desarrollo de los niños, causando un Coeficiente Intelectual (CI) reducido, discapacidades de aprendizaje y problemas de comportamiento. El plomo también es dañino para los adultos.
- El plomo en el polvo es la forma más común en que las personas son expuestas al plomo. El plomo puede entrar al cuerpo por diferentes mecanismos como ser por el plomo en la tierra o por la pintura descascarada o desconchada. El polvo de plomo es frecuentemente invisible.
- La pintura a base de plomo se usó en más de 38 millones de casas hasta que fue prohibida para uso residencial en 1978.
- Los proyectos que alteran la pintura a base de plomo pueden crear polvo y poner en peligro a usted y a su familia. No permita que esto le suceda. Siga las prácticas descritas en este folleto para protegerse usted y su familia.

EL PLOMO Y SU SALUD

El plomo es especialmente peligroso para niños menores de seis años de edad.

El plomo puede afectar al cerebro y sistema nervioso en desarrollo de los niños, causando:

- Coeficiente Intelectual (CI) reducido y discapacidades de aprendizaje.
- Problemas de comportamiento.

Aun los niños que parecen saludables pueden tener niveles de plomo peligrosos en sus cuerpos.

El plomo también es dañino para los adultos. En los adultos, niveles bajos de plomo pueden presentar muchos peligros, incluyendo:

- Presión de sangre alta e hipertensión.
- Las mujeres embarazadas expuestas al plomo pueden transferir el plomo a sus fetos. El plomo se introduce en el cuerpo cuando es tragado o inhalado.
- Las personas, especialmente los niños, pueden tragar polvo de plomo cuando comen, juegan, o hacen otras actividades en las cuales se llevan la mano a la boca.
- Las personas también pueden respirar polvo o gases de plomo si alteran la pintura a base de plomo. Las personas que lijan, raspan, queman, cepillan o aplican aire comprimido o alteran la pintura a base de plomo de alguna otra manera, se arriesgan a una exposición dañina al plomo.

¿Qué debo hacer si estoy preocupado por la exposición de mi familia al plomo?

- Llame a su departamento de salud local para asesoría sobre cómo reducir y eliminar exposiciones al plomo dentro y fuera de su casa, instalación de cuidado infantil o escuela.
- Siempre use prácticas seguras para trabajar con el plomo cuando la renovación o reparación alterarán la pintura a base de plomo.
- Un análisis de sangre es la única manera de averiguar si usted o un miembro de su familia ya tienen envenenamiento con plomo. Llame a su médico o a su departamento de salud local para tramitar un análisis de sangre.

Para mayor información acerca de los efectos a la salud por la exposición al plomo, visite el sitio Web del plomo de la EPA en **www.epa.gov/lead/pubs/leadinfo.htm** (en inglés) o al **http://www.epa.gov/lead/pubs/leadinfoesp.htm** (en español) o llame a al **1-800-424-LEAD (5323)**.

Hay otras cosas que usted puede hacer diariamente para proteger a su familia.

- Limpie regularmente los pisos, los marcos de las ventanas y otras superficies.
- Lave con frecuencia las manos, biberones, chupetes/chupones, y juguetes de los niños.
- Asegúrese de que los niños coman una dieta saludable y nutritiva, consistente con las normas dietéticas del USDA (Departamento de Agricultura de los Estados Unidos, por sus siglas en inglés), que ayuda a proteger a los niños de los efectos del plomo.

¿DE DÓNDE VIENE EL PLOMO?

El polvo es el problema principal.

La forma más común de que el plomo entre en el cuerpo es por el polvo. El polvo de plomo viene de la pintura a base de plomo, deteriorada o en proceso de deterioración y de tierra contaminada con plomo que llega a ser dejada en la casa por los zapatos y otros objetos. Este polvo puede acumularse hasta llegar a niveles peligrosos. Entonces, actividades normales donde se acostumbra llevar la mano a la boca, como jugar y comer (especialmente en niños pequeños), causan que el polvo de las superficies como los pisos y los marcos de las ventanas entre al cuerpo.

La remodelación de la casa crea polvo.

Las actividades comunes de remodelación como lijar, cortar y demoler pueden crear polvo, partículas y esquirlas de plomo.

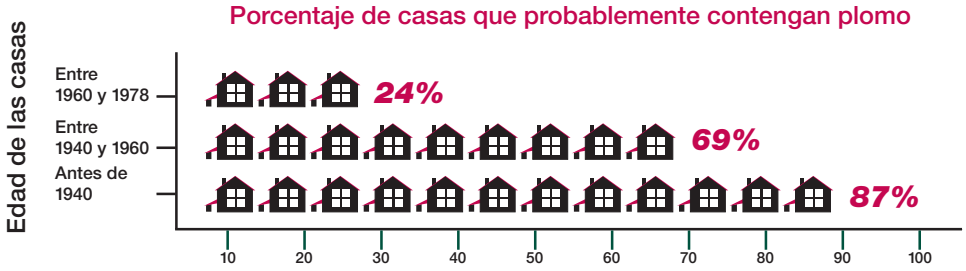
Las prácticas apropiadas de trabajo lo protegen del polvo.

La clave para protegerse usted mismo y a su familia durante una remodelación, reparación o trabajo de pintura es usar prácticas seguras para trabajar con el plomo, tales como contener el polvo dentro del área de trabajo, usando métodos de trabajo que minimicen el polvo y llevando a cabo una limpieza cuidadosa, como se describe en este folleto.

Otras fuentes de plomo.

Recuerde, el plomo también puede venir de la tierra de afuera, su agua, o artículos domésticos (tales como cerámica vidriada con plomo y cristal de plomo). Comuníquese con el Centro Nacional de Información sobre el Plomo (National Lead Information Center) al **1-800-424-LEAD (5323)** para mayor información sobre estas fuentes.

REVISANDO SU CASA POR PINTURA A BASE DE PLOMO



Las casas, instalaciones de cuidado infantil y escuelas de más edad tienen más probabilidad de contener pintura a base de plomo.

Las casas pueden ser casas unifamiliares o departamentos. Pueden ser privadas, asistidas por el gobierno o viviendas públicas. Las escuelas consisten de aulas preescolares y de kindergarten. Pueden ser urbanas, suburbanas, o rurales.

Usted tiene las siguientes opciones:

Usted puede decidir el asumir que su casa, instalación de cuidado infantil, o escuela contiene plomo. Especialmente en las casas y edificios más antiguos, usted puede simplemente querer asumir que la pintura a base de plomo está presente y seguir las prácticas seguras para trabajar con el plomo descritas en este folleto durante la remodelación, reparación, o trabajo de pintura.

Usted puede contratar a un profesional acreditado para verificar si hay pintura a base de plomo
Estos profesionales son asesores o inspectores de riesgo acreditados, y pueden determinar si su casa tiene plomo o riesgos causados por el plomo.

- Un inspector acreditado o asesor de riesgo puede llevar a cabo una inspección para decirle si su casa, o una porción de su casa, tiene pintura a base de plomo y dónde está ubicada. Esto le indicará las áreas de su casa donde las prácticas seguras para trabajar con el plomo son necesarias.
- Un asesor de riesgo acreditado puede llevar a cabo una evaluación de riesgo e informarle si su casa actualmente tiene algún riesgo de tener plomo causado por la pintura con plomo, polvo o tierra. El asesor de riesgo también puede decirle qué acciones tomar para tratar cualquier riesgo.
- Si necesita ayuda para encontrar un asesor o inspector de riesgo acreditado, llame al Centro Nacional de Información sobre el Plomo (National Lead Information Center) al **1-800-424-LEAD (5323)**.

Usted también puede contratar a un renovador acreditado para que analice las superficies o componentes alteradas para determinar si contienen plomo con un equipo de análisis de plomo. Los equipos de análisis deben estar aprobados por la EPA y están disponibles en las ferreterías. Incluyen instrucciones detalladas para su uso.

PARA DUEÑOS DE PROPIEDADES

Usted tiene la responsabilidad final por la seguridad de su familia, inquilinos, o niños bajo su cuidado.

Esto significa prepararse apropiadamente para la remodelación y mantener a las personas fuera del área de trabajo (ver página 8). También significa asegurarse de que el contratista use prácticas seguras para trabajar con el plomo

La ley federal requiere que los contratistas que lleven a cabo proyectos de remodelación, reparación y pintura que alteren la pintura a base de plomo en casas, instalaciones de cuidado infantil y escuelas construidas antes de 1978, estén acreditados y sigan prácticas de trabajo específicas para evitar la contaminación con plomo.

Asegúrese que su contratista esté acreditado, y que pueda explicar claramente los detalles del trabajo y cómo el contratista minimizará los riesgos del plomo durante el trabajo.

- Puede usted verificar si un contratista es acreditado, visitando la página web de la EPA en **www.epa.gov/getleadsafe** o llamando al Centro Nacional de Información sobre el Plomo (National Lead Information Center) al **1-800-424-LEAD (5323)**. También puede pedir ver una copia de la certificación de la compañía del contratista.
- Pregunte al contratista si está capacitado para llevar a cabo prácticas seguras para trabajar con el plomo y pida ver una copia de su certificado de capacitación.
- Pregúnteles qué métodos seguros para trabajar con el plomo usarán para configurar y llevar a cabo el trabajo en su casa, instalación de cuidado infantil o escuela.
- Pida referencias de al menos tres trabajos recientes de casas construidas antes de 1978, y hable con cada uno personalmente.

Siempre asegúrese de que el contrato sea claro acerca de cómo se configurará el trabajo, se llevará a cabo y se limpiará.

- Comparta los resultados de cualesquier análisis previo de plomo con el contratista.
- Usted debe especificar en el contrato que sigan las prácticas descritas en las páginas 9 y 10 de este folleto.
- El contrato debe especificar qué partes de su casa forman parte del área de trabajo y especificar que prácticas seguras para trabajar con el plomo deberán usarse en esas áreas. Recuerde, su contratista debe confinar el polvo y escombros al área de trabajo y debe minimizar el esparcir ese polvo a otras áreas de la casa.
- El contrato también debe especificar que el contratista limpie el área de trabajo, verifique que haya sido limpiada adecuadamente, y que vuelva a limpiarla si es necesario.

Si usted piensa que un trabajador no está haciendo lo que debe hacer o esta haciendo algo que no es seguro, usted debe:

- Dirigir al contratista a cumplir con los requerimientos de los reglamentos y del contrato.
- Llamar a su departamento de salud o construcción, o
- Llamar a la línea directa gratuita de la EPA **1-800-424 LEAD (5323)**.

Si su propiedad recibe asistencia de vivienda del HUD (Departamento de Vivienda y Desarrollo Urbano, por sus siglas en inglés) (o de una agencia estatal o local que use fondos de HUD), usted debe seguir los requerimientos más rigurosos de la Regla de HUD sobre seguridad en la vivienda con pintura a base de plomo (HUD's Lead-safe Housing Rule) y los que se describen en este folleto.

PARA INQUILINOS, Y FAMILIAS DE NIÑOS MENORES DE SEIS AÑOS EN INSTALACIONES DE CUIDADO INFANTIL Y ESCUELAS

Usted juega un papel importante en asegurarse del mayor nivel de seguridad para su familia.

Esto significa prepararse apropiadamente para la renovación y mantenerse fuera del área de trabajo (ver página 8).

La ley federal requiere que los contratistas que lleven a cabo proyectos de remodelación, reparación y pintura que alteren la pintura a base de plomo en casas, instalaciones de cuidado infantil y escuelas, construidas antes de 1978, frecuentadas por niños menores de 6 años, estén certificados y sigan prácticas laborales específicas para evitar la contaminación por el plomo.

La ley requiere que cualquier persona contratada para remodelar, reparar o hacer trabajo de preparación de pintado en una propiedad construida antes de 1978 siga los pasos descritos en las páginas 9 y 10 a menos que el área donde el trabajo será hecho no contenga pintura a base de plomo.

Si usted piensa que un trabajador no esta haciendo lo que debe hacer o está haciendo algo que no es seguro, usted debe:

- Comunicarse con su arrendador.
- Llamar a su departamento de salud o construcción, o
- Llamar a la línea directa gratuita de la EPA **1-800-424 LEAD (5323)**.

Si está usted preocupado acerca de los riesgos del plomo que quedaron después de que el trabajo haya sido concluido, puede verificar el trabajo usted mismo (ver página 10).

PREPARÁNDOSE PARA UNA REMODELACIÓN

Las áreas de trabajo no deben ser accesibles a los ocupantes mientras se lleva a cabo el trabajo.

Los cuartos o áreas donde se está llevando a cabo el trabajo pueden ser bloqueados o sellados con hojas de plástico para contener cualquier polvo que se genere. Por lo tanto, el área contenida no estará a su disposición hasta que el trabajo en ese cuarto o área esté completo, limpiado totalmente, y el contaminante haya sido extraído. Es posible que usted no tenga acceso a algunas áreas y debe planear de acuerdo a eso.

Puede que usted necesite:

- Una recámara, baño y arreglos de cocina alternos si el trabajo está ocurriendo en esas áreas de su casa.
- Un lugar seguro para las mascotas porque ellas también pueden ser envenenadas por el plomo y pueden llevar polvo de plomo a otras áreas de la casa.
- Un pasillo separado para el contratista desde el área de trabajo hacia afuera, para traer materiales dentro y fuera de la casa. Idealmente, no debe de ser a través de la misma entrada que usa su familia.
- Un lugar para almacenar sus muebles. Puede que tenga que mover sus muebles y pertenencias del área donde se está llevando a cabo el trabajo. Los artículos que no puedan moverse, como gabinetes, deben ser envueltos en plástico.
- Apagar los sistemas de calefacción y aire acondicionado con sistemas de aire forzado mientras se hace el trabajo. Esto evita que el polvo se esparza a través de las rejillas de ventilación desde el área de trabajo al resto de su casa. Considere cómo esto puede afectar sus disposiciones de vivienda.

Usted puede aún querer mudarse de su casa temporalmente mientras todo o parte del trabajo siga en continuación.

Puede que las instalaciones de cuidado infantil y escuelas quieran considerar acceso alterno para los niños a las instalaciones necesarias.

DURANTE EL TRABAJO

La ley Federal requiere que los contratistas que sean contratados para llevar a cabo proyectos de remodelación, reparación y pintura en casas, instalaciones de cuidado infantil y escuelas construidas antes de 1978, que alteren la pintura a base de plomo, estén acreditados y sigan prácticas de trabajo específicas para evitar la contaminación por el plomo.

Las prácticas laborales que los contratistas están requeridos a seguir, deben incluir los siguientes tres simples procedimientos:

1. **Contener el área de trabajo.** El área debe estar contenida para que el polvo y escombros no escapen de esa área. Deben ponerse letreros de advertencia, y se debe usar plástico u otro material impermeable y cinta adhesiva según sea apropiado para:
   - Cubrir los pisos y cualquier mueble que no pueda ser movido.
   - Sellar puertas y rejillas de ventilación del sistema de calefacción y enfriamiento.

Éstas ayudarán a prevenir a que el polvo o los escombros salgan del área de trabajo.

2. **Evite usar métodos de renovación que generan cantidades grandes de polvo contaminado con plomo.**
   Algunos métodos generan grandes cantidades de polvo contaminado con plomo y su uso está prohibido. Éstos son:

   - Quemar con llama abierta o usar una antorcha o soplete.
   - Lijar, moler, cepillar, usar un martillo escareador de agujas, o usar limpiadores de alta presión y equipo que no tengan una cubierta con accesorio de aspiración HEPA (filtro de aire de alta eficiencia para partículas suspendidas, por sus siglas en inglés).
   - Usar una pistola de calor a temperaturas mayores de 1100º F.

No hay forma de eliminar el polvo, pero algunos métodos hacen menos polvo que otros. Los contratistas pueden usar varios métodos para minimizar la generación de polvo, como por ejemplo, usar agua para rociar las áreas antes de lijar o raspar; cortar con una cuchilla u hoja la pintura que se haya secado sobre cualquier componente y luego jalar y separar los componentes en lugar de romperlos.

3. **Limpiar a fondo.** El área de trabajo debe ser limpiada diariamente para mantenerla tan limpia como sea posible. Cuando todo el trabajo esté completo, el área debe ser limpiada usando métodos especiales de limpieza antes de quitar cualquier plástico que aísle el área de trabajo del resto de la casa. Los métodos especiales de limpieza deben incluir:
   - Usar una aspiradora HEPA (filtro de aire de alta eficiencia para partículas suspendidas) para limpiar el polvo y escombros sobre todas las superficies, seguido por
   - Trapeado húmedo y enjuagar con bastante agua.

Cuando se haya terminado la limpieza final, mire a su alrededor. No debe quedar polvo, pedazos de pintura, o escombros en el área de trabajo. Si usted ve algo de polvo, cáscaras de pintura o escombros, el área debe ser limpiada nuevamente.

PARA DUEÑOS DE PROPIEDADES: DESPUÉS DE QUE EL TRABAJO ESTÉ COMPLETO

Cuando todo el trabajo esté terminado, usted querrá saber si su casa, instalación de cuidado infantil o escuela ha sido limpiada apropiadamente. He aquí algunas maneras de verificar.

Pregunte acerca de la verificación final de limpieza de su contratista. Recuerde, el polvo de plomo es frecuentemente invisible a simple vista. Puede estar presente aún si usted no puede verlo. El contratista debe usar paños de limpieza desechables para limpiar el suelo del área de trabajo y compararlos con una tarjeta de verificación de limpieza para determinar si el área de trabajo se limpió adecuadamente.

Para ordenar una tarjeta de verificación de limpieza e instrucciones detalladas visite el sitio Web de la EPA en **www.epa.gov/lead** o comuníquese con el Centro Nacional de Información sobre el Plomo (National Lead Information Center) al **1-800-424-LEAD (5323)** o visite su sitio Web en **www.epa.gov/lead/nlic.htm**.

Usted también puede elegir hacer un análisis de polvo de plomo. Dichos análisis se llevan a cabo utilizando un papel absorbente especial que se pasa por la superficie para recolectar una muestra de polvo. Estas muestras se mandan a un laboratorio de análisis para detectar si hay polvo de plomo presente.

- Usted puede especificar en su contrato que se haga un análisis de polvo de plomo. En ese caso, asegúrese de aclarar quién hará el análisis.
- El análisis debe ser hecho por un profesional que trabaja con plomo.

Si usted elige hacer el análisis, algunos laboratorios de plomo reconocidos por la EPA le enviarán un equipo que le permite recolectar muestras y enviarlas de regreso a laboratorio para análisis.

Comuníquese con el Centro Nacional de Información sobre el Plomo (National Lead Information Center) al **1-800-424-LEAD (5323)** para listas de profesionales calificados y laboratorios de plomo reconocidos por la EPA.

Si su casa, instalación de cuidado infantil o escuela no pasa el análisis del polvo, el área debe ser limpiada nuevamente y se debe hacer el análisis de polvo de plomo otra vez.

Cuando el proyecto se haga por contrato, es una buena idea especificar en el contrato que el contratista es responsable por volver a limpiar si es que la casa, instalación de cuidado infantil, o escuela no pasa el análisis.

PARA MAYOR INFORMACIÓN

Puede que usted necesite información adicional sobre cómo proteger a sus niños y a sí mismo mientras se está haciendo un trabajo en su casa, su edificio o instalación de cuidado infantil.

El Centro Nacional de Información sobre el Plomo (Nacional Lead Information Center) al **1-800-424-LEAD (5323)** o www.epa.gov/lead/nlic.htm puede informarle cómo ponerse en contacto con sus programas estatales, locales y/o tribales u obtener información general acerca de la prevención de envenenamiento por el plomo.

- Los programas estatales y tribales de prevención de envenenamiento por el plomo o de protección del medio ambiente pueden proporcionar información acerca de las normas del plomo y fuentes potenciales de ayuda financiera para reducir los riesgos del plomo. Si su gobierno estatal o local tiene requerimientos más estrictos que aquellos descritos en este folleto, usted debe seguir esos requerimientos.
- Los oficiales del código de construcción local pueden informarle acerca de los reglamentos que aplican al trabajo de renovación que usted está planeando.
- Los departamentos estatales, del condado, y locales de salud pueden proporcionarle información acerca de los programas locales, incluyendo asistencia para niños envenenados con plomo y consejo sobre maneras de hacer que su casa sea revisada para ver si contiene plomo.

El Centro Nacional de Información sobre el Plomo (Nacional Lead Information Center) puede también proporcionar una variedad de materiales de recursos, incluyendo las siguientes guías acerca de las prácticas laborales seguras para trabajar con la pintura a base de plomo. Muchos de estos materiales están también disponibles en español en: **http://www.epa.gov/lead/pubs/leadinfoesp.htm**

- Contratistas – Seguridad Contra el Plomo Durante la Renovación http://www.epa.gov/lead/pubs/contractor_brochuresp.pdf
- Déle a su niño la oportunidad de su vida – Mantenga a su hijo libre del plomo http://www.epa.gov/lead/pubs/chance_span.pdf
- El envenenamiento por el plomo y sus niños http://www.epa.gov/lead/pubs/lpandycs.pdf
- Proteja a su familia en contra del plomo en su casa http://www.epa.gov/lead/pubs/leadpdfs.pdf

También puede encontrar los siguientes recursos en inglés en: www.epa.gov/lead/pubs/brochure.htm

- Steps to Lead Safe Renovation, Repair and Painting
- Protect Your Family From Lead in Your Home
- Lead in Your Home: A Parent's Reference Guide

Para los afectados del oído, llame al Servicio Federal de Transmisión de Información (Federal Information Relay Service) al 1-800-877-8339 para tener acceso a cualquiera de los números de teléfono en este folleto.

CONTACTOS DE LA EPA

Oficinas Regionales de la EPA

La EPA trata los riesgos del plomo residencial a través de varias reglamentaciones diferentes.

La EPA requiere capacitación y certificación para llevar a cabo reducción, educación acerca de los riesgos asociados con las renovaciones, divulgación acerca de los riesgos conocidos acerca de la pintura a base de plomo y plomo en las viviendas, y fija los estándares del riesgo de la pintura a base de plomo.

Su Oficina Regional de la EPA puede proporcionar la mayor información con respecto a la seguridad del plomo y los programas de protección del plomo en **www.epa.gov/lead**.

Region 1
(Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont)
Regional Lead Contact
U.S. EPA Region 1
Suite 1100
One Congress Street
Boston, MA 02114-2023
(888) 372-7341

Region 2
(New Jersey, New York, Puerto Rico, Virgin Islands)
Regional Lead Contact
U.S. EPA Region 2
2890 Woodbridge Avenue
Building 205, Mail Stop 225
Edison, NJ 08837-3679
(732) 321-6671

Region 3
(Delaware, Maryland, Pennsylvania, Virginia, Washington, DC, West Virginia)
Regional Lead Contact
U.S. EPA Region 3
1650 Arch Street
Philadelphia, PA
19103-2029
(215) 814-5000

(Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee)
Regional Lead Contact
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-8960
(404) 562-9900

Region 5
(Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin)
Regional Lead Contact
U.S. EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3507
(312) 886-6003

Region 6
(Arkansas, Louisiana, New Mexico, Oklahoma, Texas)
Regional Lead Contact
U.S. EPA Region 6
1445 Ross Avenue,
12th Floor
Dallas, TX 75202-2733
(214) 665-6444

(Iowa, Kansas, Missouri, Nebraska)
Regional Lead Contact
U.S. EPA Region 7
901 N. 5th Street
Kansas City, KS 66101
(913) 551-7003

Region 8
(Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming)
Regional Lead Contact
U.S. EPA Region 8
1595 Wynkoop Street
Denver, CO 80202
(303) 312-6312

Region 9
(Arizona, California, Hawaii, Nevada)
Regional Lead Contact
U.S. Region 9
75 Hawthorne Street
San Francisco, CA 94105
(415) 947-8021

Region 10
(Alaska, Idaho, Oregon, Washington)
Regional Lead Contact
U.S. EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101-1128
(206) 553-1200

OTRAS AGENCIAS FEDERALES

CPSC (Comisión para la Seguridad de los Productos de Consumo, por sus siglas en inglés)

La Comisión para la Seguridad de los Productos de Consumo (CPSC por sus siglas en inglés) protege al público del riesgo irrazonable de lesión o muerte de 15,000 tipos de productos de consumo bajo la jurisdicción de la agencia. La CPSC advierte al público y los sectores privados reducir la exposición al plomo y aumentar la conciencia del consumidor. Comuníquese con la CPSC para mayor información con respecto a los reglamentos y seguridad del producto de consumo.

CPSC (Comisión para la Seguridad de los Productos de Consumo)
4330 East West Highway
Bethesda, MD 20814
Línea Directa Gratuita 1-(800) 638-2772
www.cpsc.gov

CDC (Los Centros para el Control y Prevención de Enfermedades, por sus siglas en inglés) División de Prevención de Envenenamiento por el Plomo en la Infancia

Los Centros para el Control y Prevención de Enfermedades (CDC por sus siglas en inglés) asisten a los programas estatales y locales de prevención de envenenamiento por el plomo en la infancia para proporcionar una base científica para decisiones de políticas, y para asegurar que los problemas de salud se traten en decisiones acerca de la vivienda y el ambiente. Comuníquese con el Programa de Prevención de Envenenamiento por el Plomo en la Infancia de CDC para materiales adicionales y enlaces sobre el tema del plomo.

CDC Childhood Lead Poisoning Prevention Branch
4770 Buford Highway, MS F-40
Atlanta, GA 30341
(770) 488-3300
www.cdc.gov/nceh/lead

HUD (Departamento de Vivienda y Desarrollo Urbano, por sus siglas en inglés) Oficina de Casas Saludables y Control del Riesgo de Plomo

El Departamento de Vivienda y Desarrollo Urbano (HUD por sus siglas en inglés) proporciona fondos a los gobiernos estatales y locales para desarrollar formas accesibles para reducir los riesgos de la pintura a base de plomo en las viviendas de propiedad privada de bajos ingresos. Además la oficina respalda la regla sobre la notificación de la presencia de pintura a base de plomo y/o peligros de la pintura a base de plomo en las viviendas, y los reglamentos de seguridad del plomo del HUD en viviendas asistidas por HUD También proporciona alcance público y asistencia técnica, y lleva a cabo estudios técnicos para ayudar a proteger a los niños y sus familias de riesgos de salud y seguridad en la casa. Comuníquese con la Oficina de Casas Saludables y Control del Riesgo del Plomo de HUD para información sobre los reglamentos del plomo, esfuerzos de alcance público, e investigación sobre el control del riesgo del plomo y programas de subvenciones de alcance público.

U.S. Department of Housing and Urban Development (Departamento de Vivienda y Desarrollo Urbano de los EE.UU.)
Office of Healthy Homes and Lead Hazard Control (Oficina de Casas Saludables y Control del Riesgo de Plomo)
451 Seventh Street, SW, Room 8236
Washington, DC 20410-3000
Línea Directa de Reglamentos de Plomo del HUD (202) 402-7698
www.hud.gov/offices/lead/

MUESTRA DEL FORMULARIO ACTUAL DE REMODELACIÓN PREVIA

Este formulario de muestra puede ser utilizado por compañías de renovación para documentar su cumplimiento con los reglamentos federales de educación antes de la renovación, y de la renovación, reparación y pintura.

Confirmación del Ocupante

Recibo del Folleto

❑ He recibido una copia del folleto, Remodelar correctamente: Información importante del riesgo del plomo para familias, proveedores de cuidado infantil y escuelas informándome del posible peligro por la exposición al riesgo del plomo que podría ser causado por la actividad de renovación que se llevará a cabo en mi unidad de vivienda. Recibí este folleto antes de que el trabajo empiece.

Nombre del dueño u ocupante en letra de imprenta

Firma del dueño u ocupante

Fecha firmada

Opción de auto-certificación del renovador (solamente para viviendas ocupadas por inquilinos)

Instrucciones para el renovador: Si el folleto acerca del plomo fue entregado pero no se pudo obtener la firma de un inquilino, usted puede marcar la casilla apropiada abajo.

❑ **Rehusó firmar** – Certifico que he hecho un esfuerzo de buena fe para entregar el folleto de información acerca de los peligros del plomo a la vivienda en alquiler listada abajo en la fecha y hora indicadas y que el ocupante se negó a firmar la confirmación de recibo. Además certifico que he dejado una copia del folleto en la unidad con el ocupante.

❑ **No estaba disponible para firmar** – Certifico que he hecho un esfuerzo de buena fe para entregar el folleto de información acerca de los peligros del plomo a la unidad en alquiler listada abajo y que el ocupante no estaba disponible para firmar la confirmación de recibo. Además certifico que he dejado una copia del folleto en la unidad deslizándola bajo la puerta o de la siguiente manera (escriba explicando como dejó el folleto).

Nombre de la persona certificando el intento de entrega en letra de imprenta

Fecha y hora de intento de entrega

Firma de la persona certificando la entrega del folleto acerca del plomo

Dirección de la unidad

Nota con respecto a la opción de enviar por correo — AComo alternativa a entregar en persona, usted puede enviar por correo el folleto acerca del plomo al propietario y/o inquilino. El folleto debe ser enviado por correo al menos 7 días antes de la renovación (Documento con un certificado de envío por correo de la oficina postal).

THE LEAD-SAFE CERTIFIED GUIDE TO RENOVATE RIGHT

Important lead hazard information for families, child care providers and schools.

EPA

LEAD-SAFE EPA CERTIFIED FIRM

EPA

1-800-424-LEAD (5323)
www.epa.gov/getleadsafe

EPA-740-K-10-001
April 2010

IT'S THE LAW!

Federal law requires contractors that disturb painted surfaces in homes, child care facilities and schools, built before 1978 to be certified and follow specific work practices to prevent lead contamination. Always ask to see your contractor's certification.

Federal law requires that individuals receive certain information before renovating more than six square feet of painted surfaces in a room for interior projects or more than twenty square feet of painted surfaces for exterior projects or window replacement or demolition in housing, child care facilities and schools built before 1978.

- Homeowners and tenants: renovators must give you this pamphlet before starting work.
- Child care facilities, including preschools and kindergarten classrooms, and the families of children under six years of age that attend those facilities: renovators must provide a copy of this pamphlet to child care facilities and general renovation information to families whose children attend those facilities.

WHO SHOULD READ THIS PAMPHLET?

This pamphlet is for you if you:

- Reside in a home built before 1978.
- Own or operate a child care facility, including preschools and kindergarten classrooms, built before 1978, or
- Have a child under six years of age who attends a child care facility built before 1978.

You will learn:

- Basic facts about lead and your health.
- How to choose a contractor, if you are a property owner.
- What tenants, and parents/guardians of a child in a child care facility or school should consider.
- How to prepare for the renovation or repair job.
- What to look for during the job and after the job is done.
- Where to get more information about lead.

This pamphlet is not for:

- **Abatement projects.** Abatement is a set of activities aimed specifically at eliminating lead or lead hazards. EPA has regulations for certification and training of abatement professionals. If your goal is to eliminate lead or lead hazards, contact the National Lead Information Center at **1-800-424-LEAD (5323)** for more information.
- **"Do-it-yourself"** projects. If you plan to do renovation work yourself, this document is a good start, but you will need more information to complete the work safely. Call the National Lead Information Center at **1-800-424-LEAD (5323)** and ask for more information on how to work safely in a home with lead-based paint.
- **Contractor education.** Contractors who want information about working safely with lead should contact the National Lead Information Center at **1-800-424-LEAD (5323)** for information about courses and resources on lead-safe work practices.

RENOVATING, REPAIRING, OR PAINTING?

- Is your home, your building, or the child care facility or school your children attend being renovated, repaired, or painted?
- Was your home, your building, or the child care facility or school where your children under six years of age attend built before 1978?

If the answer to these questions is YES, there are a few important things you need to know about lead-based paint.

This pamphlet provides basic facts about lead and information about lead safety when work is being done in your home, your building or the child care facility or school your children attend.

The Facts About Lead

- Lead can affect children's brains and developing nervous systems, causing reduced IQ, learning disabilities, and behavioral problems. Lead is also harmful to adults.
- Lead in dust is the most common way people are exposed to lead. People can also get lead in their bodies from lead in soil or paint chips. Lead dust is often invisible.
- Lead-based paint was used in more than 38 million homes until it was banned for residential use in 1978.
- Projects that disturb painted surfaces can create dust and endanger you and your family. Don't let this happen to you. Follow the practices described in this pamphlet to protect you and your family.

LEAD AND YOUR HEALTH

Lead is especially dangerous to children under six years of age.

Lead can affect children's brains and developing nervous systems, causing:

- Reduced IQ and learning disabilities.
- Behavior problems.

Even children who appear healthy can have dangerous levels of lead in their bodies.

Lead is also harmful to adults. In adults, low levels of lead can pose many dangers, including:

- High blood pressure and hypertension.
- Pregnant women exposed to lead can transfer lead to their fetuses. Lead gets into the body when it is swallowed or inhaled.
- People, especially children, can swallow lead dust as they eat, play, and do other normal hand-to-mouth activities.
- People may also breathe in lead dust or fumes if they disturb lead-based paint. People who sand, scrape, burn, brush or blast or otherwise disturb lead-based paint risk unsafe exposure to lead.

What should I do if I am concerned about my family's exposure to lead?

- Call your local health department for advice on reducing and eliminating exposures to lead inside and outside your home, child care facility or school.
- Always use lead-safe work practices when renovation or repair will disturb painted surfaces.
- A blood test is the only way to find out if you or a family member already has lead poisoning. Call your doctor or local health department to arrange for a blood test.

For more information about the health effects of exposure to lead, visit the EPA lead website at **www.epa.gov/lead/pubs/leadinfo.htm** or call **1-800-424-LEAD (5323)**.

There are other things you can do to protect your family every day.

- Regularly clean floors, window sills, and other surfaces.
- Wash children's hands, bottles, pacifiers, and toys often.
- Make sure children eat a healthy, nutritious diet consistent with the USDA's dietary guidelines, that helps protect children from the effects of lead.
- Wipe off shoes before entering house.

WHERE DOES THE LEAD COME FROM?

Dust is the main problem.

The most common way to get lead in the body is from dust. Lead dust comes from deteriorating lead-based paint and lead-contaminated soil that gets tracked into your home. This dust may accumulate to unsafe levels. Then, normal hand to-mouth activities, like playing and eating (especially in young children), move that dust from surfaces like floors and window sills into the body.

Home renovation creates dust.

Common renovation activities like sanding, cutting, and demolition can create hazardous lead dust and chips.

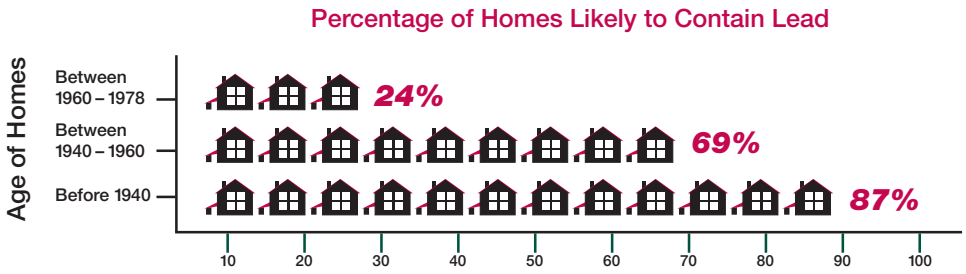
Proper work practices protect you from the dust.

The key to protecting yourself and your family during a renovation, repair or painting job is to use lead-safe work practices such as containing dust inside the work area, using dust-minimizing work methods, and conducting a careful cleanup, as described in this pamphlet.

Other sources of lead.

Remember, lead can also come from outside soil, your water, or household items (such as lead-glazed pottery and lead crystal). Contact the National Lead Information Center at **1-800-424-LEAD (5323)** for more information on these sources.

CHECKING YOUR HOME FOR LEAD-BASED PAINT



Older homes, child care facilities, and schools are more likely to contain lead-based paint.

Homes may be single-family homes or apartments. They may be private, government-assisted, or public housing. Schools are preschools and kindergarten classrooms. They may be urban, suburban, or rural.

You have the following options:

You may decide to assume your home, child care facility, or school contains lead. Especially in older homes and buildings, you may simply want to assume lead-based paint is present and follow the lead-safe work practices described in this brochure during the renovation, repair, or painting job.

You can hire a certified professional to check for lead-based paint. These professionals are certified risk assessors or inspectors, and can determine if your home has lead or lead hazards.

- A certified inspector or risk assessor can conduct an inspection telling you whether your home, or a portion of your home, has lead-based paint and where it is located. This will tell you the areas in your home where lead-safe work practices are needed.
- A certified risk assessor can conduct a risk assessment telling you if your home currently has any lead hazards from lead in paint, dust, or soil. The risk assessor can also tell you what actions to take to address any hazards.
- For help finding a certified risk assessor or inspector, call the National Lead Information Center at **1-800-424-LEAD (5323)**.

You may also have a certified renovator test the surfaces or components being disturbed for lead using a lead test kit. Test kits must be EPA-recognized and are available at hardware stores. They include detailed instructions for their use.

FOR PROPERTY OWNERS

You have the ultimate responsibility for the safety of your family, tenants, or children in your care.

This means properly preparing for the renovation and keeping persons out of the work area (see p. 8). It also means ensuring the contractor uses lead-safe work practices.

Federal law requires that contractors performing renovation, repair and painting projects that disturb painted surfaces in homes, child care facilities, and schools built before 1978 be certified and follow specific work practices to prevent lead contamination.

Make sure your contractor is certified, and can explain clearly the details of the job and how the contractor will minimize lead hazards during the work.

- You can verify that a contractor is certified by checking EPA's website at **epa.gov/getleadsafe** or by calling the National Lead Information Center at **1-800-424-LEAD (5323)**. You can also ask to see a copy of the contractor's firm certification.
- Ask if the contractor is trained to perform lead-safe work practices and to see a copy of their training certificate.
- Ask them what lead-safe methods they will use to set up and perform the job in your home, child care facility or school.
- Ask for references from at least three recent jobs involving homes built before 1978, and speak to each personally.

Always make sure the contract is clear about how the work will be set up, performed, and cleaned.

- Share the results of any previous lead tests with the contractor.
- You should specify in the contract that they follow the work practices described on pages 9 and 10 of this brochure.
- The contract should specify which parts of your home are part of the work area and specify which lead-safe work practices will be used in those areas. Remember, your contractor should confine dust and debris to the work area and should minimize spreading that dust to other areas of the home.
- The contract should also specify that the contractor will clean the work area, verify that it was cleaned adequately, and re-clean it if necessary.

If you think a worker is not doing what he is supposed to do or is doing something that is unsafe, you should:

- Direct the contractor to comply with regulatory and contract requirements.
- Call your local health or building department, or
- Call EPA's hotline **1-800-424-LEAD (5323)**.

If your property receives housing assistance from HUD (or a state or local agency that uses HUD funds), you must follow the requirements of HUD's Lead-Safe Housing Rule and the ones described in this pamphlet.

FOR TENANTS AND FAMILIES OF CHILDREN UNDER SIX YEARS OF AGE IN CHILD CARE FACILITIES AND SCHOOLS

You play an important role ensuring the ultimate safety of your family.

This means properly preparing for the renovation and staying out of the work area (see p. 8).

Federal law requires that contractors performing renovation, repair and painting projects that disturb painted surfaces in homes built before 1978 and in child care facilities and schools built before 1978, that a child under six years of age visits regularly, to be certified and follow specific work practices to prevent lead contamination.

The law requires anyone hired to renovate, repair, or do painting preparation work on a property built before 1978 to follow the steps described on pages 9 and 10 unless the area where the work will be done contains no lead-based paint.

If you think a worker is not doing what he is supposed to do or is doing something that is unsafe, you should:

- Contact your landlord.
- Call your local health or building department, or
- Call EPA's hotline **1-800-424-LEAD (5323)**.

If you are concerned about lead hazards left behind after the job is over, you can check the work yourself (see page 10).

PREPARING FOR A RENOVATION

The work areas should not be accessible to occupants while the work occurs.

The rooms or areas where work is being done may need to be blocked off or sealed with plastic sheeting to contain any dust that is generated. Therefore, the contained area may not be available to you until the work in that room or area is complete, cleaned thoroughly, and the containment has been removed. Because you may not have access to some areas during the renovation, you should plan accordingly.

You may need:

- Alternative bedroom, bathroom, and kitchen arrangements if work is occurring in those areas of your home.
- A safe place for pets because they too can be poisoned by lead and can track lead dust into other areas of the home.
- A separate pathway for the contractor from the work area to the outside in order to bring materials in and out of the home. Ideally, it should not be through the same entrance that your family uses.
- A place to store your furniture. All furniture and belongings may have to be moved from the work area while the work is being done. Items that can't be moved, such as cabinets, should be wrapped in plastic.
- To turn off forced-air heating and air conditioning systems while the work is being done. This prevents dust from spreading through vents from the work area to the rest of your home. Consider how this may affect your living arrangements.

You may even want to move out of your home temporarily while all or part of the work is being done.

Child care facilities and schools may want to consider alternative accommodations for children and access to necessary facilities.

DURING THE WORK

Federal law requires contractors that are hired to perform renovation, repair and painting projects in homes, child care facilities, and schools built before 1978 that disturb painted surfaces to be certified and follow specific work practices to prevent lead contamination.

The work practices the contractor must follow include these three simple procedures, described below:

1. **Contain the work area.** The area must be contained so that dust and debris do not escape from that area. Warning signs must be put up and plastic or other impermeable material and tape must be used as appropriate to:
   - Cover the floors and any furniture that cannot be moved.
   - Seal off doors and heating and cooling system vents.

These will help prevent dust or debris from getting outside the work area.

2. **Avoid renovation methods that generate large amounts of lead-contaminated dust.** Some methods generate so much lead-contaminated dust that their use is prohibited. They are:
   - Open flame burning or torching.
   - Sanding, grinding, planing, needle gunning, or blasting with power tools and equipment not equipped with a shroud and HEPA vacuum attachment.
   - Using a heat gun at temperatures greater than 1100°F.

There is no way to eliminate dust, but some renovation methods make less dust than others. Contractors may choose to use various methods to minimize dust generation, including using water to mist areas before sanding or scraping; scoring paint before separating components; and prying and pulling apart components instead of breaking them.

3. **Clean up thoroughly.** The work area should be cleaned up daily to keep it as clean as possible. When all the work is done, the area must be cleaned up using special cleaning methods before taking down any plastic that isolates the work area from the rest of the home. The special cleaning methods should include:
   - Using a HEPA vacuum to clean up dust and debris on all surfaces, followed by
   - Wet wiping and wet mopping with plenty of rinse water.

When the final cleaning is done, look around. There should be no dust, paint chips, or debris in the work area. If you see any dust, paint chips, or debris, the area must be re-cleaned.

FOR PROPERTY OWNERS: AFTER THE WORK IS DONE

When all the work is finished, you will want to know if your home, child care facility, or school has been cleaned up properly. Here are some ways to check.

Ask about your contractor's final cleanup check. Remember, lead dust is often invisible to the naked eye. It may still be present even if you cannot see it. The contractor must use disposable cleaning cloths to wipe the floor of the work area and compare them to a cleaning verification card to determine if the work area was adequately cleaned.

To order a cleaning verification card and detailed instructions visit the EPA lead website at **www.epa.gov/lead** or contact the National Lead Information Center at **1-800-424-LEAD (5323)** or visit their website at **www.epa.gov/lead/nlic.htm**.

You also may choose to have a lead-dust test. Lead-dust tests are wipe samples sent to a laboratory for analysis.

- You should specify in your contract that a lead-dust test will be done. In this case, make it clear who will do the testing.
- Testing should be done by a lead professional.

If you choose to do the testing, some EPA-recognized lead laboratories will send you a kit that allows you to collect samples and send them back to the lab for analysis.

Contact the National Lead Information Center at **1-800-424-LEAD (5323)** for lists of qualified professionals and EPA-recognized lead labs.

If your home, child care facility, or school fails the dust test, the area should be re-cleaned and tested again.

Where the project is done by contract, it is a good idea to specify in the contract that the contractor is responsible for re-cleaning if the home, child care facility, or school fails the test.

FOR ADDITIONAL INFORMATION

You may need additional information on how to protect yourself and your children while a job is going on in your home, your building, or child care facility.

The National Lead Information Center at **1-800-424-LEAD (5323)** or **www.epa.gov/lead/nlic.htm** can tell you how to contact your state, local, and/or tribal programs or get general information about lead poisoning prevention.

- State and tribal lead poisoning prevention or environmental protection programs can provide information about lead regulations and potential sources of financial aid for reducing lead hazards. If your state or local government has requirements more stringent than those described in this pamphlet, you must follow those requirements.
- Local building code officials can tell you the regulations that apply to the renovation work that you are planning.
- State, county, and local health departments can provide information about local programs, including assistance for lead-poisoned children and advice on ways to get your home checked for lead.

The National Lead Information Center can also provide a variety of resource materials, including the following guides to lead-safe work practices. Many of these materials are also available at **www.epa.gov/lead/pubs/brochure.htm**.

- Steps to Lead Safe Renovation, Repair and Painting.
- Protect Your Family from Lead in Your Home
- Lead in Your Home: A Parent's Reference Guide

For the hearing impaired, call the Federal Information Relay Service at 1-800-877-8339 to access any of the phone numbers in this brochure.

EPA CONTACTS

EPA Regional Offices

EPA addresses residential lead hazards through several different regulations. EPA requires training and certification for conducting abatement and renovations, education about hazards associated with renovations, disclosure about known lead paint and lead hazards in housing, and sets lead-paint hazard standards.

Your Regional EPA Office can provide further information regarding lead safety and lead protection programs at **epa.gov/lead**.

Region 1
(Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont)
Regional Lead Contact
U.S. EPA Region 1
Suite 1100
One Congress Street
Boston, MA 02114-2023
(888) 372-7341

Region 2
(New Jersey, New York, Puerto Rico, Virgin Islands)
Regional Lead Contact
U.S. EPA Region 2
2890 Woodbridge Avenue
Building 205, Mail Stop 225
Edison, NJ 08837-3679
(732) 321-6671

Region 3
(Delaware, Maryland, Pennsylvania, Virginia, Washington, DC, West Virginia)
Regional Lead Contact
U.S. EPA Region 3
1650 Arch Street
Philadelphia, PA
19103-2029
(215) 814-5000

Region 4
(Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee)
Regional Lead Contact
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-8960
(404) 562-9900

Region 5
(Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin)
Regional Lead Contact
U.S. EPA Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3507
(312) 886-6003

Region 6
(Arkansas, Louisiana, New Mexico, Oklahoma, Texas)
Regional Lead Contact
U.S. EPA Region 6
1445 Ross Avenue,
12th Floor
Dallas, TX 75202-2733
(214) 665-6444

Region 7
(Iowa, Kansas, Missouri, Nebraska)
Regional Lead Contact
U.S. EPA Region 7
901 N. 5th Street
Kansas City, KS 66101
(913) 551-7003

Region 8
(Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming)
Regional Lead Contact
U.S. EPA Region 8
1595 Wynkoop Street
Denver, CO 80202
(303) 312-6312

Region 9
(Arizona, California, Hawaii, Nevada)
Regional Lead Contact
U.S. Region 9
75 Hawthorne Street
San Francisco, CA 94105
(415) 947-8021

Region 10
(Alaska, Idaho, Oregon, Washington)
Regional Lead Contact
U.S. EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101-1128
(206) 553-1200

OTHER FEDERAL AGENCIES

CPSC

The Consumer Product Safety Commission (CPSC) protects the public from the unreasonable risk of injury or death from 15,000 types of consumer products under the agency's jurisdiction. CPSC warns the public and private sectors to reduce exposure to lead and increase consumer awareness. Contact CPSC for further information regarding regulations and consumer product safety.

CPSC
4330 East West Highway
Bethesda, MD 20814
Hotline 1-(800) 638-2772
www.cpsc.gov

CDC Childhood Lead Poisoning Prevention Branch

The Centers for Disease Control and Prevention (CDC) assists state and local childhood lead poisoning prevention programs to provide a scientific basis for policy decisions, and to ensure that health issues are addressed in decisions about housing and the environment. Contact CDC Childhood Lead Poisoning Prevention Program for additional materials and links on the topic of lead.

CDC Childhood Lead Poisoning Prevention Branch
4770 Buford Highway, MS F-40
Atlanta, GA 30341
(770) 488-3300
www.cdc.gov/nceh/lead

HUD Office of Healthy Homes and Lead Hazard Control

The Department of Housing and Urban Development (HUD) provides funds to state and local governments to develop cost-effective ways to reduce lead-based paint hazards in America's privately-owned low-income housing. In addition, the office enforces the rule on disclosure of known lead paint and lead hazards in housing, and HUD's lead safety regulations in HUD-assisted housing, provides public outreach and technical assistance, and conducts technical studies to help protect children and their families from health and safety hazards in the home. Contact the HUD Office of Healthy Homes and Lead Hazard Control for information on lead regulations, outreach efforts, and lead hazard control research and outreach grant programs.

U.S. Department of Housing and Urban Development
Office of Healthy Homes and Lead Hazard Control
451 Seventh Street, SW, Room 8236
Washington, DC 20410-3000
HUD's Lead Regulations Hotline
(202) 402-7698
www.hud.gov/offices/lead/

SAMPLE PRE-RENOVATION FORM

This sample form may be used by renovation firms to document compliance with the Federal pre-renovation education and renovation, repair, and painting regulations.

Occupant Confirmation

Pamphlet Receipt

❑ I have received a copy of the lead hazard information pamphlet informing me of the potential risk of the lead hazard exposure from renovation activity to be performed in my dwelling unit. I received this pamphlet before the work began.

Printed Name of Owner-occupant

Signature of Owner-occupant | Signature Date

Renovator's Self Certification Option (for tenant-occupied dwellings only)

Instructions to Renovator: If the lead hazard information pamphlet was delivered but a tenant signature was not obtainable, you may check the appropriate box below.

❑ **Declined** – I certify that I have made a good faith effort to deliver the lead hazard information pamphlet to the rental dwelling unit listed below at the date and time indicated and that the occupant declined to sign the confirmation of receipt. I further certify that I have left a copy of the pamphlet at the unit with the occupant.

❑ **Unavailable for signature** – I certify that I have made a good faith effort to deliver the lead hazard information pamphlet to the rental dwelling unit listed below and that the occupant was unavailable to sign the confirmation of receipt. I further certify that I have left a copy of the pamphlet at the unit by sliding it under the door or by (fill in how pamphlet was left).

Printed Name of Person Certifying Delivery | Attempted Delivery Date

Signature of Person Certifying Lead Pamphlet Delivery

Unit Address

Note Regarding Mailing Option — As an alternative to delivery in person, you may mail the lead hazard information pamphlet to the owner and/or tenant. Pamphlet must be mailed at least seven days before renovation. Mailing must be documented by a certificate of mailing from the post office.

Dear: _____ Date: _____
Address:_____

Recently a member of our agency weatherization staff inspected your home. At that time conditions were noted that would make it difficult to weatherize your home. These conditions are checked below:

1. ☐ Structurally unsound dwelling.
2. ☐ Evidence of substantial, persistent infestation of rodents, insects, or other harmful/objectionable animals that are difficult to control.
3. ☐ Electrical or plumbing hazards that cannot be resolved prior to or as part of weatherization services.
4. ☐ The presence of raw sewage around or in any part of the dwelling.
5. ☐ Environments hazards such as serious moisture problems, friable asbestos, or other hazardous materials, which cannot be resolved prior to or as part of weatherization services.
6. ☐ The presence of a dead animal, or animal feces, in any area of the dwelling where program staff must install weatherization measures.
7. ☐ Excessive debris build up in and around the dwelling which limits the program staff access to the dwelling.
8. ☐ Maintenance and housekeeping practices that are negligent to the point of limiting access of program staff to the dwelling.
9. ☐ An apparent threat of violence or abuse to any program staff member, or any household member, during the weatherization process.
10. ☐ The presence and/or use of any controlled substance in the swelling during the weatherization process.
11. ☐ Structurally unsound dwelling or dwelling in which the cost of repairs substantially exceeds the cost of the weatherization conservation measures.
12. ☐ Major remodeling is in progress, limiting the proper completion of weatherization measures.
13. ☐ Substantial amount of standing water in or around the crawl space or basement area limiting the proper completion of weatherization measures.
14. ☐ Proposed weatherization conservation measures will result in minimal energy savings and the cost of installing these measures have a savings-to-investment ratio of less than on (1).
15. ☐ Uncooperative property owner or tenant who refuses a weatherization measure, or refuses to make modifications necessary to permit a measure to be completed.
16. ☐ Other: _____

The policy of the State of Idaho Weatherization Assistance Program and _____ is to provide weatherization services in a safe and effective manner, without undue hazards to household members, our staff, or contractors. Given the conditions noted above, the staff is not able to provide you with weatherization services until the attached conditions are resolved.

Please contact the agency at _____ when the attached conditions are resolved. If you believe a mistake has been made in the determination, please contact the agency as soon as possible.

Sincerely,

Weatherization Program Manager

Weatherization Assistance Program - State of Idaho - Job Order Sheet
Ver. E44.4d3 release date 04/07/2006

First Name	
Last Name	
Address	
City	
State	
Zip Code	
County	
Home Phone	
Work Phone	
Landlord Phone	

Condition of Building	
Age of Home	
Dwelling Type	
Owner or Rental	
Dwelling Sq. Ft.	
Attic Sq. Ft.	
Basement Sq. Ft.	
Crawl Space Sq. Ft.	
Slab on Grade Ln. Ft.	

Volume	
Elevation	
HDD	
Design Temp.	
Number Stories	
Exposure Factor	
Utility Job	
Utility Name	
Private Investment	
Private Name	

Job #	
Job Priority	
Energy Auditor	
Crew Leader	
Inspector	
Intake	
Estimated	
Job Started	
Job Completed	
Job Inspected	
Job Submitted	

	Line No.	Area	Exist.	Prop.	Estimated Materials	Est. Material	Contract Est. Labor	Required Materials	Act. Material	Contract Act. Labor	Instructions
Windows	Labor M-14										
replacement	1										
	2										
	3										
	4										
	5										
storm	6										
	7										
	8										
	9										
replacement - labor	10										
	11										
	12										
storm - labor	13										
	14										
	15										
	16										
	17										
Replacement Doors	Labor 4-6										
Front											
Rear											
Side											
Wall Insulation	Labor 5-7										

Job #

Line No.	Area	Exist.	Prop.	Estimated Materials	Est. Material	Contract Est. Labor	Required Materials	Act. Material	Contract Act. Labor	Instructions

Attic insulation / Venting Labor 4.6

Venting Sq. Feet

Venting Labor 2

Floor insulation Labor 4.6

light

open

conc.

light

open

open

Infiltration Labor 2

CFM50 Readings Exist. Calc'd. Prop.

Cap/comp Actual Cert. Result, No

Duct Insulation Labor 3 Linear Feet

supply

return

cond.

Job #

	Line No.	Estimated Materials	Est. Material	Contract Est. Labor	Required Materials	Act. Material	Contract Act. Labor	Instructions
Health & Safety	Labor 1							
Other Investment	Labor 2							
Water Heater	Labor 2-3							
Repair								
Replacement								
Pipes	Labor 3	Linear Feet						
	Insulated							
	Cond.							
	Insulated							
Refrigerator Replacement								
Furnace	Labor 1-4							
Turnout								
Heat Pump								
Repair								
Replacement		Health & Safety						
CFLs		Number Installed						
Electric Rate for CFLs (only)								
			0.00	0.00	Sub Totals	0.00	0.00	

last revised 04/07/2006

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	Pre	Post
Water Heater Amps. (1, 2)		
Gas WH CO ppm (cond.)		
Gas WH Flue Draft (cond.)		
Electric Furnace Amps. (1, 2)		
Electric Furnace Amps. (3, 4)		
Electric Furnace Amps. (5, 6)		
Thermostat Anticipator		
Conditioned Area CO ppm		
Combustion Furnace CO ppm		
Combustion Furnace Flue Draft		
Net Stack Temp. (F) - Ambient		
Percentage Oxygen reading (%)		
Tested Seasonal Efficiency Rate (%)		
Est. Seasonal Efficiency Rate (%)		
BTU Input of Furnace		
Combustion Appliance CO ppm		
Open Comb. Appliance Input BTUs		
Combustion Appliance Venting?		
Water Heater Temperature		

Primary Heating System

Other:

Secondary Heating System

Other:

Cooling System

Water Heater Type

Number in House

Water Heater Diameter (in.)

Water Heater Height (in.)

Water Heater Fuel Unit Price

Date

Primary Heating Fuel

Primary Fuel Unit Price

Utility (if not Utility Job)

Account Number

Actual Energy Used

Secondary Heating Fuel

Actual Material Costs

0.00 Weatherization
0.00 Assist.
0.00 EPA
0.00 Idaho Power
0.00 Private
0.00 SBP

0.00 Total

Audit/Support Hours

Actual Hours

Client Income

Weatherization Representative Signature ▶

U Value/ F Value Charts

U-Value of Above Grade Walls

Exterior Siding Material		INSULATION (Rated Values of Batts, Etc)					INSULATION Nominal Value of Exterior Sheathing (Uninsulated Cavity)		INSULATION Nominal Value of Exterior Sheathing (Insulated Cavity)		Blown Wall Insulation Nominal Value
		R0	R4	R7	R11	R19	R8	R16	R8	R16	R11
Frame Wall	Board Siding	0.217	0.124	0.098	0.083	0.054	0.078	0.05	0.049	0.036	0.095
	Plywood Siding	0.291	0.144	0.11	0.092	0.058	0.087	0.054	0.052	0.038	0.11
	Shingles (wd, al, vinyl, ca)	0.186	0.113	0.091	0.078	0.052	0.074	0.048	0.047	0.035	0.087
	Stucco	0.257	0.136	0.105	0.088	0.057	0.087	0.053	0.052	0.038	0.104
	Brick Veneer	0.194	0.116	0.093	0.079	0.053	0.081	0.051	0.05	0.037	0.089
	Partition to buffer space	0.234	0.141	0.107	0.083	0.053	0.08	0.019	0.048	0.035	0.098
Other	Concrete blk, exposed	0.537	0.168	0.116	0.082	0.055	0.108	0.061			
	concrete, solid, exposed	0.671	0.18	0.122	0.085	0.056	0.112	0.062			
	logs, solid whole	0.103	0.072	0.06	0.049	0.038	0.056	0.04			

U-Values for Residential Ceilings

Ceiling Material And Conditions			Insulation (Rated Value of Batts, Etc.)										
			R0	R2	R4	R7	R11	R15	R19	R24	R30	R38	R49
Attic	Gyp Brd/Plaster		0.353	0.21	0.148	0.108	0.083	0.069	0.06	0.048	0.04	0.036	0.03
	Ceiling Cable		0.529	0.295	0.199	0.142	0.104	0.087	0.075	0.061	0.05	0.044	0.035
	Acoustic Ceiling Tile		0.229	0.154	0.122	0.093	0.072	0.061	0.053	0.044	0.038	0.034	0.028
No Attic	Gyp Brd/Plaster		0.293	0.183	0.134	0.097	0.072	0.058	0.049	0.041	0.035	0.028	-
	Ceiling Cable		0.44	0.255	0.177	0.122	0.089	0.072	0.059	0.049	0.041	0.031	-
	Acoustic Ceiling Tile		0.202	0.144	0.112	0.086	0.065	0.053	0.046	0.038	0.033	0.025	-
	Exposed Wood Deck	Wood Shingles	0.258	0.158	0.12	0.088	0.065	0.053	0.046	0.037	0.03	-	-
		Built-Up Roof	0.317	0.197	0.139	0.094	0.068	0.055	0.048	0.038	0.031	-	-

Floor U-Values

Vented Crawl Space Condition		Insulation (Rated Values of Batts, Etc.)					
		R0	R4	R7	R11	R19	R30
No Ducts		0.142	0.091	0.072	0.057	0.041	0.031
With Ducts	No Duct Insulation	0.115	0.075	0.06	0.048	0.035	0.026
	With Duct Insulation	0.131	0.086	0.069	0.055	0.04	0.03

Values for Windows & Sliding Glass Doors

Window Type	Frame Type		
	Wood	Metal	Thermally Improved Metal
Single Glass	0.96	1.1	1.01
Single Glass Plus Storm Window*	0.48	0.66	0.57
Insulating Glass, Double:			
1/4" air space	0.55	0.71	0.66
3/8" air space	0.51	0.66	0.6
1/2" air space	0.47	0.61	0.54
Insulating Glass, Triple:			
1/4" air space	0.37	0.57	0.47
3/8" air space	0.34	0.51	0.42
1/2" air space	0.3	0.45	0.37

F-Values for Below Grade Floors & Walls (Heated Basement)

Heat Loss by Perimeter Length (BTUH/*F/Ft.)***					
Depth Below Grade in Feet	Wall Insulation (Floor Uninsulated)				
	R0	R4	R7	R11	R19
1'	0.84	0.58	0.54	0.51	0.48
2'	0.97	0.61	0.54	0.48	0.43
3'	1.06	0.65	0.56	0.48	0.41
4'	1.14	0.7	0.59	0.5	0.41
5'	1.22	0.76	0.64	0.54	0.43
6'	1.28	0.82	0.69	0.58	0.45
7'	1.34	0.87	0.73	0.61	0.48

Duct Losses per Lineal Foot

Rated Value of Duct Insulation	R0	R2	R4	R7	R9	R11	R19
kWh/ft.	18.8	9.2	4.3	2.8	2	1.7	1.2

	Exterior Wall Insulation To 2-Feet Below Grade			
	R0	R4	R8	R10
F-Value (BTUH/*F/Ft)	1.28	0.92	0.82	0.79

Hydronic Pipe Losses per Lineal Foot

Nominal Value of Pipe Insulation	R0	R4
kWh/ft.	2.2	0.94

Concrete Slab Floor on Grade

F-Value (BTUH/*F/Ft)	Perimeter Slab Insulation		
	None	1"	2"
	0.81	0.62	0.55

U-Values for Exterior Doors		
Door Type		U-Value
Wood*	Without Storm Door	0.46
	With Storm Door	0.31
	Door to Buffer Space	0.41
	Door w/Storm to Buffer	0.28
French Doors	Without Storm Door	0.61
	With Storm Door	0.34
Metal Foam Core	Without Storm Door	0.14
	With Storm Door	0.12
	Door to Buffer Space	0.13

Charts provided courtesy of Bruce Manclark and Delta T, Inc.

HW-0406
REV 06/09

State of Idaho

Department of Health and Welfare

FAIR HEARING REQUEST

Return to:

PART 1 - I disagree with the Department's decision on my assistance as described below:

Mark type of assistance:

- ☐ Temporary Assistance for Families in Idaho
- ☐ Food Stamps
- ☐ JSAP
- ☐ Aid to the Aged, Blind, and Disabled
- ☐ Medical Assistance
- ☐ ICCP
- ☐ Regional Medicaid Unit Decision
- ☐ Emergency Medical Coverage
- ☐ ITSAP
- ☐ Energy Assistance
- ☐ Other _____

Mark action you disagree with:

- ☐ Application denied
- ☐ Benefit reduced
- ☐ Benefit stopped
- ☐ Service denied
- ☐ Service reduced
- ☐ Service stopped
- ☐ Other (explain) _____

Part 2 - Why do you disagree with the Department's action?

_____

Part 3 - Continuation of Benefits **Please read *carefully* and check one of the boxes below.**

☐	I want to continue receiving my current benefits until the hearing. I understand I will have to repay the value of the extra benefits received if the hearing officer agrees with the Department's action. This overpayment may be recovered by a reduction in my Food Stamp benefits, if the hearing office agrees with a Food Stamp decision.
☐	I do not want to continue receiving the benefits I now receive until the hearing. If the hearing officer does not agree with the Department's action, I will then receive any benefits to which I am entitled.

NOTE: ***Mail this Fair Hearing Request to the above address. Keep a copy for yourself. (SEE OTHER SIDE)***

Name _____	SS# _____	Phone _____	
Street Address _____	City _____	State _____	Zip _____
Signature (Participant or Authorized representative) _____		Date _____	

For Office Use Only

Date Rec'd in FO _____	Date rec'd at DHW Legal _____	Hearing Request Number _____

How to Get Free Legal Help:

If you request a fair hearing, you are entitled to have an attorney or another representative help you at the hearing. If you cannot afford an attorney, you may be eligible for free legal help from Idaho Legal Aid Services, Inc. The telephone number is listed in the telephone book. Your case worker can help you find the number.

Field Office Conference

You are encouraged to ask for an informal meeting with a representative in your local assistance office before or after you request this fair hearing. This conference is to try to resolve your case by reviewing the facts, regulations, and circumstances of the decision you are questioning.

If the decision was wrong, it will be corrected as the result of this meeting. If you are not satisfied with the results of the informal meeting, you may proceed with the fair hearing.

A field office conference is optional and in no way delays or replaces your fair hearing.

Return the original page of the Fair Hearing Request to the office which issues your benefits or provides your service. Keep the yellow copy for your records.

Combustion Safety Test Procedure for Vented Appliances

1. **Measure the Base Pressure.** Start with all exterior doors and windows closed and the fireplace damper closed. Set all combustion appliances to the pilot setting or turn off the service disconnect. Combustion appliances include: boiler, furnace, space-heaters, and water heater. With the home in this configuration, measure and record the baseline pressure of the mechanical room WRT outside.
2. **Establish the Worst Case.** Turn on the dryer and all exhaust fans. Close all interior doors that make the CAZ pressure more negative. Turn on the air handler, if present, and leave on if the pressure in the CAZ becomes more negative, then recheck the door positions. Measure the net change in pressure from the CAZ to outside, correcting for the base pressure. Record the "worst case depressurization" and compare to the CAZ Depressurization Limit Table.
3. **Measure Worst Case Spillage, Draft, CO.** Fire the appliance with the smallest Btu capacity first, test for spillage at the draft diverter with a mirror or smoke test, and test for the CO at the flue at steady-state (if steady state is not achieved within 10 minutes, take the CO readings at the 10 minute mark). If the spillage test fails under worst case, go to Step 4. If spillage ends within 1 minute, test the draft in the connector 1' - 2' after the diverter or first elbow. Fire all other connected appliances simultaneously and test the draft diverter of each appliance for spillage. Test for CO in all appliances before the draft diverter.
4. **Measure Spillage, Draft, CO under Natural Conditions.** If spillage fails under worst case, turn off the appliance, the exhaust fans, open the interior doors and allow the vent to cool before re-testing. Test for CO, spillage, and draft under "natural conditions." Measure the net change in pressure from worst case to natural in the CAZ to confirm the "worst case depressurization" taken in Step 2 outside. Repeat the process for each appliance, allowing the vent to cool between tests.
5. **Ambient CO.** Monitor the ambient CO in the breathing zone during the test procedure and abort the test if ambient CO goes over 35 ppm. Turn off the appliance, ventilate the space, and evacuate the building. The building may be reentered once ambient CO levels have gone below 35 ppm. The appliance must be repaired and the problem corrected prior to completing the combustion safety diagnostics. If the ambient levels exceed 35 ppm during testing under natural conditions, disable the appliance and instruct the homeowner to have the appliance repaired prior to operating it again.
6. **Action Levels.** Make recommendations or complete work order for repairs based on test results and the Combustion Safety Test Action Level Tables.

Note: Continually monitor ambient CO levels during test

Ranges and Ovens:

1. Remove any items/foil in or on oven/range top
2. Make sure self-cleaning features are not activated
3. Test oven in vent sleeve, before dilution air
4. **100 ppm to 300 ppm** as measured you must install a carbon monoxide detector and recommendation for service must be made to the participant.

Greater than 300 ppm as measured—the unit must be serviced prior to work. If greater than 300 ppm after servicing, exhaust ventilation must be provided with a capacity of 25 CFM continuous or 100 CFM intermittent.

Combustion Safety Test Action Levels

CO Test Results	And/Or	Spillage and Draft Test Results	Retrofit Action
0 – 25 ppm	And	Passes	Proceed with work
26 – 100 ppm	And	Passes	Recommend that the CO problem be fixed
101-400 ppm	And	Fails at worst case only	**Stop work**: Work may not proceed until that system is serviced and the problem is corrected
400>	And	Passes	**Stop work**: Work may not proceed until that system is serviced and the problem is corrected
400>	And	Fails under any condition	**Emergency:** Shut off fuel to appliance and have the homeowner call for service immediately

CAZ Depressurization Limits

Venting Condition	Limit (Pascals)
Orphan Natural draft water heater (including outside chimneys)	-2
Natural draft boiler or furnace commonly vented with water heater	-3
Natural draft boiler or furnace with damper commonly vented with water heater	-5
Individual natural draft boiler or furnace	-5
Induced draft boiler or furnace commonly vented with water heater	-5
Power vented or induced draft boiler or furnace alone, or fan assisted DHW alone	-15
Chimney-top draft inducer; exhausto type or equivalent; high static pressure flame retention head oil burner; direct vented appliances; sealed combustion appliances	-50

Documentation: Document the test results on the JOS. Include the proposed work information when caz pressure is not within acceptable standards.

Acceptable Appliance Spillage Periods

Appliance Type	Spillage Test Period (Minutes)
Water Heater, Gravity Furnace, Boiler	1.0
Space Heater	1.0
Forced Air Furnace	1.0

Documentation: Document the test results on the JOS. Include the proposed work information when spillage is not within acceptable standards.

Acceptable Draft Test Ranges

Outside Temperature (Fahrenheit)	Draft Pressure Standard (Pascals)
<10	-2.5
10 - 90	-2.75
>90	-.5

Documentation: Document the test results on the JOS. Include the proposed work information when draft is not within acceptable standards.

Net Stack Temperature and Oxygen Percentage

Net Stack Temperature: The temperature reading is usually displayed as gross stack temperature. Subtract the ambient air temperature form the gross stack temperature to calculate the net stack temperature.

Oxygen Percentage: The tester will display the percentage of oxygen in the flue gases.

Atmospheric Gas Fired Burners/Fan Assist

Oxygen Percentage 7% to 9%

Stack Temperature (F) 325 – 500

Gas Fired Power Burners

Oxygen Percentage 3% to 6%

Stack Temperature (F) 275 - 500

Oil Fired Power Burners

Oxygen Percentage	4% to 7%
Stack Temperature (F)	325 – 600

Documentation: Document the oxygen percentage and net stack temperature on the JOS. Include the proposed work information when the net stack temperature is outside of acceptable limits.

Combustion Efficiency Chart for Natural Gas

Power Burner

Excess Air	% O_2	% CO_2	Net Stack Temperature — Degrees Fahrenheit										
			300	320	340	360	380	400	420	440	460	480	500
9.5	2.0	10.7	83.1	82.6	82.2	81.7	81.2	80.8	80.3	79.8	79.4	78.9	78.4
12.1	2.5	10.4	83.0	82.5	82.0	81.5	81.1	80.6	80.1	79.6	79.1	78.7	78.2
15.0	3.0	10.1	82.8	82.3	81.8	81.4	80.9	80.4	79.9	79.4	78.9	78.4	77.9
18.0	3.5	9.8	82.6	82.2	81.7	81.2	80.7	80.2	79.7	79.2	78.7	78.2	77.6
21.1	4.0	9.6	82.5	82.0	81.5	81.0	80.5	79.9	79.4	78.9	78.4	77.9	77.4
24.5	4.5	9.3	82.3	81.1	81.3	80.8	80.2	79.7	79.2	78.7	78.1	77.6	77.1
28.1	5.0	9.0	82.1	81.6	81.1	80.5	80.0	79.5	78.9	78.4	77.8	77.3	76.7
31.9	5.5	8.7	81.9	81.4	80.8	80.3	79.7	79.2	78.6	78.1	77.5	77.0	76.4
35.9	6.0	8.4	81.7	81.1	80.6	80.0	79.5	78.9	78.3	77.8	77.2	76.6	76.0
40.3	6.5	8.2	81.5	80.9	80.3	79.7	79.2	78.6	78.0	77.4	76.8	76.2	75.6
44.9	7.0	7.9	81.2	80.6	80.0	79.4	78.8	78.2	77.6	77.0	76.4	75.8	75.2

Combustion Efficiency Chart for Natural Gas, Continued

Atmospheric Burner

Excess Air	% O_2	% CO_2	Net Stack Temperature — Degrees Fahrenheit										
			300	320	340	360	380	400	420	440	460	480	500
28.1	5.0	9.0	82.1	81.6	81.1	80.5	80.0	79.5	78.9	78.4	77.8	77.3	76.7
31.9	5.5	8.7	81.9	81.4	80.8	80.3	79.7	79.2	78.6	78.1	77.5	77.0	76.4
35.9	6.0	8.4	81.7	81.1	80.6	80.0	79.5	78.9	78.3	77.8	77.2	76.6	76.0
40.3	6.5	8.2	81.5	80.9	80.3	79.7	79.2	78.6	78.0	77.4	76.8	76.2	75.6
44.9	7.0	7.9	81.2	80.6	80.0	79.4	78.8	78.2	77.6	77.0	76.4	75.8	75.2
49.9	7.5	7.6	80.9	80.3	79.7	79.1	78.5	77.9	77.3	76.7	76.0	75.4	74.8
55.3	8.0	7.3	80.7	80.0	79.4	78.8	78.1	77.5	76.9	76.2	75.6	74.9	74.3
61.1	8.5	7.0	80.4	79.7	79.1	78.4	77.8	77.1	76.4	75.8	75.1	74.4	73.8
67.3	9.0	6.7	80.0	79.3	78.7	78.0	77.3	76.6	76.0	75.3	74.6	73.9	73.2

IDAHO WEATHERIZATION OPERATION MANUAL

Combustion Efficiency Chart for #2 Fuel Oil

Flame Retention Burner

Excess Air	% O_2	% CO_2	Net Stack Temperature — Degrees Fahrenheit										
			320	340	360	380	400	420	440	460	480	500	520
15.6	3.0	13.4	86.7	86.2	85.8	85.3	84.8	84.3	83.9	83.4	82.9	82.4	82.0
18.7	3.5	13.0	86.5	86.0	85.6	85.1	84.6	84.1	83.6	83.1	82.7	82.2	81.7
22.0	4.0	12.6	86.3	85.8	85.3	84.9	84.4	83.9	83.4	82.9	82.4	81.9	81.4
25.5	4.5	12.3	86.1	85.6	85.1	84.6	84.1	83.6	83.1	82.6	82.1	81.6	81.0
29.2	5.0	11.9	85.9	85.4	84.9	84.4	83.9	83.3	82.9	82.3	81.8	81.2	80.7
33.2	5.5	11.5	85.7	85.2	84.6	84.1	83.6	83.0	82.5	82.0	81.4	80.9	80.3
37.4	6.0	11.1	85.5	84.9	84.4	83.8	83.3	82.7	82.2	81.6	81.1	80.5	79.9
41.9	6.5	10.8	85.2	84.6	84.1	83.5	83.0	82.4	81.8	81.3	80.7	80.1	79.5
46.8	7.0	10.4	84.9	84.4	83.8	83.2	82.6	82.0	81.5	80.9	80.3	79.7	79.1

Combustion Efficiency Chart for #2 Fuel Oil, Continued

Conventional Style Burner

Excess Air	% O_2	% CO_2	Net Stack Temperature — Degrees Fahrenheit										
			320	340	360	380	400	420	440	460	480	500	520
46.8	7.0	10.4	84.9	84.4	83.8	83.2	82.6	82.0	81.5	80.9	80.3	79.7	79.1
52.0	7.5	10.0	84.6	84.1	83.5	82.9	82.3	81.7	81.0	80.4	79.8	79.2	78.6
57.6	8.0	9.7	84.3	83.7	83.1	82.5	81.9	81.2	80.6	80.0	79.4	78.7	78.1
63.3	8.5	9.3	84.0	83.4	82.7	82.1	81.4	80.8	80.1	79.5	78.8	78.2	77.5
70.2	9.0	8.9	83.6	83.0	82.3	81.6	81.0	80.3	79.6	79.0	78.3	77.6	76.9

Combustion Efficiency Chart for #4 Fuel Oil

Excess Air	% O_2	% CO_2	Net Stack Temperature — Degrees Fahrenheit										
			320	340	360	380	400	420	440	460	480	500	520
15.7	3.0	13.9	87.3	86.8	86.4	85.9	85.4	85.0	84.5	84.0	83.6	83.1	82.6
18.9	3.5	13.5	87.1	86.7	86.2	85.7	85.2	84.7	84.3	83.8	83.3	82.8	82.3
22.2	4.0	13.1	86.9	86.5	86.0	85.5	85.0	84.5	84.0	83.5	83.0	82.5	82.0
25.7	4.5	12.7	86.7	86.3	85.8	85.2	84.7	84.2	83.7	83.2	82.7	82.2	81.7
29.5	5.0	12.3	86.5	86.0	85.5	85.0	84.5	84.0	83.4	82.9	82.4	81.9	81.3
33.4	5.5	11.9	86.3	85.8	85.3	84.7	84.2	83.7	83.1	82.6	82.0	81.5	81.0
37.7	6.0	11.6	86.1	85.5	85.0	84.4	83.9	83.3	82.8	82.2	81.7	81.1	80.6
42.3	6.5	11.2	85.8	85.3	84.7	84.1	83.6	83.0	82.4	81.9	81.3	80.7	80.1
47.1	7.0	10.8	85.5	85.0	84.4	83.8	83.2	82.7	82.1	81.5	80.9	80.3	79.7

Combustion Efficiency Chart for #6 Fuel Oil

Excess Air	% O_2	% CO_2	Net Stack Temperature — Degrees Fahrenheit										
			320	340	360	380	400	420	440	460	480	500	520
15.8	3.0	14.1	87.5	87.0	86.5	86.1	85.6	85.1	84.6	84.1	83.7	83.2	82.7
18.9	3.5	13.7	87.3	86.8	86.3	85.8	85.4	84.9	84.4	83.9	83.4	82.9	82.4
22.3	4.0	13.3	87.1	86.6	86.1	85.6	85.1	84.6	84.1	83.6	83.1	82.6	82.1
25.8	4.5	13.0	86.9	86.4	85.9	85.4	84.9	84.3	83.8	83.3	82.8	82.3	81.7
29.6	5.0	12.6	86.7	86.2	85.6	85.1	84.6	84.1	83.5	83.0	82.5	81.9	81.4
33.6	5.5	12.2	86.5	85.9	85.4	84.8	84.3	83.8	83.2	82.7	82.1	81.6	81.0
37.9	6.0	11.8	86.2	85.7	85.1	84.6	84.0	83.4	82.9	82.3	81.8	81.2	80.6
42.4	6.5	11.4	85.9	85.4	84.8	84.2	83.7	83.1	82.5	81.9	81.4	80.8	80.2
47.3	7.0	11.0	85.7	85.1	84.5	83.9	83.3	82.7	82.1	81.5	80.9	80.3	79.7

IDAHO WEATHERIZATION OPERATION MANUAL

Combustion Efficiency Chart for L.P. Gas

Power Burner

Excess Air	% O_2	% CO_2	Net Stack Temperature — Degrees Fahrenheit										
			300	320	340	360	380	400	420	440	460	480	500
9.6	2.0	12.5	85.5	85.1	84.6	84.2	83.7	83.3	82.2	82.4	81.9	81.5	81.0
12.4	2.5	12.1	85.4	84.9	84.5	84.0	83.6	83.1	82.6	82.2	81.7	81.2	80.8
15.3	3.0	11.8	85.2	84.8	84.3	83.8	83.4	82.9	82.4	81.9	81.5	81.0	80.5
18.3	3.5	11.5	85.1	84.6	84.1	83.6	83.2	82.7	82.2	81.7	81.2	80.7	80.2
21.5	4.0	11.1	84.9	84.4	83.9	83.4	82.9	82.5	82.0	81.5	81.0	80.5	80.0
25.0	4.5	10.8	84.7	84.2	83.7	83.2	82.7	82.2	81.7	81.2	80.7	80.2	79.7
28.6	5.0	10.5	84.5	84.0	83.5	83.0	82.5	82.0	81.4	80.9	80.4	79.9	79.3
32.5	5.5	10.2	84.3	83.8	83.3	82.8	82.2	81.7	81.2	80.6	80.1	79.5	79.0
36.6	6.0	9.8	84.1	83.6	83.0	82.5	81.9	81.4	80.8	80.3	79.7	79.2	78.6
41.0	6.5	9.5	83.9	83.3	82.8	82.2	81.7	81.1	80.5	80.0	79.4	78.8	78.2
45.8	7.0	9.2	83.6	83.1	82.5	81.9	81.3	80.8	80.2	79.6	79.0	78.4	77.8

Combustion Efficiency Chart for L.P. Gas, Continued

Atmospheric Burner

Excess Air	**% O_2**	**% CO_2**	**Net Stack Temperature — Degrees Fahrenheit**										
			300	**320**	**340**	**360**	**380**	**400**	**420**	**440**	**460**	**480**	**500**
28.6	5.0	10.5	84.5	84.0	83.5	83.0	82.5	82.0	81.4	80.9	80.4	79.9	79.3
32.5	5.5	10.2	84.3	83.8	83.3	82.8	82.2	81.7	81.2	80.6	80.1	79.5	79.0
36.6	6.0	9.8	84.1	83.6	83.0	82.5	81.9	81.4	80.8	80.3	79.7	79.2	78.6
41.0	6.5	9.5	83.9	83.3	82.8	82.2	81.7	81.1	80.5	80.0	79.4	78.8	78.2
45.8	7.0	9.2	83.6	83.1	82.5	81.9	81.3	80.8	80.2	79.6	79.0	78.4	77.8
50.9	7.5	8.8	83.4	82.8	82.2	81.6	81.0	80.4	79.8	79.2	78.6	78.0	77.4
56.3	8.0	8.5	83.1	82.5	81.9	81.3	80.6	80.0	79.4	78.8	78.1	77.5	76.9
62.2	8.5	8.2	82.8	82.2	81.5	80.9	80.2	79.6	79.0	78.3	77.7	77.0	76.4
68.6	9.0	7.9	82.4	81.8	81.1	80.5	79.8	79.2	78.5	77.8	77.2	76.5	75.8

Courtesy of The Boiler Institute and Bacharach, Inc.

IDAHO WEATHERIZATION OPERATION MANUAL

Standard Seasonal Efficiency Tables

Natural Gas

Type	Features	Seasonal Efficiency (AFUE) %
Conventional furnace[1]	☐ chimney ☐ continuously lit pilot light ☐ draft hood	60
Conventional furnace with vent damper[1]	☐ chimney ☐ electric ignition ☐ draft hood	62-67
Mid-efficiency furnace with powered exhaust[1]	☐ chimney or side wall vent ☐ electric ignition ☐ no draft hood ☐ powered exhaust	78-84
Condensing furnace with powered exhaust[2]	☐ no chimney ☐ electric ignition ☐ no draft hood conventional or pulsed combustion burner ☐ multistage heat exchanger ☐ condenses water vapour from flue gases ☐ plasticABS or PVC flue pipe to side wall	89-97
Conversion burners for oil equipment[1]	☐ chimney ☐ pilot light or electric ignition ☐ special barometric damper or draft hood	63-68
Direct-vent wall furnace[1]	☐ vent ☐ sealed combustion ☐ pilot light or electric ignition	70-82
Room heaters[1]	☐ vent ☐ pilot light or electric ignition ☐ draft hood or sealed combustion	60-82
Gas fireplaces[1]	pilot light or intermittent ignition ☐ ceramic glass for flame viewing ☐ simulated fire logs ☐ natural draft or directvent	5-70

Seasonal Efficiency Tables, Continued

Energy Source	Technology	Seasonal Efficiency (AFUE) %
Natural Gas	Conventional	60
	Vent damper with non-continuous pilot light	62–67
	Mid-efficiency	78–84
	High-efficiency condensing furnace	89–97
	Integrated space/tap water condensing	89–96
Propane	Conventional	62
	Vent damper with non-continuous pilot light	64–69
	Mid-efficiency	79–85
	Condensing	87–94
Oil	Cast-iron head burner (old furnace)	60
	Flame-retention head replacement burner	70–78
	High-static replacement burner	74–82
	New standard model	78–86
	Mid-efficiency	83–89
	Integrated space/tap water mid-efficiency	83–89
Electricity	Electric baseboards	100
	Electric furnace or boiler	100
	Air-source heat pump	1.7 COP[2]
	Earth-energy system (ground-source heat pump)	2.6 COP[2]
Wood	Central furnace	45–55
	Conventional stove (properly located)	55–70
	"High-tech" stove[3] (properly located)	70–80
	Advanced combustion	50–70

	fireplace[3]	
	Pellet stove	55–80

Central Air Conditioner or Heat Pump Cooling Efficiency (SEER)	
1970 and earlier	SEER = 6.0
1971 - 1996	SEER = 9.5 + 0.1786 * (year manufactured - 1990)
1997 - 2002	SEER = 10.75 + 0.0750 * (year manufactured - 1997)
2003 - 2007	SEER = 11.2 + 0.3600 * (year manufactured - 2003)
2008 and later	SEER = 13.0
Heat Pump Heating Efficiency (HSPF)	
1970 and earlier	HSPF = 5.0
1971 - 2007	HSPF = 5.5 + 0.06875 * (year manufactured - 1976)
2008 and later	HSPF = 7.7
Room (Window) Air Conditioner Cooling Efficiency (EER)	
1972 and earlier	EER = 6.0
1973 - 1994	EER = 6.0 + 0.1304 * (year manufactured - 1972)
1995 - 1998	EER = 9.0
1999 - 2001	EER = 9.0 + 0.2500 * (year manufactured - 1999)
2002 and later	EER = 9.75
Conversion of Room Air Conditioner EER to SEER	
SEER = 0.9 * EER + 0.1	Fan runs continuously (assumed in Version 8.3)
SEER = 1.2 * EER - 0.7	Fan runs only when cooling

Heating and Cooling Efficiencies Based on Manufactured Date

1. **Listed Efficiency:** When no work is proposed, use the listed efficiency in this section, representing the heating system type.
2. **No Greater than 5%:** When work is proposed, use an efficiency no greater than 5% below the listed efficiency in this section, representing the heating type.
3. **Lower Efficiency:** A lower efficiency may be used within the actual fuel consumption (information provided by the utility) is greater than the EA4 estimated fuel consumption.

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Heat Rise Difference of Supply and Return

Heat Rise: When the fuel input in a central heating system is correct and the net stack temperature is high (in the poor range), this condition indicates undersized or blocked ducting, a dirty blower, or the blower speed is set too low. When these conditions exist, test for heat rise (between the return duct and supply plenum).

Thermometer Locations: Before operating the heating system, insert two thermometers close to the furnace cabinet, one in the return ducting and one in the supply plenum. A small test hole is needed for a path to insert the thermometer probe.

Operate Furnace: When the thermometers are set, increase the furnace thermostat temperature setting. Wait until the thermometer dials stop moving (approx. 5 minutes) before documenting temperature readings.

Heat Rise

Inadequate	20 – 40° Fahrenheit
Good	40 – 80° Fahrenheit
Excessive	80 – 95° Fahrenheit

Inadequate Temperature: Temperatures less than 40° may indicate the unit is underfired. All gas heating systems (with the exception of 80+ induced draft and 90+ condensing units) should maintain a net stack temperature greater than 250° Fahrenheit. If the unit is underfired, this condition would have been initially identified with timing the gas meter.

Excessive Temperature: Temperatures greater than 80° Fahrenheit indicated restricted air flow in the duct system. If the unit has restricted air flow, this condition would have been initially identified by performing pressure testing on the duct system.

Documentation: Document test results on the JOS. Include proposed work information if the heat rise is not within acceptable limits (Good range).

Minimum Ventilation Guidelines

In order to calculate the Minimum Ventilation required to retain the integrity of installed measures and ensure the health and safety of occupants, the following table:

The values in the table are based on ASHRAE 62.2- 2007 and are fan flows measured in CFM. The N- value is not used to convert the following values into CFM 50.

Floor Area (Square Foot Measurement)	Number of Bedrooms				
	0 – 1	2 – 3	4 –5	6 – 7	> 7
< 1500	30	45	60	75	90
1501 - 3000	45	60	75	90	105
3001 – 4500	60	75	90	105	120
4501 – 6000	75	90	105	120	135
6001 – 7500	90	105	120	135	150
> 7500	105	120	135	150	165

Table is a duplication of Table 4.1a (I-P) for Minimum Ventilation from the ANSI/ASHRAE Standard 62.2-2007 for Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings.

An alternate method that can be used to calculate Minimum Ventilation for dwellings is the following formula:

MVR (CFM) = (7.5 cfm X Number of Occupants) + (.01 X Floor Area)

To calculate the required flow, count 1 cfm per 100 square feet of floor area to account for the building. Next, to account for the occupants, multiply the number of bedrooms plus one (which assumes two occupants in the master bedroom) by 7.5 cfm. Add those results together.

For example, a 1,500-square-foot house with three bedrooms would require 45 cfm (15 cfm for the building plus 30 cfm for the four occupants).

STATE OF IDAHO
WEATHERIZATION PROGRAMS
MONTHLY SAFETY REPORT

DIRECT SERVICE PROVIDER: _____ DATE/TIME: _____

PROGRAM MANAGER/DESIGNEE: _____

SAFETY DISCUSSION; SUBJECT/CONTENTS: _____

EMPLOYEES IN ATTENDANCE (SIGNATURES):

1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

7. _____ 8. _____

9. _____ 10. _____

11. _____ 12. _____

Lead Safe Renovation Verification Checklist

Name of Firm:_____

Date and Location of Renovation:_____

Brief Description of Renovation: _____

_____

Name of Assigned Renovator:_____

Name(s) of Trained Workers, if used:_____

_____

Name of Dust Sampling Technician, Inspector, or Risk Assessor, if used:_____

_____

 Copies of renovator and dust sampling technician qualifications (training certificates, certifications) on file.

 Certified renovator provided training to workers on (check all that apply):

 Posting warning signs Setting up plastic containment barriers

 Maintaining containment Avoiding spread of dust to adjacent areas

 Waste handling Post-renovation cleaning

 Test kits used by certified renovator to determine whether lead was present on components affected by renovation (identify kits used and describe sampling locations and results):_____

_____

_____

 Warning signs posted at entrance to work area.

 Work area contained to prevent spread of dust and debris

 All objects in the work area removed or covered (interiors)

 HVAC ducts in the work area closed and covered (interiors)

 Windows in the work area closed (interiors)

 Windows in and within 20 feet of the work area closed (exteriors)

 Doors in the work area closed and sealed (interiors)

 Doors in and within 20 feet of the work area closed and sealed (exteriors)

 Doors that must be used in the work area covered to allow passage but prevent spread of dust

 Floors in the work area covered with taped-down plastic (interiors)

 Ground covered by plastic extending 10 feet from work area—plastic anchored to building and weighted down by heavy objects (exteriors)

 If necessary, vertical containment installed to prevent migration of dust and debris to adjacent property (exteriors)

 Waste contained on-site and while being transported off-site

 Work site properly cleaned after renovation

 All chips and debris picked up, protective sheeting misted, folded dirty side inward, and taped for removal

 Work area surfaces and objects cleaned using HEPA vacuum and/or wet cloths or mops (interiors)

 Certified renovator performed post-renovation cleaning verification (describe results, including the number of wet and dry cloths used):_____

_____

_____

 If dust clearance testing was performed instead, attach a copy of report.

 I certify under penalty of law that the above information is true and complete.

_____ _____

name and title date

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JOB SITE
HEALTH & SAFETY CHECKLIST

1. Ground fault circuit interrupters (GFI) in use? ---------- ☐ Yes ☐ No
2. Proper use of extension ladders (minimum 36" above landing, 4 to 1 pitch)---------- ☐ Yes ☐ No
3. Ladders in good condition with no rungs, steps, or rails damaged? ---------- ☐ Yes ☐ No
4. Safety equipment available to all employees? ---------- ☐ Yes ☐ No
5. Personal safety equipment in use and available where needed (eye & hearing protection, respirators etc)? ---------- ☐ Yes ☐ No
6. Power tools in good and safe working condition? No evidence of damage to cord or plug in?---------- ☐ Yes ☐ No
7. Power equipment moving parts shielded and emergency shut off operational (insulation blowers, generators, table saws, etc? ---------- ☐ Yes ☐ No
8. Transport vehicle features operational (headlights, horn, brakes, turn signals, emergency flashers, and safety belts for all passengers)? ---------- ☐ Yes ☐ No
9. Properly equipped first aid kit, fire extinguisher and hazardous materials information in vehicle. ---------- ☐ Yes ☐ No
10. Has health & safety of client been adequately addressed? ---------- ☐ Yes ☐ No
11. Has a randomly selected crew member retained information from the latest health & safety meeting? ---------- ☐ Yes ☐ No

    Subject of that meeting.

    _____

Comments:

_____

Questions above indicating a "no" must have a description with explanation if remedial action taken.

_____

_____ _____

Direct Service Provider Health & Safety Representative Date

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State of Idaho
Weatherization Assistance Program
Job Completion Form

Name: **Job #:**

Address: **Completion Date:**

- **I agree the weatherization work on my home has been completed. As of this date, my file will be closed and no further weatherization assistance will be provided at this address.**

- **I further agree it is the property owner's responsibility to maintain this home in such a manner as to protect the weatherization investment, including (but not limited to) maintenance and/or repairs on: heating system, water heater, roof, plumbing, windows, and doors.**

- **I certify that I received information regarding the installed weatherization measures and lifestyle changes related to energy conservation.**

- **If requested, I agree to allow the Agency and/or Utility Company to inspect the installed weatherization measures.**

- **I hereby release the Agency and the Weatherization Assistance Program from any liability as a result of existing and/or future circumstances regarding the condition and/or safety of this unit including problems caused by excessive moisture.**

- **Comments:**

_____	_____
Applicant/Agent	**Direct Service Provider Representative**
_____	_____
Date	**Date**

Attachment 1

U.S. Department of Energy
Minimum Standards for LSW

Safe Work Practices must be implemented to minimize exposure to hazards for the customer and the workers, while allowing Weatherization to occur in a cost-effective manner and to not hinder production. The effort required will be based on the hazard, the work specifications, and customer health issues.

CHECK: Federal, state, and local regulations.
- OSHA has rules for worker safety.
- States and local communities may have rules for waste disposal.

To meet the LSW minimum standards, crews and contractors MUST follow the general principles of working clean and working wet. Best practices for working clean and working wet are available in the benchmark LSW procedures and curriculum and should be reviewed and consistently enforced on LSW jobs.

A. Requirements

Weatherization Worker Protection

LSW includes these procedures and safety precautions:
- Wear personal protective gear specifically suited for the particular LSW measure. Use the National Institute for Occupational Safety and Health (NIOSH) approved respirators (at least ½ face) with HEPA filters.
- Use disposable overalls (with hood or a disposable painter's cap), gloves (cloth, plastic, or rubber as appropriate), goggles, and disposable shoe/boot covers.
- Keep dust to a minimum and confine dust and paint chips to the work area.
- Clean up area during and after work.

> **For 2010, to comply with EPA's LRRPP Rule requirements**, specific clean up procedures will be required as outlined in the April 22, 2008, rule.

- During Weatherization, wash your hands and face frequently, particularly when leaving the work area and especially before leaving the area for the purpose of eating, drinking, or smoking.
- Before leaving a confined work area, remove your protective clothing and protective shoe/boot covers to avoid exposing others.
- Before leaving a confined work area, and before returning tools and equipment to vehicles, clean all tools to avoid exposing others and creating a lead-hazard to the next Weatherization job.
- Get annual medical exams to check blood lead levels. Do non-lead-related work if your blood lead level gets too high.
- Inform your employer if you develop signs of lead poisoning.

Client Notification
For occupied homes, the Weatherization staff, crew, or contractor must have an adult tenant or homeowner sign an acknowledgement after receiving the pamphlet. The pamphlet can also be sent by certified mail with receipt to be placed in the customer file.

In multi-unit housing, the agency must:

- Provide written notice to each affected unit (notice must describe: general nature and locations of the planned renovation activities; the expected starting and ending dates; statement of how occupant can get pamphlet at no charge); or
- Post informational signs (signs must describe general nature and locations of the renovation and the anticipated completion date) and post the EPA pamphlet. (If pamphlet is not posted then agencies are required to provide information on how interested occupants can review a copy of the pamphlet or obtain a copy at no cost from the Weatherization Program).
- Delivery to owner/occupant. Owner's and/or occupant's signature with acknowledgment or certificate of mailing. The owner/occupant must acknowledge receipt of the EPA pamphlet prior to start of renovation that contains the address of unit undergoing renovation, name and signature of owner or occupant, and the date of signature. It must be in same language as "contract for renovation" for an owner-occupied (or the same language as the lease for occupant of non-owner occupied) target housing.

If the Weatherization Program cannot get a signed acknowledgment (either the occupant is not home or refuses to sign the form), then the self-certification section of the form must be signed to prove delivery.

The acknowledgement form must be filed and remain with the client file for three years from date of signature. In addition to providing a copy of the pamphlet to owners and occupants, designated local agency staff (e.g., intake specialist, auditor, crew chief) must discuss the hazards associated with lead-based paint and lead dust, and describe how they will conduct LSW in the home.

B. General LSW Work Practice Standards

- Crews and contractors must take steps to protect occupants from lead-based paint hazards while the work is in-progress using appropriate containment strategies.
- Occupants, especially young children or pregnant women, may not enter the work site. Occupants are allowed to return only after the work is done and the home has passed a visual inspection.

> **For 2010, to comply with EPA's LRRPP Rule requirements**, specific verification inspection procedures will be required as outlined in the April 22, 2008, rule.

- Occupants' belongings must be protected from lead contamination. This can be done by removing them from the work area or covering them in protective bags and sealing it to prevent dust from getting on the items.
- The work site must be set up to prevent the spread of leaded dust and debris.
- Warning signs must be posted at entrances to the worksite when occupants are present; at the

main and secondary entrances to the building; and at exterior work sites. The signs must be readable from 20 feet from the edge of the worksite. Signs should be in the occupants' primary language, when practical.

- The work area must be contained. If containment can not be achieved with occupants in the unit (e.g., work will take several days and involves the kitchen, bathrooms, or bedrooms that can not be sealed off from use), occupants must move out of the unit or the work must be deferred until containment can be achieved.
- In 2010, per EPA rule, a Certified Renovator must supervise and inspect Weatherization work of any type and scale to ensure it is being done properly.
- Ensure containment does not interfere with occupant and worker egress in an emergency.

Prohibited Work Activities

The following are frequent questions related to prohibitions when working in pre-1978 homes:

- NEVER - use reusable cloth or fabric, such as a painter's drop cloth, as protective containment sheeting. Polyethylene and in some cases when working on the exterior garden fabric are the only acceptable protective containment sheeting and must never be reused.
- NEVER - use brooms and shop vacuums for cleanup. Wet cleaning and HEPA vacuums are the only acceptable methods for cleanup.
- NEVER – use a conventional shop vacuum with HEPA filters – only HEPA-designed vacuums are acceptable for LSW.
- NEVER - turn leaded paint into leaded dust by dry scraping or sanding (unless needed around electrical outlets) or grinding, abrasive blasting or planning.
- NEVER - use an open-flame torch or heat gun (above 1100°F) to remove paint or window glazing. Open flame/high heat methods to remove paint create fumes that are dangerous for workers to breathe. Small lead particles created by burning and heating also settle on surrounding surfaces and are very hard to clean up.

C. Containment

Containment is anything that stops any dust or debris from spreading beyond the work area to non-work areas. The level of containment must be determined by the auditor/inspector or supervisor before work is assigned to a crew or contractor.

For 2010, to comply with EPA's LRRPP Rule requirements, a Certified Renovator will be required at the jobsite to assess and set up the containment site.

- NEVER - allow residents and pets access to the work area while work is underway.
- NEVER - open windows and doors allowing lead dust to float into other parts of the building or outside.
- NEVER - allow furniture and other objects to remain in the Weatherization work area while Weatherization work is being performed unless they are covered and sealed in polyethylene sheeting or bags.

Every home and every specific Weatherization measure is unique, therefore the level of containment required will be based on the hazards present, the age of the home, the scope of work activities, and any customer health issues. Although Weatherization jobs require individual assessments, LSW work generally falls into two levels of containment and the related standards are outlined below.

Level 1 Containment
Level 1 containment is required in pre-1978 homes when ***less than*** 6 ft^2 of interior painted surface per room or 20 ft^2 of exterior painted surface will be disturbed.

Level 1 containment consists of methods that prevent dust generation and contains all debris generated during the work process. The containment establishes the work area which must be kept secure.

Measures that *may* fall within this guideline include:

- Installing or replacing a thermostat
- Drilling and patching test holes
- Replacing HEPA filters and cleaning HEPA vacuums
- Changing Furnace Filter
- Removing caulk or window putty (interior)
- Removing caulk or window putty (exterior)
- Removing weather-stripping

Level 2 Containment
Level 2 containment is required when Weatherization activities will disturb ***more than*** 6 ft^2 of interior surface per room or 20 ft^2 of exterior surfaces in homes built prior to 1978. Level 2 containment consists of methods that define a work area that will not allow any dust or debris from work area to spread. Level 2 containment requires the covering of all horizontal surfaces, constructing barrier walls, sealing doorways, covering HVAC registers with approved materials, and closing windows to prevent the spread of dust and debris.

Measures requiring level 2 containment *may* include:

- Drilling holes in interior walls
- Drilling holes in exterior walls, removing painted siding
- Cutting attic access into ceiling or knee walls
- Planning a door in place
- Replacing door jambs and thresholds
- Replacing windows or doors
- Furnace replacements

Additionally, Level 2 containment must ***ALWAYS*** be used where any of the following is conducted (even if the activities will disturb less than the hazard de minimis levels within the Level 1 category):

- Window replacement
- Demolition of painted surface areas

- Using any of the following:
  - Open-flame burning or torching;
  - Machines to remove paint through high-speed operation without HEPA exhaust control; or
  - Operating a heat gun at temperatures at or above 1100 degrees Fahrenheit.

D. Proper LSW Clean-Up and Debris Disposal

Following the containment standards in the previous section will minimize the level of effort required to properly clean up the job site. All dust, dirt, material scraps, containers, wrappers, and work related debris must be removed from the customer's home. A HEPA vacuum should be used to clean up the work areas. Further cleaning may be necessary based on the hazard.

At the conclusion of the job, once all workers have "cleaned" the work areas thoroughly, Weatherization workers must adhere to the following:

Safe and Secure Disposal

- Bag and gooseneck-seal all waste in 6-mil plastic bags
- Safely dispose of all waste in accordance with federal, state, and local regulations

Visual Inspection Verification

Checking the quality of worksite cleanliness is a two-phase process:

- Phase 1: Worker visual inspection during the cleaning process; look for any visible paint chips, dust, or debris as you clean, using proper techniques.
- Phase 2: Supervisor visual inspection after cleanup. There should be no evidence of settled dust following a cleanup effort. If dust is observed, the Weatherization crew must be required to repeat the cleaning.

If work is done outside the house, the grounds around the dwelling and all exterior horizontal surfaces should also be examined visually to make certain that all waste and debris have been removed and that paint chips were not left behind.

For 2010, to comply with EPA's LRRPP Rule, cleaning verification using EPA-developed cards will be required. EPA expects to have them widely available in late 2008/early 2009; however, using verification cards is not a requirement until 2010.

Specific steps required of the Certified Renovator during the cleaning verification is available in the EPA LRRPP Rule and will be implemented as a requirement by DOE in PY 2010.

REV 07/09

IDAHO WEATHERIZATION PROGRAM
OWNER INVESTMENT FORM

Job #

Tenant Name and
Property Address:

Total combined job cost estimate: $_____

Contribution percentage requested: X 20%

Minimum requested contribution: = $_____

(Please check appropriate line)

☐ I will invest $_____ toward the cost of weatherization work performed on my property. This amount represents at least 20% of the total cost of the work as highlighted on the energy analysis.

☐ I am unable to make a 20% investment, but will contribute $_____ toward the weatherization work.

☐ I will make an investment of material and/or labor in the property in the amount of $_____ by performing other conservation related measures and/or other necessary repair work on the dwelling, including the following: _____

☐ I refuse to make an investment.

Reason: _____

_____ _____

Owner/Authorized Agent Date

REV 7/09

AUDIT WALK THROUGH FORM

Client Name: _____ Date: _____

Address: _____
_____

DESCRIPTION OF CONDITION

_____

WORK TO BE COMPLETED BEFORE WEATHERIZATION ACTIVITES MAY CONTINUE

____

I understand that the above condition prevent _____ from continuing with weatherization activities, and that weatherization activities can continue if the above item(s) are resolved. It is my responsibility to return this form signed and dated. The work is to be completed within sixty (60) days of the date of this form, in order to keep an active file with the agency's weatherization program. I am also responsible for notifying the agency when the work is completed. I understand if these conditions are not resolved within this period, I will need to reapply for weatherization services.

Client Signature: _____

Date: _____

Department of Energy
Washington, DC 20585

WEATHERIZATION PROGRAM NOTICE 08-6
EFFECTIVE DATE: September 22, 2008

SUBJECT: INTERIM LEAD-SAFE WEATHERIZATION (LSW) GUIDANCE

PURPOSE: To provide additional guidance for an LSW component of a Health and Safety Plan. This guidance builds on the foundation provided in Weatherization Program Notice (WPN) 02-6, Weatherization Activities and Federal Lead Based Paint Regulations.

SCOPE: The provisions of this guidance apply to all grantees applying for financial assistance under the Department of Energy's (DOE) Weatherization Assistance Program.

LEGAL AUTHORITY: Title IV, Energy Conservation and Production Act, as amended, authorizes the Department of Energy to administer the Low-Income Weatherization Assistance Program. All grant awards made under this Program shall comply with applicable law including regulations contained in 10 CFR Part 440 and other procedures applicable to this regulation as DOE may, from time-to-time, prescribe for the administration of financial assistance.

BACKGROUND: On July 12, 2002, DOE issued WPN 02-6, Weatherization Activities and Federal Lead Based Paint Regulations. WPN 02-6 provides background information on the various regulations impacting the treatment of pre-1978 homes that may have lead paint hazards when Weatherization work is being performed. This guidance remains in place.

To assist grantees with implementation of the WPN 02-6, DOE, in partnership with Montana State University (MSU), developed Lead Safe Weatherization (LSW) procedures and curriculum for agencies to follow when doing work in pre-1978 homes. DOE has not required grantees to use these tools, but has accepted the procedures and curriculum as the benchmark for LSW and has set the expectation that all Weatherization work performed in pre-1978 housing be done in a lead safe manner as prescribed by these materials. Over the ensuing few years the network continued to train and build experience in addressing lead issues.

In 2007, DOE commissioned a study conducted by the National Center for Healthy Housing (NCHH) performed a study, "*Analysis of Lead-Safe Weatherization Practices and the Presence of Lead in Weatherized Homes.*" The results of the study indicated that levels of lead paint were sometimes higher than acceptable Environmental Protection Agency (EPA) standards following the completion of certain Weatherization measures, specifically, when work was done on doors and windows. In response, the DOE Weatherization Health and Safety Committee drafted recommendations to address the concerns raised by the study.

DOE was poised to implement these recommendations when the EPA published a new Final Rule in April 2008: the "Lead; Renovation, Repair, and Painting Program" Final Rule (LRRPP Final Rule),

to be fully implemented by April, 2010. This rule specifically cites Weatherization in several places as an activity that falls under the rule, and thus, the rule has a direct impact on how the Program proceeds, especially in implementing Lead Safe Weatherization. (For a full version of the EPA Rule see www.EPA.gov/fedrgstr/epa-tox/2008/April/Day-22/t8141.pdf.)

While the EPA Rule is not scheduled to be fully implemented until 2010, DOE is providing guidance and recommendations for WAP Grantees to undertake during the remainder of 2008 and during 2009. Guidance is also provided for 2010, and that guidance is indicated in boxes in this WPN. Additional Guidance will be provided by DOE regarding the implementation of the LRRPP Rule as more becomes available from EPA.

In 2008, DOE, again in partnership with MSU and in coordination with the DOE Health and Safety Committee, revised the LSW procedures and curriculum to strengthen the current practices, **establishing minimum standards for LSW**. These changes position the Program to address the concerns from the 2007 NCHH study and also ensure the Program is poised to implement EPA requirements that go into effect April 2010. The revised procedures and curriculum that meets DOE's 2009 minimum requirements will be available October 2008 from Montana State University.

For 2010, to comply with EPA's LRRPP Rule requirements, DOE will release a revised benchmark curriculum *(anticipated delivery Fall 2009)* which will fully address all the new requirements effective April 2010. This curriculum will meet the EPA requirements and can be used by the grantees to develop their own EPA submissions.

Grantees are advised, any state mandates and state requirements are the responsibility of the grantee to research and incorporate into the procedures and curriculum.

LSW COST ASSIGNMENT: The cost of LSW is a health and safety cost. While DOE does not require grantees to include LSW costs in the Health and Safety budget category, it encourages grantees to do so because all labor, material, and related costs are not subject to the average cost per home limitation when included in this category. Grantees are reminded "clearance testing" to meet Housing and Urban Development (HUD) or EPA lead dust standards is NOT an allowable cost. Also, purchasing XRF devices is NOT an allowable expense with the DOE Weatherization Assistance Program funds.

REQUIREMENTS FOR PY 2009:
The following requirements are for implementation in PY 2009 only. The 2009 requirements do **NOT** address compliance dealing with training, work practice, and cleaning verification of the EPA LRRPP Final Rule which will commence on April 22, 2010. During PY2009, DOE will provide additional guidance to assist grantees in complying with EPA's training and certification requirements for PY 2010.

DOE is confident that **by following Minimum Standards for LSW (Attachment 1 of this guidance),** we can ensure protection of Weatherization clients and workers, while continuing to focus on the Weatherization Program's primary mission**:** energy efficiency, and making energy more affordable for low-income households.

1. State Health and Safety Plans for 2009

As part of each grantee's Health and Safety Plan, beginning in PY 2009, grantees will be required to submit a more comprehensive Health and Safety Plan which must include an LSW component detailing how the grantee will:

- Conduct LSW training using either the DOE benchmark LSW Curriculum or an equivalent curriculum *(Available beginning October 2008 from Montana State University)*

- Verify compliance with the Minimum Standards for LSW (Attachment 1); and,

- Handle agencies that are found not to be in compliance with WPN 08-6 and the Minimum Standards for LSW (Attachment 1).

> **For 2010, to comply with EPA's LRRPP Rule requirements**, grantees must submit their curriculum to EPA or the EPA designated authority within their state for accreditation. Grantees are also reminded that compliance with any other state/local requirements is the grantees' responsibility to research and to include in their curriculum.
>
> When the EPA LRRPP is in full effect, DOE will require as part of its LSW Minimum Standards all additional requirements as outlined in the EPA LLRRP April 22, 2008, published rule.

2. Weatherization Worker Protection

DOE requires grantees to follow the specified EPA requirements. By adopting basic safety precautions and LSW, Weatherization Programs can protect workers and the occupants of the homes they weatherize from lead exposure. DOE requires grantees to follow the specified EPA and Occupational Safety and Health Administration (OSHA) standards for Worker Safety as well as any state or local requirements.

By ensuring all Weatherization workers are knowledgeable of LSW Minimum Standards (as revised in the 2008 benchmark procedures and curriculum), grantees increase the assurance LSW is being followed properly and risks to the workers and/or occupants are minimized.

3. Client Notification Requirements

DOE requires all states to follow the EPA requirements related to notification. **For homes weatherized before December 22, 2008**, owners and occupants of a dwelling built before 1978 must receive the pamphlet "*Protect Your Family from Lead in Your Home.*" **For homes weatherized after December 22, 2008,** EPA's new publication "*Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools*" must then be used.

Please ensure the subgrantees and contractors are meeting the timelines and retaining copies of the notification, as specified above, and in the DOE LSW Minimum Standards.

4. Client Health and Safety

LSW requires residents and pets NOT having access to the work area while work is underway. Agency staff is required to make every effort to contain the work area and eliminate tracking any dust or materials throughout the house (or exposing residents and pets to any contaminants).

If containment can not be achieved and there is risk of traffic through the work area (e.g., work will take several days involving kitchens, bathrooms, or bedrooms) agencies are advised to defer the work until other resources can be secured to offset relocation expense for the residents and pets.

5. Documentation of LSW

States must document in their files LSW was properly implemented (e.g., photos of the site, containment set up, etc.). **Note: Grantees are reminded that all completed units must receive a final inspection to insure that compliance with all regulations have been met, which includes LSW procedures.**

For 2010, to comply with EPA's LRRPP Rule requirements, Renovations must be performed by Certified Renovation firms. To become Certified Renovation firms must submit an application to EPA and pay a fee (yet to be determined).

Certified Renovators will be a required position for pre-1978 job sites. The Certified Renovators must be trained and receive their credential at an EPA-accredited training facility and be onsite at all LSW sites to perform the mandated functions of the Certified Renovator.

The Certified Renovator will verify the job site was "secure." Verification documents must be placed in the client files, attesting that all LSW standards were properly followed and the containment area was set up properly and was not compromised during work. The results of the Cleaning Verification that is required beginning April 2010 must also be documented in the customer file.

In 2010, subgrantees will be required to provide documentation of the Certified Renovator credentials, ensuring they are qualified to perform the specific functions of the Certified Renovator.

CONCLUSION: DOE would like to thank the DOE Health and Safety Committee and the Weatherization network for their contributions in providing input on the issues surrounding the lead-based paint hazard. Additional recommendations for strengthening the LSW approach are provided (Attachment 2).

Because of the complexity of these issues, as well as unknown requirements for years beyond 2009, there may be elements that will require still further clarification. DOE will continue to provide additional updates to grantees and has provided a glossary of terms (Attachment 3) to assist in clarifying terms.

Gilbert P. Sperling
Program Manager
Office of Weatherization & Intergovernmental Program
Energy Efficiency and Renewable Energy

Attachment 1: Minimum Standards for LSW
Attachment 2: Recommendations for Strengthening LSW for PY 2008 and 2009
Attachment 3: LSW Glossary of Terms

Department of Energy
Washington, DC 20585

WEATHERIZATION PROGRAM NOTICE 09-6
EFFECTIVE DATE: January 7, 2009

SUBJECT: LEAD SAFE WEATHERIZATION (LSW) – ADDITIONAL MATERIALS AND INFORMATION

PURPOSE: To provide clarification and additional information to grantees as they implement WPN 08-6, Interim Lead-Safe Weatherization (LSW) Guidance. This guidance augments, but does not replace, WPN 08-6 and builds on the foundation provided in Weatherization Program Notice (WPN) 02-6, Weatherization Activities and Federal Lead Based Paint Regulations.

SCOPE: The provisions of this guidance apply to all grantees applying for financial assistance under the Department of Energy's (DOE) Weatherization Assistance Program.

LEGAL AUTHORITY: Title IV, Energy Conservation and Production Act, as amended, authorizes the Department of Energy to administer the Low-Income Weatherization Assistance Program. All grant awards made under this Program shall comply with applicable law including regulations contained in 10 CFR Part 440 and other procedures applicable to this regulation as DOE may, from time-to-time, prescribe for the administration of financial assistance.

BACKGROUND: On September 22, 2008, DOE issued WPN 08-6, Interim Lead Safe Weatherization (LSW) Guidance to augment WPN 02-6 which provides background information on the various regulations impacting the treatment of pre-1978 homes that may have lead paint hazards when Weatherization work is being performed. Both of these pieces of guidance remain in place.

GUIDANCE: WPN 08-6 does not relieve any requirements established by 02-6, and in particular, all weatherization staff are required to continue to perform LSW accordingly. However, grantees may choose, at their option, to incorporate any or all parts of the EPA regulations going into effect April 2010, including the option to allow exemptions from LSW.

Exemptions
LSW must be applied to <u>all</u> pre-1978 housing unless the house meets EPA's Final Rule Exemptions.

Note: State authorities may, at their discretion, be more stringent and NOT allow certain exemptions within their state.

1. **No Lead-Based Paint will be Disturbed.** LSW must be applied to all pre-1978 housing unless there is existing evidence that the home has been certified as being lead-free or below the lead threshold limit (e.g., for paint containing lead below the regulated level, 1.0 mg/cm2 or 0.5% by weight). One of the following methods must be used to determine the paint to be disturbed is not lead-based paint:
   - Written determination by certified lead inspector or risk assessor; ***OR***
   - Proper use of EPA-recognized test kit provided agencies (*documenting manufacturer and model of test kit used, description and location of components tested, and test kit results)*

     Note: Beginning in 2010, tests must be performed by a Certified Renovator, per EPA final rule. Test kits are currently being evaluated but none have been approved to date – updates and approved kits will be posted at http://www.epa.gov/lead/; ***OR***
   - A State-approved lead-based paint test protocol (e.g., XRF scans verifying absence of lead paint).

2. **Mobile Homes.** Often, interiors of mobile homes were not painted but rather, paneling was applied to the surfaces. Therefore, pre-1978 mobile homes that were not painted by the manufacturer, occupant, landlord, or past owner of the unit before 1978, may be exempt from LSW. However, Weatherization Programs must verify the areas receiving weatherization services have never been painted or were painted for the first time after 1978. If this is not verifiable, then LSW protocols must be followed. Painted exterior surfaces on pre-1978 units should not be drilled, scraped, sanded, or receive any other work that disturbs the paint.

3. **Exempt from training and work practice requirements <u>if owner signs written statement</u> that <u>all</u> apply**:
   a. No pregnant women resides there; and
   b. Not a child-occupied facility ("occupied" includes being the child's primary residence or a home that is visited regularly by the same child, under age 6, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours).

4. **Housing for the elderly or persons with disabilities** (unless any one or more children under age 6 resides or is expected to reside in such housing for the elderly or persons with disabilities).

5. **Any 0-bedroom dwelling**.

6. **Minor Repair or Maintenance Activities:** Activities that will disturb less than the following square feet of paint surfaces in 30 calendar days (counting all paint surface areas of a removed component):
   - 6 square feet per room for interior activities; or
   - 20 square feet for exterior activities.

   But this exemption does ***NOT*** apply to the following:
   - Window replacement.
   - Demolition of painted surface areas.
   - Using any of the following:
     - Open-flame burning or torching;
     - Machines to remove paint through high-speed operation without HEPA exhaust control; or
     - Operating a heat gun at temperatures at or above 1100 degrees Fahrenheit.

7. **Do-It-Yourself:** Work performed by owners themselves in their residence.

THE EPA LRRPP RULE DOES NOT PRE-EMPT MORE PROTECTIVE REQUIREMENTS AND GRANTEES SHOULD KEEP ABREAST OF ANY OTHER RULES AND REGULATIONS GOVERNING AN AGENCY'S ACTIVITIES SUCH AS THOSE BY HUD, STATES OR COMMUNITIES.

Implementing Levels of Containment

WPN 08-6 Attachment 1, Minimum Standards for LSW, articulates the specific standards and provides levels of containment – giving agencies options for how to perform LSW depending on the measure being performed. This differentiation of containment levels can be implemented immediately upon notification to their respective PMC Project Officers. Grantees may also choose to wait until PY 09 after training on the specific containment levels identified in the Minimum Standards.

The revised LSW benchmark training curriculum is included on the DVD and CD as Attachment 2 of this guidance. Because of file size due to pictures and video clips, downloading additional copies from a website is prohibitive. Instead, grantees are strongly encouraged to make additional copies from the enclosed discs for local agencies and training staff within their service territory. For grantees that wish to purchase additional copies, the DVD/CD set is available for a nominal charge (cost of reproduction and shipping) from Montana State University (mvogel@montana.edu).

This benchmark training adheres to the standards of WPN 08-6 and helps prepare the network for the requirements that will be in effect in PY 2010.

Please note: The curriculum on disc is designed to support the classroom and hands on curriculum, as required by DOE. It is expected that each LSW training will include a hands-on training component to augment the curriculum.

Pollution Occurrence Insurance
Beginning in PY09, DOE no longer requires Pollution Occurrence Insurance (POI) but still strongly recommends POI. The costs of POI can be charged to the grant as part of the Liability Insurance. However, if a state or local agency chooses to NOT hold POI coverage and damage occurs because of not following all aspects of Lead Safe Weatherization or there is disturbance to any other environmental pollutants, the cost to do remediation, clean up, relocation, medical expenses or any other resulting costs may not be charged to the contract and must be covered by another funding mechanism.

POI is discussed further in Weatherization Program Notice 02-6. Additional information about POI coverage can also be found on the WAPTAC website.

Client Notification
As of December 22, 2008, all agencies must begin using the lead notification publication, "Renovate Right – Important Lead Hazard Information for Families, Child Care Providers and Schools." This publication replaces "Protect Your Child From Lead in Your Home." Agencies are advised, EPA does not have mass quantities available for purchase but instead, has provided the material on their website for agencies to duplicate.

The following link is the link for the "Renovate Right" publication:
http://www.epa.gov/lead/pubs/renovaterightbrochure.pdf

CONCLUSION: DOE acknowledges the complexity of LSW issues, as well as unknown requirements for years beyond 2009, and recognizes there may be elements that will require still further clarification.

Requirements, as mentioned in WPN 08-6 will be addressed in future notice related to 2010 implementation of Certified Renovators, training issues, firm status and the costs related to future certifications.

DOE will continue to provide additional updates through Program Notices in an effort to keep the Weatherization network informed.

Gilbert P. Sperling
Program Manager
Office of Weatherization & Intergovernmental Program
Energy Efficiency and Renewable Energy

Attachment: DOE Benchmark Curriculum CD and DVD

Federal Register

Tuesday,
April 22, 2008

Part II

Environmental Protection Agency

40 CFR Part 745

Lead; Renovation, Repair, and Painting Program; Lead Hazard Information Pamphlet; Notice of Availability; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 745

[EPA–HQ–OPPT–2005–0049; FRL–8355–7]

RIN 2070–AC83

Lead; Renovation, Repair, and Painting Program

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is issuing a final rule under the authority of section 402(c)(3) of the Toxic Substances Control Act (TSCA) to address lead-based paint hazards created by renovation, repair, and painting activities that disturb lead-based paint in target housing and child-occupied facilities. ''Target housing'' is defined in TSCA section 401 as any housing constructed before 1978, except housing for the elderly or persons with disabilities (unless any child under age 6 resides or is expected to reside in such housing) or any 0-bedroom dwelling. Under this rule, a child-occupied facility is a building, or a portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may be located in public or commercial buildings or in target housing. This rule establishes requirements for training renovators, other renovation workers, and dust sampling technicians; for certifying renovators, dust sampling technicians, and renovation firms; for accrediting providers of renovation and dust sampling technician training; for renovation work practices; and for recordkeeping. Interested States, Territories, and Indian Tribes may apply for and receive authorization to administer and enforce all of the elements of these new renovation requirements.

DATES: This final rule is effective June 23, 2008.

ADDRESSES: EPA has established a docket for this action under docket identification (ID) number EPA–HQ–OPPT–2005–0049. All documents in the docket are listed in the docket index available in regulations.gov. To access the electronic docket, go to *http://www.regulations.gov*, select ''Advanced Search,'' then ''Docket Search.'' Insert the docket ID number where indicated and select the ''Submit'' button. Follow the instructions on the regulations.gov website to view the docket index or access available documents. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available electronically at *http://www.regulations.gov*, or, if only available in hard copy, at the OPPT Docket. The OPPT Docket is located in the EPA Docket Center (EPA/DC) at Rm. 3334, EPA West Bldg., 1301 Constitution Ave., NW., Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding Federal holidays. The telephone number of the EPA/DC Public Reading Room is (202) 566–1744, and the telephone number for the OPPT Docket is (202) 566–0280. Docket visitors are required to show photographic identification, pass through a metal detector, and sign the EPA visitor log. All visitor bags are processed through an X-ray machine and subject to search. Visitors will be provided an EPA/DC badge that must be visible at all times in the building and returned upon departure.

FOR FURTHER INFORMATION CONTACT: *For general information contact*: Colby Lintner, Regulatory Coordinator, Environmental Assistance Division (7408M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460–0001; telephone number: (202) 554–1404; e-mail address: *TSCA-Hotline@epa.gov*.

For technical information contact: Mike Wilson, National Program Chemicals Division (7404T), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460–0001; telephone number: (202) 566-0521; e-mail address: *wilson.mike@epa.gov*.

SUPPLEMENTARY INFORMATION:

I. Does this Action Apply to Me?

You may be potentially affected by this action if you perform renovations of target housing or child-occupied facilities for compensation or dust sampling. ''Target housing'' is defined in section 401 of TSCA as any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child under age 6 resides or is expected to reside in such housing) or any 0-bedroom dwelling. Under this rule, a child-occupied facility is a building, or a portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least 2 different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may be located in public or commercial buildings or in target housing. Potentially affected entities may include, but are not limited to:

- Building construction (NAICS code 236), e.g., single family housing construction, multi-family housing construction, residential remodelers.
- Specialty trade contractors (NAICS code 238), e.g., plumbing, heating, and air-conditioning contractors, painting and wall covering contractors, electrical contractors, finish carpentry contractors, drywall and insulation contractors, siding contractors, tile and terrazzo contractors, glass and glazing contractors.
- Real estate (NAICS code 531), e.g., lessors of residential buildings and dwellings, residential property managers.
- Child day care services (NAICS code 624410).
- Elementary and secondary schools (NAICS code 611110), e.g., elementary schools with kindergarten classrooms.
- Other technical and trade schools (NAICS code 611519), e.g., training providers.
- Engineering services (NAICS code 541330) and building inspection services (NAICS code 541350), e.g., dust sampling technicians.

This listing is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in this unit could also be affected. The North American Industrial Classification System (NAICS) codes have been provided to assist you and others in determining whether this action might apply to certain entities. To determine whether you or your business may be affected by this action, you should carefully examine the applicability provisions in Unit III. If you have any questions regarding the applicability of this action to a particular entity, consult the technical person listed under **FOR FURTHER INFORMATION CONTACT**.

II. Background

A. What Action is the Agency Taking?

EPA is issuing a final rule under the authority of section 402(c)(3) of the

Toxic Substances Control Act (TSCA) to address lead-based paint hazards created by renovation, repair, and painting activities (hereinafter also referred to as renovation activities or renovation projects) that disturb lead-based paint in target housing and child-occupied facilities. ''Target housing'' is defined in TSCA section 401 as any housing constructed before 1978, except housing for the elderly or persons with disabilities (unless any child under age 6 resides or is expected to reside in such housing) or any 0-bedroom dwelling. Under this rule, a child-occupied facility is a building, or a portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may be located in public or commercial buildings or in target housing. This rule establishes requirements for training renovators, other renovation workers, and dust sampling technicians; for certifying renovators, dust sampling technicians, and renovation firms; for accrediting providers of renovation and dust sampling technician training; for renovation work practices; and for recordkeeping. Interested States, Territories, and Indian Tribes may apply for and receive authorization to administer and enforce all of the elements of these new renovation requirements.

1. *Information on lead and its health effects*. Lead is a soft, bluish metallic chemical element mined from rock and found in its natural state all over the world. Lead is virtually indestructible, is persistent, and has been known since antiquity for its adaptability in making various useful items. In modern times, it has been used to manufacture many different products, including paint, batteries, pipes, solder, pottery, and gasoline. Through the 1940's, paint manufacturers frequently used lead as a primary ingredient in many oil-based interior and exterior house paints. Usage gradually decreased through the 1950's and 1960's as titanium dioxide replaced lead and as latex paints became more widely available.

Lead has been demonstrated to exert ''a broad array of deleterious effects on multiple organ systems via widely diverse mechanisms of action.'' This array of health effects, the evidence for which is comprehensively described in EPA's Air Quality Criteria for Lead document (Ref. 1), includes heme biosynthesis and related functions; neurological development and function; reproduction and physical development; kidney function; cardiovascular function; and immune function. There is also some evidence of lead carcinogenicity, primarily from animal studies, together with limited human evidence of suggestive associations.

Of particular interest for present purposes is the delineation of lowest observed effect levels for those lead-induced effects that are most clearly associated with blood lead less 10 μg/dL in children and/or adults and are, therefore, of greatest public health concern (Ref. 1, at 8-60). As evident from the Criteria Document, neurotoxic effects in children and cardiovascular effects in adults are among those best substantiated as occurring at blood-lead concentrations as low as 5 to 10 μg/dL (or possibly lower); and these categories of effects are currently clearly of greatest public health concern. Other newly demonstrated immune and renal system effects among general population groups are also emerging as low-level lead-exposure effects of potential public health concern. (Ref. 1, at 8-60)

The overall weight of the available evidence provides clear substantiation of neurocognitive decrements being associated in young children with blood lead concentrations in the range of 5–10 micrograms per deciliter (μg/dL), and possibly somewhat lower. Some newly available analyses appear to show lead effects on the intellectual attainment of preschool and school age children at population mean concurrent blood-lead levels ranging down to as low as 2 to 8 μg/dL. A decline of 6.2 points in full scale IQ for an increase in concurrent blood lead levels from 1 to 10 μg/dL has been estimated, based on a pooled analysis of results derived from seven well-conducted prospective epidemiologic studies (Ref. 1, at E-9).

Epidemiologic studies have consistently demonstrated associations between lead exposure and enhanced risk of deleterious cardiovascular outcomes, including increased blood pressure and incidence of hypertension. A meta-analysis of numerous studies estimates that a doubling of blood lead level (e.g., from 5 to 10 μg/dL) is associated with ~1.0 mm Hg increase in systolic blood pressure and ~0.6 mm Hg increase in diastolic pressure. (Ref. 1, at E-10).

Both epidemiologic and toxicologic studies have shown that environmentally relevant levels of lead affect many different organ systems (Ref. 1, at E-8). Please see Ref. 1 for further information.

The nervous system has long been recognized as a target of lead toxicity, with the developing nervous system affected at lower exposures than the mature system. While blood lead levels in U.S. children ages 1 to 5 years have decreased notably since the late 1970's, newer studies have investigated and reported associations of effects on the neurodevelopment of children at population mean concurrent blood lead levels ranging down to as low as 2 to 8 μg/dL (Ref. 1, at E-9). Functional manifestations of lead neurotoxicity during childhood include sensory, motor, cognitive and behavioral impacts. Investigating associations between lead exposure and behavior, mood, and social conduct of children has been an emerging area of research (see Ref. 1, at 6.2.6). Early studies indicated linkages between lower-level lead toxicity and behavioral problems (e.g., aggression, attentional problems, and hyperactivity) in children.

Effects of lead on neurobehavior have been reported with remarkable consistency across numerous studies of various designs, populations studied, and developmental assessment protocols. The negative impact of lead on IQ and other neurobehavioral outcomes persist in most recent studies following adjustment for numerous confounding factors including social class, quality of caregiving, and parental intelligence. Moreover, these effects appear to persist into adolescence and young adulthood. Cognitive effects associated with lead exposures that have been observed in some studies include decrements in intelligence test results, such as the widely used IQ score, and in academic achievement as assessed by various standardized tests as well as by class ranking and graduation rates. Associations between lead exposure and academic achievement observed in the above-noted studies were significant even after adjusting for IQ, suggesting that lead-sensitive neuropsychological processing and learning factors not reflected by global intelligence indices might contribute to reduced performance on academic tasks (Ref. 1, at 8–29).

Other cognitive effects observed in studies of children have included effects on attention, executive functions, language, memory, learning and visuospatial processing with attention and executive function effects observed. The evidence for the role of lead in this suite of effects includes experimental animal findings.These animal toxicology findings provide strong biological plausibility in support of the concept that lead may impact one or more of these specific cognitive

functions in humans (Ref. 1, at 8–30). Further, lead-induced deficits observed in animal and epidemiological studies, for the most part, have been found to be persistent in the absence of markedly reduced environmental exposures. It is additionally important to note that there may be long-term consequences of such deficits over a lifetime. Studies examining aspects of academic achievement related to lead exposure indicate the association of deficits in academic skills and performance, which in turn lead to enduring and important effects on objective parameters of success in real life (Ref. 1, at 6–76).

Lead bioaccumulates, and is only slowly removed, with bone lead serving as a blood lead source for years after exposure and may serve as a significant source of exposure. Bone accounts for more than 90% of the total body burden of lead in adults and 70% in children (Ref. 1, at 4–42). In comparison to adults, bone mineral turns over much more quickly in children as a result of growth. Changes in blood lead concentration in children are thought to parallel more closely to changes in total body burden. Therefore, blood lead concentration is often used in epidemiologic and toxicological studies as an index of exposure and body burden for children.

Paint that contains lead can pose a health threat through various routes of exposure. House dust is the most common exposure pathway through which children are exposed to lead-based paint hazards. Dust created during normal lead-based paint wear (especially around windows and doors) can create an invisible film over surfaces in a house. Children, particularly younger children, are at risk for high exposures of lead-based paint dust via hand-to-mouth exposure, and may also ingest lead-based paint chips from flaking paint on walls, windows, and doors. Lead from exterior house paint can flake off or leach into the soil around the outside of a home, contaminating children's play areas. Cleaning and renovation activities may actually increase the threat of lead-based paint exposure by dispersing lead dust particles in the air and over accessible household surfaces. In turn, both adults and children can receive hazardous exposures by inhaling the dust or by ingesting lead-based paint dust during hand-to-mouth activities.

2. *Statutory and regulatory background*. In 1992, Congress found that low-level lead poisoning was widespread among American children, affecting, at that time, as many as 3,000,000 children under age 6; that the ingestion of household dust containing lead from deteriorating or abraded lead-based paint was the most common cause of lead poisoning in children; and that the health and development of children living in as many as 3,800,000 American homes was endangered by chipping or peeling lead paint, or excessive amounts of lead-contaminated dust in their homes. Congress further determined that the prior Federal response to this threat was insufficient and enacted Title X of the Housing and Community Development Act of 1992, Public Law 102–550 (also known as the Residential Lead-Based Paint Hazard Reduction Act of 1992) (''the Act'' or ''Title X''). Title X established a national goal of eliminating lead-based paint hazards in housing as expeditiously as possible and provided a leadership role for the Federal government in building the infrastructure necessary to achieve this goal.

Subsequently, President Clinton created the President's Task Force on Environmental Health Risks and Safety Risks to Children. Co-chaired by the Secretary of the Department of Health and Human Services (HHS) and the Administrator of EPA, the Task Force consisted of representatives from 16 Federal departments and agencies. The Task Force set a Federal goal of eliminating childhood lead poisoning by the year 2010 (Ref. 2). In October 2001, President Bush extended the work of the Task Force for an additional 18 months beyond its original charter. Reducing lead poisoning in children was the Task Force's top priority. Although more work remains to be done, significant progress has been made towards reducing lead poisoning in children. The estimated percentage of children with blood lead levels above the CDC level of concern declined from 4.4% between 1991 and 1994 to 1.6% between 2003 and 2004. More information on Federal efforts to address lead poisoning, including the responsibilities of EPA and other Federal Agencies under Title X, can be found in Units III.A. and III.B. of the preamble to the 2006 Lead; Renovation, Repair, and Painting Program Proposed Rule (''2006 Proposal'') (Ref. 3).

The Act added a new title to TSCA entitled ''Title IV–Lead Exposure Reduction.'' Most of EPA's responsibilities for addressing lead-based paint hazards can be found in this title, with section402 of TSCA being one source of the rulemaking authority to carry out these responsibilities. TSCA section 402(a) directs EPA to promulgate regulations covering lead-based paint activities to ensure persons performing these activities are properly trained, that training programs are accredited, and that contractors performing these activities are certified. These regulations must contain standards for performing lead-based paint activities, taking into account reliability, effectiveness, and safety. On August 29, 1996, EPA promulgated final regulations under TSCA section 402(a) that govern lead-based paint inspections, lead hazard screens, risk assessments, and abatements in target housing and child-occupied facilities (also referred to as the Lead-based Paint Activities Regulations). These regulations, codified at 40 CFR part 745, subpart L, contain an accreditation program for training providers and training and certification requirements for lead-based paint inspectors, risk assessors, project designers, abatement supervisors, and abatement workers. Work practice standards for lead-based paint activities are included. Pursuant to TSCA section 404, provision was made for interested States, Territories, and Indian Tribes to apply for and receive authorization to administer their own lead-based paint activities programs.

On June 9, 1999, the Lead-based Paint Activities Regulations were amended to include a fee schedule for training programs seeking EPA accreditation and for individuals and firms seeking EPA certification (Ref. 5). These fees were established as directed by TSCA section 402(a)(3), which requires EPA to recover the cost of administering and enforcing the lead-based paint activities requirements in unauthorized States. The most recent amendment to the Lead-based Paint Activities Regulations occurred on April 8, 2004, when notification requirements were added to help EPA monitor compliance with the training and certification provisions and the abatement work practice standards (Ref. 5).

Another of EPA's responsibilities under Title X is to require that purchasers and tenants of target housing and occupants of target housing undergoing renovation are provided information on lead-based paint and lead-based paint hazards. As directed by TSCA section 406(a), the Consumer Products Safety Commission (CPSC), the Department of Housing and Urban Development (HUD), and EPA, in consultation with the Centers for Disease Control and Prevention (CDC), jointly developed a lead hazard information pamphlet entitled *Protect Your Family From Lead in Your Home* (''PYF'') (Ref. 7). This pamphlet was designed to be distributed as part of the disclosure requirements of section 1018 of Title X and TSCA section 406(b), to provide home purchasers, renters,

owners, and occupants with the information necessary to allow them to make informed choices when selecting housing to buy or rent, or deciding on home renovation projects. The pamphlet contains information on the health effects of lead, how exposure can occur, and steps that can be taken to reduce or eliminate the risk of exposure during various activities in the home.

TSCA section 406(b) directs EPA to promulgate regulations requiring persons who perform renovations for compensation in target housing to provide a lead hazard information pamphlet to owners and occupants of the home being renovated. These regulations, promulgated on June 1, 1998, are codified at 40 CFR part 745, subpart E (Ref. 8). The term ''renovation'' is not defined in the statute, but the regulation, at 40 CFR 745.83, defines a ''renovation'' as the modification of any existing structure, or portion of a structure, that results in the disturbance of painted surfaces. The regulations specifically exclude lead-based paint abatement projects as well as small projects that disturb 2 square feet or less of painted surface per component, emergency projects, and renovations affecting components that have been found to be free of lead-based paint, as that term is defined in the regulations, by a certified inspector or risk assessor. These regulations require the renovation firm to document compliance with the requirement to provide the owner and the occupant with the PYF pamphlet. TSCA section 404 also allows States to apply for, and receive authorization to administer, the TSCA section 406(b) requirements.

TSCA section 403 directs EPA to promulgate regulations that identify, for the purposes of Title X and Title IV of TSCA, dangerous levels of lead in paint, dust, and soil. These regulations were promulgated on January 5, 2001, and codified at 40 CFR part 745, subpart D (Ref. 9). These hazard standards define lead-based paint hazards in target housing and child-occupied facilities as paint-lead, dust-lead, and soil-lead hazards. A paint-lead hazard is defined as any damaged or deteriorated lead-based paint, any chewable lead-based painted surface with evidence of teeth marks, or any lead-based paint on a friction surface if lead dust levels underneath the friction surface exceed the dust-lead hazard standards. A dust-lead hazard is surface dust that contains a mass-per-area concentration of lead equal to or exceeding 40 micrograms per square foot ($\mu g/ft^2$) on floors or 250 $\mu g/ft^2$ on interior windowsills based on wipe samples. A soil-lead hazard is bare soil that contains total lead equal to or exceeding 400 parts per million (ppm) in a play area or average of 1,200 ppm of bare soil in the rest of the yard based on soil samples.

TSCA section 402(c) addresses renovation and remodeling. For the stated purpose of reducing the risk of exposure to lead in connection with renovation and remodeling activities, section 402(c)(1) of TSCA requires EPA to promulgate and disseminate guidelines for the conduct of such activities that may create a risk of exposure to dangerous levels of lead. In response to this statutory directive, EPA developed the guidance document entitled*Reducing Lead Hazards when Remodeling Your Home* in consultation with industry and trade groups (Ref. 10). This document has been widely disseminated to renovation and remodeling stakeholders through the National Lead Information Center, EPA Regions, and EPA's State and Tribal partners and is available at *http://www.epa.gov/lead/pubs/rrpamph.pdf*.

TSCA section 402(c)(2) directs EPA to study the extent to which persons engaged in various types of renovation and remodeling activities are exposed to lead during such activities or create a lead-based paint hazard regularly or occasionally. EPA conducted this study in four phases. Phase I, the Environmental Field Sampling Study (Ref. 11), evaluated the amount of leaded dust released by the following activities:

- Paint removal by abrasive sanding.
- Removal of large structures, including demolition of interior plaster walls.
- Window replacement.
- Carpet removal.
- HVAC repair or replacement, including duct work.
- Repairs resulting in isolated small surface disruptions, including drilling and sawing into wood and plaster.

Phase II, the Worker Characterization and Blood Lead Study (Ref. 12), involved collecting data on blood lead and renovation and remodeling activities from workers. Phase III, the Wisconsin Childhood Blood-Lead Study (Ref. 13.), was a retrospective study focused on assessing the relationship between renovation and remodeling activities and children's blood-lead levels. Phase IV, the Worker Characterization and Blood-Lead Study of R&R Workers Who Specialize in Renovations of Old or Historic Homes (Ref. 14), was similar to Phase II, but focused on individuals who worked primarily in old historic buildings. More information on the results of these peer-reviewed studies can be found in Unit III.C.1. of the preamble to the 2006 Proposal.

3. *Summary of 2006 Proposal*. TSCA section 402(c)(3) directs EPA to revise the Lead-based Paint Activities Regulations to apply to renovation or remodeling activities that create lead-based paint hazards. In the 2006 Proposal, EPA proposed to conclude that any renovation activity that disturbs lead-based paint can create significant amounts of leaded dust, that most activities created lead-based paint hazards, and that some activities can be reasonably anticipated to create lead-based paint hazards. Accordingly, on January 10, 2006, EPA issued a Notice of Proposed Rulemaking covering renovation performed for compensation in target housing (Ref. 3). The 2006 Proposal contained requirements designed to address lead-based paint hazards created by renovation, repair, and painting activities that disturb lead-based paint. The 2006 Proposal included requirements for training renovators, other renovation workers, and dust sampling technicians; for certifying renovators, dust sampling technicians, and renovation firms; for accrediting providers of renovation and dust sampling technician training; for renovation work practices; and for recordkeeping. The 2006 Proposal would have made the rule effective in two stages. Initially, the rule would have applied to all renovations for compensation performed in target housing where a child with an increased blood lead level resided and rental target housing built before 1960. The rule would also have applied to owner-occupied target housing built before 1960, unless the person performing the renovation obtained a statement signed by the owner-occupant that the renovation would occur in the owner's residence and that no child under age 6 resided there. As proposed, the rule would take effect 1 year later in all rental target housing built between 1960 and 1978 and owner-occupied target housing built between 1960 and 1978. EPA also proposed to allow interested States, Territories, and Indian Tribes the opportunity to apply for and receive authorization to administer and enforce all of the elements of the new renovation provisions.

4. *Summary of 2007 Supplemental Proposal*. EPA received approximately 250 comments on its 2006 Proposal. These comments came from a wide variety of commenters, including State and local governments, industry groups, advocacy groups, renovation contractors, training providers, and individuals. A significant number of these commenters observed that the

proposal did not cover buildings where children under age 6 spend a great deal of time, such as day care centers and schools. Commenters noted that the risk posed to children from lead-based paint hazards in schools and day care centers is likely to be equal to, if not greater than, the risk posed from these hazards at home. These commenters suggested that EPA expand its proposal to include such places, and several suggested that EPA use the existing definition of ''child-occupied facility'' in 40 CFR 745.223 to define the expanded scope of coverage. EPA felt that these comments had merit, and, because adding child-occupied facilities was beyond the scope of the 2006 Proposal, an expansion of the 2006 Proposal was necessary to give this issue full and fair consideration. Accordingly, on June 5, 2007, EPA issued a Supplemental Notice of Proposed Rulemaking (2007 Supplemental Proposal) to add child-occupied facilities to the universe of buildings covered by the 2006 Proposal (Ref. 15).

EPA proposed to use the definition of ''child-occupied facility'' from 40 CFR 745.223 with some modifications to make it consistent with the statutory focus on children under age 6 and to better describe the applicability of the term in target housing and in public or commercial buildings. The 2007 Supplemental Proposal would apply all of the accreditation, training, certification, work practice, and recordkeeping requirements to renovations in child-occupied facilities in the same way that the requirements would apply to renovations in target housing. In addition, EPA proposed to extend the lead hazard information distribution requirements of the Pre-Renovation Education Rule, 40 CFR part 745, subpart E, to renovations in child-occupied facilities. Specifically, EPA proposed that persons performing renovations in child-occupied facilities in public or commercial buildings would have to provide a lead hazard information pamphlet to the owner of the building and to the proprietor of the child-occupied facility. In addition, general information about the renovation would have to be provided to parents and guardians of children under age 6 using the child-occupied facility. The 2007 Supplemental Proposal further provided that a lead hazard information pamphlet would have to be provided to parents and guardians or made available upon request. EPA received 12 comments on its 2007 Supplemental Proposal.

5. *2007 Notice of Data Availability*. After the 2006 proposal, two new studies assessing hazards associated with renovation activities were completed. On March 16, 2007, EPA announced the availability of these new studies in the docket for this rulemaking (Ref. 16). EPA requested comment on how these studies might inform provisions of the final rule. EPA received nearly 100 comments in response to its notice. Comments specifically on the studies are discussed below. Comments on how the studies might affect the final rule are discussed along with the provisions of the final rule in Unit III.E. of this preamble.

a. Characterization of Dust Lead Levels after Renovation, Repair, and Painting Activities. EPA conducted a field study (Characterization of Dust Lead Levels after Renovation, Repair, and Painting Activities) (the ''Dust Study'') to characterize dust lead levels resulting from various renovation, repair, and painting activities (Ref. 17). This study, completed in January 2007, was designed to compare environmental lead levels at appropriate stages after various types of renovation, repair, and painting preparation activities were performed on the interiors and exteriors of target housing units and child-occupied facilities. All of the jobs disturbed more than 2 square feet of lead-based paint, so they would not have been eligible for the minor maintenance exception from the 2006 Proposal. The renovation activities were conducted by local professional renovation firms, using personnel who received lead safe work practices training using the curriculum developed by EPA and HUD, ''Lead Safety for Remodeling, Repair, and Painting'' (Ref. 18). The activities conducted represented a range of activities that would be permitted under the 2006 Proposal, including work practices that are restricted or prohibited for abatements under 40 CFR 745.227(e)(6). Of particular interest was the impact of using specific work practices that renovation firms would be required to use under the proposed rule, such as the use of plastic to contain the work area and a multi-step cleaning protocol, as opposed to more typical work practices.

The design of the Dust Study was peer-reviewed by experts in fields related to the study. They reviewed the design and quality assurance plan independently and provided written comments to EPA. The results of this peer-review are summarized in Unit 2 of the Dust Study report (Ref. 17). In addition, the record of this peer-review, which includes the comments from the reviewers and EPA's responses, has been placed into the public docket for this action.

In the Dust Study, 12 different interior and 12 different exterior renovation activities were performed at 7 vacant target housing units in Columbus, Ohio, and 8 vacant target housing units (including four apartments) in Pittsburgh, Pennsylvania. Three different interior and three different exterior renovation activities were conducted at a building representing a child-occupied facility, a vacant school in Columbus. The presence of lead-based paint was confirmed by laboratory analysis before a building was assigned a particular renovation activity or set of activities. Before interior renovation activities were performed, the floors and windowsills in the work area and adjacent rooms were cleaned. In most cases, pre-work cleaning resulted in dust lead levels on floors of less than 10 $\mu g/ft^2$; nearly all floors were less than 40 $\mu g/ft^2$ before work started. Most windowsills that would be used for later sampling were cleaned to dust lead levels less than 250 $\mu g/ft^2$. In the few cases where that level was not achieved on a windowsill needed for sampling, dust collection trays were used. Interior renovation activities included the following jobs:

- Making cut-outs in the walls.
- Replacing a window from the inside.
- Removing paint with a high temperature (greater than 1100 degrees Fahrenheit) heat gun.
- Removing paint with a low temperature (less than 1100 degrees Fahrenheit) heat gun.
- Removing paint by dry scraping.
- Removing kitchen cabinets.
- Removing paint with a power planer.

To illustrate the impact of the containment plastic and the specialized cleaning and cleaning verification protocol that would be required by the 2006 Proposal, each activity was performed a minimum of four times:

- With the plastic containment described in the 2006 Proposal followed by the cleaning protocol described in the proposal.
- With the plastic containment described in the 2006 Proposal followed by dry sweeping and vacuuming with a shop vacuum.
- With no plastic containment followed by the cleaning protocol described in the 2006 Proposal.
- With no plastic containment followed by dry sweeping and vacuuming with a shop vacuum.

Dust samples were collected after the renovation work was completed, after cleaning, and after cleaning verification. If a building was being used again for the same job under different work

practices, or for a completely different job, the unit was recleaned and retested prior to starting the next job. All buildings were cleaned and tested after the last job.

Geometric mean post-work, pre-cleaning floor dust lead levels in the work room were as follows (in μg/ft²):

- Cut-outs--422.
- Kitchen cabinet removal--958.
- Low temperature heat gun--2,080.
- Dry scraping--2,686.
- Window replacement--3,993.
- High temperature heat gun--7,737.
- Power planing--32,644.

Power planing is an activity very similar to power sanding in which a machine that operates at high speed generating large quantities of dust is used.

Where baseline practices, i.e., no containment, dry sweeping, and vacuuming with a shop vacuum, were used, the geometric mean post-job floor dust lead levels in the work room were as follows (in μg/ft²):

- Cut-outs--22.
- Kitchen cabinet removal--58.
- Low temperature heat gun--41.
- Dry scraping--66.
- Window replacement--135.
- High temperature heat gun--445.
- Power planing--450.

The package of proposed rule requirements, i.e., containment, specialized cleaning, and cleaning verification, resulted in the lowest geometric mean dust lead levels in the work room at the end of a job. These results were as follows (in μg/ft²):

- Cut-outs--5.
- Kitchen cabinet removal--12.
- Low temperature heat gun--24.
- Dry scraping--30.
- Window replacement--33.
- High temperature heat gun--36.
- Power planing--148.

Windowsill sample results were similar; the geometric mean dust lead levels after renovation activities performed in accordance with the proposed rule exceeded 250 μg/ft² only where power planing or a high temperature heat gun were used. When baseline practices were used, the geometric mean dust lead levels on the windowsills exceeded 250 μg/ft² for kitchen cabinet removal, window replacement, high temperature heat gun use, and power planing.

Exterior renovation activities performed as part of the study included the following:

- Replacing a door and doorway.
- Replacing fascia boards, soffits, and other trim.
- Removing paint with a high temperature (greater than 1100 degrees Fahrenheit) heat gun.
- Removing paint with a low temperature (less than 1100 degrees Fahrenheit) heat gun.
- Removing paint by dry scraping.
- Removing paint with a needle gun.
- Removing paint with power sanding or grinding.
- Removing paint with a torch or open flame.

For the exterior jobs, plastic sheeting was placed on the ground to catch the debris and dust from the job, in accordance with the requirements of the proposed rule. Additional plastic sheeting was laid out beneath and beyond the ''proposed rule'' plastic. Trays to collect dust and debris were placed on top of and underneath the ''proposed rule'' plastic. Trays were also placed just outside of the ''proposed rule'' plastic to assess how far the dust was spreading. A vertical containment, as high as the work zone, was erected at the end of the additional plastic.

The use of the ''proposed rule'' plastic as a ground covering captured large amounts of leaded dust. For all job types except removing paint with a torch, there was a substantial difference between the amount of lead captured by the ''proposed rule'' plastic and the amount under the ''proposed rule'' plastic. Including both bulk debris and dust, geometric mean lead levels in exterior samples from the collection trays on top of the ''proposed rule'' plastic ranged from a low of 60,662 μg/ft² for the door replacement activity to a high of 7,216,358 μg/ft² for removing paint with a high temperature heat gun. Geometric mean lead levels from the collection trays under the ''proposed rule'' plastic ranged from a low of 32 μg/ft² for door replacement to 8,565 μg/ft² for removing paint with a torch.

This regulatory action was supported by the Dust Study discussed above. Therefore, EPA conducted a peer review in accordance with OMB's Final Information Quality Bulletin for Peer Review. EPA requested this review from the Clean Air Scientific Advisory Committee (CASAC) Lead Review Panel. The CASAC, which is comprised of seven members appointed by the EPA Administrator, was established under the Clean Air Act as an independent scientific advisory committee. The CASAC's comments on the Dust Study, along with EPA's responses, have been placed into the public docket for this action. More information on the CASAC consultation process, along with background documents, is available on EPA's website at *http://www.epa.gov/lead/pubs/casac.htm*.

According to the peer review report, the CASAC Panel found

> . . .that the [Dust Study] was reasonably well-designed, considering the complexity of the problem, and that the report provided information not available from any other source. The study indicated that the rule cleaning procedures reduced the residual lead (Pb) remaining after a renovation more than did the baseline cleaning procedures. Another positive aspect of the Dust Study was that it described deviations from the protocol when they occurred.

The CASAC Panel also contended that the limited data from residential housing units and child-occupied facilities included in the Dust Study, most likely do not represent a statistically valid sample of housing at the national level. They noted that there are aspects of the study that would underestimate the levels of lead-loadings while other aspects of the study would overestimate the loadings. EPA agrees that the Dust Study is not nationally representative of all housing. EPA notes that there are several reasons why this is the case, including the fact that all of the housing studied was built during 1925 or earlier, and a large number of the floors were in poor condition. A major purpose of the Dust Study was to assess the proposed work practices. A statistically valid sample of housing at the national level is not needed to assess the work practices. If anything, the Dust Study is conservative with respect to the age of housing because it studied older houses and therefore is appropriate for assessing the effectiveness of the work practices.

In addition to the Dust Study which directly supported this regulatory action, several other studies are discussed throughout the preamble which may or may not have been peer reviewed.

b. Lead-Safe Work Practices Survey Project. The National Association of Home Builders (NAHB) conducted a survey that assessed renovation and remodeling activities to measure levels of lead dust generated by home improvement contractors (Ref. 19). The stated objective of this survey, completed in November 2006, was to measure the amount of lead dust generated during typical renovation and remodeling activities and assess whether routine renovation and remodeling activities increased lead dust levels in the work area and on the property.

The activities evaluated during the survey were selected in consultation with remodeling contractors. NAHB believes that these activities represent the most common jobs performed by renovation and remodeling firms. The renovations were performed by professional renovation and remodeling

contractors from each of the communities where the properties were located. All of the workers who participated in this project had previously attended and successfully completed the EPA/HUD curriculum for *Lead Safety for Remodeling, Repair, & Painting.*

According to the NAHB survey, anEPA-certified lead-based paint inspector confirmed the presence of lead-based paint in all of the properties considered for this survey. Previous inspection reports were consulted if the inspections conformed to the HUD Guidelines for lead-based paint inspections. Properties used in this survey included a single family home in Illinois, two single-family homes and a duplex in Connecticut, and an apartment above a storefront in Wisconsin.

The NAHB survey evaluated the following activities:

- Wall and ceiling removal (demolition).
- Wall and ceiling modification.
- Window and door removal and/or replacement (no sanding).
- Window and door alteration (no sanding).
- Sanding on windows and doors.
- Kitchen or bath cabinet removal.
- Baseboard and stair removal.
- Surface preparation (sanding).
- Sawing into wood and plaster.

Activities were performed in one of three ways: Using the work practices presented in the EPA/HUD curriculum, using modified work practices (one or more of the dust control or cleanup methods discussed in the EPA/HUD curriculum), or routine renovation practices.

Area air samples were collected before, during and after the work activity. Personal breathing zone air samples were collected during the work activity. Dust wipe samples were collected before work started and after final clean-up. Dust wipe samples were routinely collected from floors near the work activity and in some cases collected from a windowsill and/or window well.

In comparing the mean dust lead levels before the activities with the mean dust lead levels after the activities, the NAHB concluded that the renovation activities surveyed did not create new lead dust hazards overall. However, even after clean-up was conducted, over half of the 60 individual renovation activities studied resulted in an increase in dust lead levels on at least one surface. In most cases, the increase was considerably greater than the regulatory dust-lead hazard standard for that surface.

6. *Statutory finding and regulatory approach—TSCA section 402(c)(3) determination.* TSCA section 402(c)(3) directs EPA to revise the regulations issued under TSCA section 402(a), the Lead-based Paint Activities Regulations, to apply to renovation or remodeling activities that create lead-based paint hazards. EPA finds that renovation, repair, and painting activities that disturb lead-based paint create lead-based paint hazards. This finding is based upon EPA's Environmental Field Sampling Study and corroborated by the Dust Study and the NAHB survey (Refs. 11, 17, and 19).

In the 2006 Proposal, EPA proposed to conclude that any renovation activity that disturbs lead-based paint can create significant amounts of leaded dust, that most activities created lead-based paint hazards, and that some activities can be reasonably anticipated to create lead-based paint hazards. EPA's proposed conclusions were based upon the results of the Environmental Field Sampling Study, which examined, on a variety of components using a variety of tools and methods, activities that EPA had determined were representative of the paint-disturbing activities that typically occur during renovations. The activities were:

- Paint removal by abrasive sanding.
- Window replacement.
- HVAC duct work.
- Demolition of interior plaster walls.
- Drilling into wood.
- Drilling into plaster.
- Sawing into wood.
- Sawing into plaster.

Specifically, EPA proposed to conclude that all of the activities studied in the Environmental Field Sampling Study, with the exception of drilling into plaster, can create lead-based paint hazards. With respect to drilling into plaster, where lead-based paint is present, EPA proposed to conclude that this activity can reasonably be anticipated to create lead-based paint hazards. The Environmental Field Sampling Study found that, with the exception of drilling into plaster, all renovation and remodeling activities, when conducted where lead-based paint is present, generated lead loadings on floors at a distance of 5 to 6 feet from the activity that exceeded EPA's dust-lead hazard standard of 40 μg/ft^2. However, upon further review, it is apparent that the study also found that drilling into plaster created dust lead levels in the immediate vicinity of the activity that exceeded the dust-lead hazard standard. Thus, all the activities studied did in fact create lead-based paint hazards.

The 2006 Proposal cited the other phases of the TSCA section 402(c)(2) renovation and remodeling study to support EPA's proposed determination that any renovation, remodeling, or painting activity that disturbs lead-based paint can be reasonably anticipated to create lead-based paint hazards. Phase III, the Wisconsin Childhood Blood-Lead Study, found that children who live in homes where renovation and remodeling activities were performed within the past year are 30% more likely to have a blood lead-level that equals or exceeds 10 μg/dL, the level of concern established by CDC, than children living in homes where no such activity has taken place recently. Phases II and IV of the study, which evaluated worker exposures from renovation and remodeling activities, provide additional documentation of the significant and direct relationship between blood-lead levels and the conduct of certain renovation and remodeling activities. Phase II found a statistically significant association between increased blood lead levels and the number of days spent performing general renovation and remodeling activities, paint removal, and cleanup in pre-1950 buildings in the past month. Phase IV of the study found that persons performing renovation and remodeling activities in old historic buildings are more likely to have elevated blood lead levels than persons in the general population of renovation and remodeling workers.

In light of EPA's proposed determination, the 2006 Proposal included revisions to the existing Lead-based Paint Activities Regulations to extend them to renovation, remodeling, and painting activities in target housing, with certain exceptions. In proposing to extend these regulations to renovation, remodeling, and painting activities in child-occupied facilities, the 2007 Supplemental Proposal incorporated the proposed TSCA section 402(c)(3) determination.

Since the 2006 Proposal, EPA conducted the Dust Study and NAHB submitted the results of their survey. The results of the Dust Study confirm that renovation and remodeling activities that disturb lead-based paint create lead-based paint hazards. The Dust Study evaluated a number of common renovation activities, including replacing windows, removing kitchen cabinets, cutting into walls, and removing paint by high and low temperature heat guns, power tools, and dry scraping. The geometric mean post-work dust lead levels on work room floors ranged from a low of 422 μg/ft^2, or 10 times the dust-lead hazard

standard for floors, for cut-outs, to a high of 32,644 μg/ft² for power planing. Thus, all of the activities evaluated in the Dust Study created floor dust lead levels that exceeded 40 μg/ft², one of the measures that, in 40 CFR 745.65, defines a lead-based paint hazard. It is more difficult to evaluate the effect of disturbing lead-based paint in the NAHB Survey, since the survey did not involve collecting samples after work had been performed but before the post-renovation cleaning had begun. Nevertheless, even after post-renovation cleaning using a variety of methods, in more than half of the 60 experiments performed in this survey, the post-cleaning dust wipe sample results for at least one surface showed an increase greater than the TSCA section 403 hazard standard over pre-work levels. These experiments showing increased dust lead levels cover the range of activities evaluated in the NAHB Survey.

Therefore, in this action, EPA is issuing its determination that renovation, repair, and painting activities that disturb lead-based paint create lead-based paint hazards. Because the evidence shows that all such activities in the presence of lead-based paint create lead-based paint hazards, EPA is modifying its proposed finding, which distinguished between activities that create lead-based paint hazards and those that can reasonably be anticipated to create lead-based paint hazards, and instead concludes that renovation activities that disturb lead-based paint create lead-based paint hazards. Indeed, no commenter submitted data indicating that any renovation, repair, or painting activity should be exempt from regulation because it does not create lead-based paint hazards.

EPA received a large number of comments on this proposed finding. Many expressed support for EPA's determination that any renovation, repair, or painting activity that disturbs lead-based paint creates lead-based paint hazards. Some commenters, while expressing their support for this determination, also opined that the regulatory dust-lead hazard standards for floors and windowsills are too high. These commenters argued that recent scientific evidence shows that children experience adverse health effects at lower blood lead levels than previously thought, and since EPA's regulatory dust-lead hazard standards were set with reference to a blood lead level of 10 μg/dL, the CDC level of concern, the dust-lead hazard standards must be lowered. EPA agrees that recent studies demonstrate that neurocognitive effects occur at blood lead levels below the current CDC level of concern. In fact, EPA's most recent Air Quality Criteria for Lead document, issued in October, 2006, describes several epidemiologic studies published in the last 5 years that observed significant lead-induced IQ decrements in children with some effects observed at blood lead levels of 5 μg/dL and lower (Ref. 1). The document also notes that other recent studies observed significant associations at low blood-lead levels for other neurotoxicity endpoints in addition to IQ, such as arithmetic and reading scores, attentional behavior, and neuromotive function. However, EPA is not addressing the appropriateness of the existing dust-lead hazard standards in this rulemaking. The original hazard standards were set through a separate rulemaking process under TSCA section 403 that allowed for input from all of the parties that would be affected by the standards. Furthermore, EPA is concerned that a full review of the available evidence and other considerations affecting the hazard standards as part of this rulemaking would result in a significant delay in promulgating training, certification, and work practice standards for renovation activities. EPA did not propose to modify the TSCA section 403 hazard standard levels in this rulemaking and has not undertaken the significant analyses that would need to be performed in order to establish different standards. Accordingly, EPA is not able, in this final rule, to modify the regulatory hazard standard. In any event, since EPA finds that renovation activities that disturb lead-based paint create lead-paint hazards, lowering the hazard standard would not affect EPA's finding.

Some commenters objected to EPA's proposed determination that renovation, repair, or painting activities that disturb lead-based paint create lead-based paint hazards. Some commenters interpreted EPA's statutory authority to regulate renovation and remodeling under TSCA section 402(c)(3) as being limited to those renovation and remodeling activities for which EPA can prove a link between the activity and the blood lead action level established by CDC for public health intervention. These commenters contend that the failure to prove such a link means that renovation and remodeling activities do not create lead-based paint hazards. This interpretation is not supported by the plain language of the statute. TSCA section 402(c)(3) requires EPA to regulate renovation and remodeling activities that create lead-based paint hazards. The term ''lead-based paint hazard'' is defined in TSCA section 401 as ''any condition that causes exposure to lead from lead-contaminated dust . . . that would result in adverse human health effects as established by the Administrator under this subchapter.'' TSCA section 403 directs EPA to promulgate regulations which ''identify, for purposes of this subchapter and the Residential Lead-Based Paint Hazard Reduction Act of 1992, lead-based paint hazards, lead-contaminated dust, and lead-contaminated soil.'' The TSCA section 403 regulations define dust-lead hazards as levels that equal or exceed 40 μg/ft² of lead on floors or 250 μg/ft² of lead on interior windowsills. Therefore, EPA interprets TSCA as directing it to regulate renovation and remodeling activities if such activities create dust lead levels that exceed the standards for dust-lead hazards established under TSCA section 403. Again, the Environmental Field Sampling Study, the Dust Study, and the NAHB survey all demonstrate that renovation and remodeling activities that disturb lead-based paint create dust lead levels that exceed the hazard standards in 40 CFR 745.65.

EPA also interprets the scientific evidence for a link between renovations and the CDC blood lead action level differently than do these commenters. EPA's Wisconsin Childhood Blood-Lead Study, described more fully in Unit III.C.1.c. of the preamble to the 2006 Proposal, provides ample evidence of a link between renovation activities and elevated blood lead levels in resident children (Ref. 13). This peer-reviewed study concluded that general residential renovation and remodeling is associated with an increased risk of elevated blood lead levels in children and that specific renovation and remodeling activities are also associated with an increase in the risk of elevated blood lead levels in children. In particular, removing paint (using open flame torches, using heat guns, using chemical paint removers, and wet scraping/sanding) and preparing surfaces by sanding or scraping significantly increased the risk of elevated blood lead levels. Some of the commenters on this rule focused on Table 3-13 in the study report and cited that as evidence that work performed by paid professional renovators does not create a statistically significant risk of an elevated blood-lead level in a resident child.EPA agrees that this table, which presents the results of analyses using one of the sets of models used to interpret study data, indicates that, with respect to the persons performing the work, the only statistically significant result associated with increased risk of

elevated blood lead levels was work performed by a relative or friend not in the household. Work performed by professional renovators was associated with an increased risk of an elevated blood lead level, but the association was not statistically significant. As explained more fully in a memorandum summarizing additional analyses of the data from this study (Ref. 20), this table does not indicate that professional contractors were not responsible for creating lead exposure hazards. Rather, it indicates that renovation activities performed by professional contractors are no more or less hazardous than renovation activities performed by most of the other categories of persons identified in the survey responses collected as part of the study. It is also important to note that, while these commenters focus on a blood-lead level of 10 µg/dL as a threshold, this level is not and has not been considered by CDC or EPA as a threshold for adverse effects.

One commenter also dismissed the two studies from New York that EPA cited as supporting the findings of the Wisconsin Childhood Blood-Lead Study. In 1995, the New York State Department of Health assessed lead exposure among children resulting from home renovation and remodeling in 1993–1994. A review of the health department records of children with blood lead levels equal to or greater than 20 µg/dL identified 320, or 6.9%, with elevated blood lead levels that were attributable to renovation and remodeling (Ref. 21). The commenter noted that this study suffered from a number of limitations, including the fact that it was not a case-control study; i.e., the group of children with elevated blood lead levels attributed to renovation and remodeling was not compared with a similar group of households that had not undergone renovation during the period. EPA agrees that this is an important limitation of this study. However, with respect to the other limitations noted by this commenter, the authors of the report felt that most of these limitations would likely result in an underestimation of the burden of lead exposure associated with renovation and remodeling.

The other study cited by EPA as supporting the Wisconsin Childhood Blood-Lead Study conclusions was a case-control study that assessed the association between elevated blood lead levels in children younger than 5 years and renovation or repair activities in homes in New York City (Ref. 22).EPA notes that the authors show that when dust and debris was reported (by respondents via telephone interviews) to be ''everywhere'' following a renovation, the blood lead levels were significantly higher than children at homes that did not report remodeling work. On the other hand, when the respondent reported either ''no visible dust and debris'' or that ''dust and debris was limited to the work area,'' there was no statistically significant effect on blood lead levels relative to homes that did not report remodeling work. Although the study found only a weak and nonsignificant link between a report of any renovation activity and the likelihood that a resident child had an elevated blood-lead level, the link to the likelihood of an elevated blood-lead level was statistically significant for surface preparation by sanding and for renovation work that spreads dust and debris beyond the work area. The researchers noted the consistency of their results with EPA's Wisconsin Childhood Blood-Lead Study (Ref. 13, at 509). EPA notes that this confirms that keeping visible dust and debris contained to the work area is important for limiting children exposures to lead dust, rather than providing substantial arguments for the effectiveness of visual inspection.

In sum, EPA's finding that renovation and remodeling activities create lead-based paint hazards is not dependent upon establishing a correlation between such activities and elevated blood lead levels. Rather, it rests on the fact that, as demonstrated by EPA's Environmental Field Sampling Study, EPA's Dust Study, and by the NAHB Survey, such activities create lead-based paint hazards as defined by EPA regulations. Moreover, EPA disagrees that there is no scientific support for establishing a relationship between elevated blood lead levels in children and renovation activities. While EPA interprets these studies as supporting such a relationship and believes these studies further support its finding, it is not a determinative factor.

b. *EPA's approach to this final rule.* Given EPA's determination that renovation, repair, and painting activities that disturb lead-based paint create lead-based paint hazards, TSCA section 402(c)(3) directs EPA to revise the Lead-based Paint Activities Regulations to apply to these activities. EPA does not interpret its statutory mandate to require EPA to apply the existing TSCA section 402(a) regulations to renovations without change. By using the word ''revise,'' and creating a separate subsection of the statute for renovation, EPA believes that Congress intended that EPA make revisions to those existing regulations to adapt them to a very different regulated community. As discussed below, there are significant differences between renovations and abatements. Accordingly, this final rule does not merely expand the scope of the current abatement requirements to cover renovation and remodeling activities. Rather, EPA has carefully considered the elements of the existing abatement regulations and revised them as necessary to craft a rule that is practical for renovation, remodeling and painting businesses and their customers, taking into account reliability, effectiveness, and safety as directed by TSCA section 402(a). Specifically, the Agency concludes that the training, containment, cleaning, and cleaning verification requirements in this final rule rule achieve the goal of minimizing exposure to lead-based paint hazards created during renovation, remodeling and painting activities, taking into account reliability, effectiveness, and safety.

In taking safety into account, EPA looked to the statutory directive to regulate renovation activities that create lead-based paint hazards. Although there is no known level of lead exposure that is safe, EPA does not believe the intent of Congress was to require elimination of all possible risk arising from a renovation. Nor does TSCA explicitly require EPA to eliminate all possible risk from lead, nor would it be feasible to do so since lead is a component of the earth. Rather, it directs EPA to regulate renovation and remodeling activities that create lead-based paint hazards. Given that the trigger for regulating renovation and remodeling activities is the creation of lead-based paint hazards--which EPA has identified in a separate rulemaking pursuant to TSCA section 403--EPA believes taking safety into account in this context is best interpreted with reference to those promulgated hazard standards. If taking safety into account required a more stringent standard, as suggested by some commenters, the potential would be created for a scheme under which any renovation activities found not to create hazards are not regulated at all, whereas renovation activities found to create hazards trigger requirements designed to leave the renovation site cleaner than the unregulated renovations. EPA's interpretation is supported by the broad Congressional intent that the section 403 hazard standards apply for purposes of subchapter IV of TSCA. It is also consistent with EPA's approach in its abatement regulations, which require post-abatement cleaning to dust-lead

clearance levels that are numerically equal to the TSCA section 403 hazard standards levels. It would be anomalous to impose a more stringent safety standard in the renovation context than in the abatement context, where the express purpose of the regulated activities is to abate lead-based paint hazards. Therefore, in taking into account safety, this final rule regulates renovation and remodeling activities relative to the TSCA section 403 hazard standard, with the purpose of minimizing exposure to such hazards created during renovation and remodeling activities.

Additionally, EPA has interpreted practicality in implementation to be an element of the statutory directive to take into account effectiveness and reliability. In particular, EPA believes that given the highly variable nature of the regulated community, the work practices required by this rule should be simple to understand and easy to use. EPA is very aware that this regulation will apply to a whole range of individuals from day laborers to property maintenance staff to master craftsmen performing a whole range of activities from simple drywall repair to window replacement to complete kitchen and bath renovations to building additions and everything in between. Work practices that are easy and practical to use are more likely to be followed by all of the persons who perform renovations, and, therefore, more likely to be reliable and effective in minimizing exposure to lead-based paint hazards created by renovation activities.

One of the biggest challenges facing EPA in revising the TSCA section 402(a) Lead-based Paint Activities Regulations is how to effectively bridge the differences between abatement and renovation and remodeling while acknowledging that many of the dust generating activities are the same. Abatements are generally performed in three circumstances. First, an abatement may be performed in the residence of a child who has been found to have an elevated blood lead level. Second, abatements are performed in housing receiving HUD financial assistance when required by HUD's Lead-Safe Housing Rule. Third, state and local laws and regulations may require abatements in certain situations associated with rental housing. Typically, when an abatement is performed, the housing is either unoccupied or the occupants are temporarily relocated to lead-safe housing until the abatement has been demonstrated to have been properly completed through dust clearance testing. Carpet in the housing is usually removed as part of the abatement because it is difficult to demonstrate that it is free of lead-based paint hazards. Uncarpeted floors that have not been replaced during the abatement may need to be refinished or sealed in order to achieve clearance. Abatements have only one purpose--to permanently eliminate lead-based paint and lead-based paint hazards.

On the other hand, renovations are performed for a myriad of reasons, most having nothing to do with lead-based paint. Renovations involve activities designed to update, maintain, or modify all or part of a building. Renovations may be performed while the property is occupied or unoccupied. If the renovation is performed while the property is occupied, the occupants do not typically relocate pending the completion of the project.

Further, performing abatement is a highly specialized skill that workers and supervisors must learn in training courses accredited by EPA or authorized States, Territories, and Tribes. In contrast, EPA is not interested in teaching persons how to be painters, plumbers, or carpenters. Rather, EPA's objective is to ensure that persons who already know how to perform renovations perform their typical work in a lead-safe manner.

Nevertheless, as pointed out by some commenters, abatement and renovation have some things in common. For example, as noted by one commenter, window replacement may be performed as part of an abatement to remove the lead-based paint and lead-based paint hazards on the existing window, or it may be performed as part of a renovation designed to improve the energy efficiency of the building. In many cases, the window replacement as abatement and the window replacement as renovation will generate the same amount of leaded dust.

Another consideration is that while renovation activities undoubtedly create lead-based paint hazards, without results from dust wipe samples collected immediately before the renovation commences, there is no way to tell what portion of the lead dust remaining on the surface was contributed by the renovation. In addition, as a practical matter, once dust-lead hazards commingle with pre-existing hazards, there is no functional way to distinguish between those created by the renovation activity and any pre-existing dust-lead hazards. However, the Dust Study shows that the combination of training, containment, cleaning and cleaning verification required by this rule is effective at reducing dust lead levels below the dust-lead hazard standard. While the requirements of this rule will, in some cases, have the ancillary benefit of removing some pre-existing dust-lead hazards, these requirements are designed to effectively clean-up the lead-based paint hazards created during renovation activities without changing the scope of the renovation activity itself. The intent of this final rule is not to require cleanup of pre-existing contamination.

For example, the rule does not require cleaning of dust or any other possible lead sources in portions of target housing or child-occupied facilities beyond the location in and around the work area. Nor does this rule require the replacement of carpets in the area of the renovation or the refinishing or sealing of uncarpeted floors. The approach in this final rule is designed to address the lead-based paint hazards created during the renovation while not requiring renovators to remediate or eliminate hazards that are beyond the scope of the work they were hired to do.

In addition, EPA has made a concerted effort to keep the costs and burdens associated with this rule as low as possible, while still providing adequate protection against lead-based paint hazards created by renovation activities. Indeed, as part of this rulemaking EPA has, as directed by TSCA section 2(c), considered the environmental, economic, and social impact of this rule. Nonetheless, many commenters expressed concerns over the potential unintended consequences of this rulemaking. These commenters argued that atoo-burdensome rule will result in more renovations by noncompliant renovators, and more do-it-yourself renovations, both of which are likely to be more hazardous than renovations by certified professional renovation firms using certified renovators who follow the work practice requirements of the rule. These commenters were also concerned about deferred property maintenance which can be hazardous for many reasons, including lead-based paint issues. For example, one commenter pointed out that a renovation project that replaces old lead-based paint covered windows with new ones that have no lead-based paint may, as a by-product, reduce lead hazards, and the rule should not work to discourage this activity.

On the other hand, one commenter argued that increased do-it-yourself activity is an unlikely byproduct of this rule because consumers are not only opting to hire or not hire contractors based on factors such as cost, convenience, and perceived quality, but,

even more importantly, their own proclivity towards performing renovation work. According to the commenter, the fact that the work practices required by this rule may result in slight cost increases is unlikely to motivate homeowners to perform their own renovations. This commenter also felt that the sooner that protective approaches become the accepted standard of care for renovation work by contractors receiving compensation, the sooner do-it-yourselfers and the do–it–yourself literature and training supports will adopt the same protective approaches.

It is difficult to determine with any amount of certainty whether this final rule will have unintended consequences. However, EPA agrees that it is important to minimize disincentives for using certified renovation firms who follow the work practices required by this rule. EPA also agrees that practicality is an important consideration. Given the relatively low estimated overall average per-job cost of this final rule, which is $35, and the relatively easy-to-use work practices required by this final rule, EPA does not expect the incremental costs associated with this rule to be a determinative factor for consumers. However, that relatively low cost has resulted in part from EPA's efforts to contain the costs of this rule in order to avoid creating disincentives to using certified renovation firms, and EPA has viewed the comments received with those considerations in mind.

With respect to the comment regarding the standard of care for do-it-yourselfers, EPA also plans to conduct an outreach and education campaign aimed at encouraging homeowners and other building owners to follow work practices while performing renovations or hire a certified renovation firm to do so.

7. *Summary of the final rule.* This section summarizes the final rule in general terms. For more information, consult Unit III. below, which describes each provision in detail, discusses any changes from the proposal, and reviews the comments received.

a. *Definitions and scope.* This final rule applies to renovations for compensation in target housing and child-occupied facilities. TSCA section 401 defines ''target housing'' as any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child who is less than 6 years of age resides or is expected to reside in such housing for the elderly or persons with disabilities) or any 0–bedroom dwelling. This rule contains the following definition of ''child-occupied facility'':

Child-occupied facility'' means a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may include, but are not limited to, day care centers, preschools and kindergarten classrooms. Child-occupied facilities may be located in target housing or in public or commercial buildings. With respect to common areas in public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only those common areas that are routinely used by children under age 6, such as restrooms and cafeterias. Common areas that children under age 6 only pass through, such as hallways, stairways, and garages are not included. In addition, with respect to exteriors of public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only the exterior sides of the building that are immediately adjacent to the child-occupied facility or the common areas routinely used by children under age 6.

TSCA does not define the terms ''renovation'' or ''remodeling,'' but this final rule builds upon the definition of ''renovation'' already established by the regulations promulgated under TSCA section 406(b). This rule defines ''renovation'' as follows:

''Renovation'' means the modification of any existing structure, or portion thereof, that results in the disturbance of painted surfaces, unless that activity is performed as part of an abatement as defined by this part (40 CFR 745.223). The term renovation includes (but is not limited to): The removal, modification or repair of painted surfaces or painted components (e.g., modification of painted doors, surface restoration, window repair, surface preparation activity (such as sanding, scraping, or other such activities that may generate paint dust)); the removal of building components (e.g., walls, ceilings, plumbing, windows); weatherization projects (e.g., cutting holes in painted surfaces to install blown-in insulation or to gain access to attics, planing thresholds to install weather-stripping), and interim controls that disturb painted surfaces. A renovation performed for the purpose of converting a building, or part of a building, into target housing or a child-occupied facility is a renovation under this subpart. The term renovation does not include minor repair and maintenance activities.

This final rule excludes some of the same projects that are excluded by the TSCA section 406(b) regulations, such as lead-based paint abatement projects and renovations affecting components that have been found to be free of lead-based paint. To be eligible for the latter exception, the components must be determined to be free of lead-based paint by a certified inspector or risk assessor, or by a certified renovator using an EPA-approved test kit. Emergency projects would continue to be exempt from the lead hazard information distribution requirements, but the clean-up after the project must meet the requirements of this regulation, and compliance with the training, certification, warning sign, and containment requirements of this regulation is required to the extent practicable. Minor maintenance projects that disturb no more than 6 square feet of painted surface per room for interiors or no more than 20 square feet of painted surface for exteriors are also exempt, so long as no work practices prohibited or restricted by this final rule are used, the renovation does not involve window replacement and there is no demolition of painted areas. Finally, this regulation contains an exception for renovations in owner-occupied target housing where no child under age 6 or pregnant woman resides, so long as the housing does not meet the definition of ''child-occupied facility.'' To claim this exception, the renovation firm must obtain, before beginning the renovation, a signed statement from the owner of the housing that states that the person signing is the owner of the housing to be renovated, that he or she resides there, that no child under age 6 or pregnant woman resides there, that the housing is not a child-occupied facility, and that the owner understands that the renovation firm will not be required to use the work practices contained in this rule.

b. *Pre-Renovation Education Rule.* As described in greater detail in a separate notice published elsewhere in today's **Federal Register**, EPA has developed a new renovation-specific lead hazard information pamphlet intended for use in fulfilling the requirements of the Pre-Renovation Education Rule, 40 CFR part 745, subpart E. This final rule requires firms performing renovations for compensation in target housing and child-occupied facilities to distribute this new pamphlet before beginning renovations to the owners and occupants of target housing, owners of public or commercial buildings that contain a child-occupied facility, and the proprietor of the child-occupied facility, if different, and to provide general information on the renovation

and the pamphlet to, or make it available to, parents or guardians of children under age 6 using the child-occupied facility. This can be accomplished by mailing or hand-delivering the general information on the renovation and the pamphlet to the parents and guardians or by posting informational signs containing general information on the renovation in areas where the signs can be seen by the parents or guardians of the children frequenting the child-occupied facility. The signs must be accompanied by a posted copy of the pamphlet or information on how interested parents or guardians can review a copy of the pamphlet or obtain a copy from the renovation firm at no cost to the parents or guardians. For renovations in the common areas of multi-unit target housing, similar notification options are available to firms. They must provide tenants with general information regarding the nature of the renovation by mail, by hand-delivery, or by posting signs, and must also make this new pamphlet available upon request. Firms must maintain documentation of compliance with these requirements.

c. *Training, accreditation, and certification.* This final rule contains training requirements leading to certification for ''renovators''--individuals who perform and direct renovation activities—and ''dust sampling technicians''--individuals who perform dust sampling not in connection with an abatement. Requirements for each of these courses of study are described in detail, and a hands-on component is required. Training providers who wish to provide training to renovators and dust sampling technicians for Federal certification purposes must apply for and receive accreditation from EPA following the same procedures that training providers who offer lead-based paint activities training now use to become accredited by EPA. Providers of renovation training must follow the same requirements for program operation as training providers who offer lead-based paint activities training. For example, renovation training programs must have adequate facilities and equipment for delivering the training, a training manager with experience or education in a construction or environmental field, and a principal instructor with experience or education in a related field and education or experience in teaching adults. To become accredited to provide training for renovators and dust sampling technicians, a provider must submit an application for accreditation to EPA. The application must include the following items:

- The course materials and syllabus, or a statement that EPA model materials or materials approved by an authorized State or Tribe will be used.
- A description of the facilities and equipment that will be used.
- A copy of the test blueprint for each course.
- A description of the activities and procedures that will be used during the hands-on skills portion of each course.
- A copy of the quality control plan.
- The correct amount of fees.

Training programs that submit a complete application and meet the requirements for faculty, facilities, equipment, and course and test content will be accredited for 4 years. To maintain accreditation, the training program must submit an application and the correct amount of fees every 4 years. EPA is not establishing the required fees in this rulemaking. EPA intends to publish a proposed fee schedule for public comment shortly. Accredited renovation training programs must also comply with the existing notification and recordkeeping requirements for lead-based paint activities training programs at 40 CFR 745.225(c)(13) and 40 CFR 745.225(i), respectively, by notifying EPA before and after providing renovation training and by maintaining records of course materials, course test blueprints, information on how hands-on training is delivered, and the results of the students' skills assessments and course tests.

Each renovation project covered by this final rule must be performed and/or directed by an individual who has become a certified renovator by successfully completing renovator training from an accredited training provider. The certified renovator is responsible for ensuring compliance with the work practice standards of this final regulation. The certified renovator must perform or direct certain critical tasks during the renovation, such as posting warning signs, establishing containment of the work area, and cleaning the work area after the renovation. These and other renovation activities may be performed by workers who have been provided on-the-job training in these activities by a certified renovator. However, the certified renovator must be physically present at the work site while signs are being posted, containment is being established, and the work area is being cleaned after the renovation to ensure that these tasks are performed correctly. Although the certified renovator is not required to be on-site at all times, while the renovation project is ongoing, a certified renovator must nonetheless regularly direct the work being performed by other workers to ensure that the work practices are being followed. When a certified renovator is not physically present at the work site, the workers must be able to contact the renovator immediately by telephone or other mechanism. In addition, the certified renovator must perform the post-renovation cleaning verification. This task may not be delegated to workers with on-the-job training. To maintain certification, a renovator must successfully complete an accredited renovator refresher training course every 5 years.

Renovations must be performed by certified firms. The certification requirements for renovation firms are identical to the certification requirements for firms that perform lead-based paint activities, except that renovation firm certification lasts for 5 years instead of 3 years.A firm that wishes to become certified to perform renovations must submit an application, along with the correct amount of fees, attesting that it will assign a certified renovator to each renovation that it performs, that it will use only certified or properly trained individuals to perform renovations, and that it will follow the work practice standards and recordkeeping requirements in this regulation. EPA will certify any firm that meets these requirements unless EPA determines that the environmental compliance history of the firm, its principals, or its key employees demonstrates an unwillingness or inability to maintain compliance with environmental statutes or regulations. To maintain certification, the firm must submit an application and the correct amount of fees every 5 years. As noted above, EPA will establish the required fees in a subsequent rulemaking.

d. *Work practice standards.* This final rule contains a number of work practice requirements that must be followed for every covered renovation in target housing and child-occupied facilities. These requirements pertain to warning signs and work area containment, the restriction or prohibition of certain practices (e.g., high heat gun, torch, power sanding, power planing), waste handling, cleaning, and post-renovation cleaning verification. The firm must ensure compliance with these work practices. Although the certified renovator is not required to be on-site at all times, while the renovation project is ongoing, a certified renovator must nonetheless regularly direct the work being performed by other workers to ensure that the work practices are being

followed. When a certified renovator is not physically present at the work site, the workers must be able to contact the renovator immediately by telephone or other mechanism.

i. *Warning signs and work area containment.* Before beginning a covered renovation, the certified renovator or a worker under the direction of the certified renovator must post signs outside the area to be renovated warning occupants and others not involved in the renovation to remain clear of the area. In addition, the certified renovator or a worker under the direction of the certified renovator must also contain the work area so that dust or debris does not leave the area while the work is being performed. At a minimum, containment for interior projects must include:

- Removing or covering all objects in the work area with plastic or other impermeable material.
- Closing and covering all forced air HVAC ducts in the work area with plastic or other impermeable material.
- Closing all windows in the work area.
- Closing and sealing all doors in the work area with plastic or other impermeable material.
- Covering the floor surface, including installed carpet, with taped-down plastic sheeting or other impermeable material in the work area 6 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater.

Doors within the work area that will be used while the job is being performed must be covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area. In addition, all personnel, tools, and other items, including the exterior of containers of waste, must be free of dust and debris when leaving the work area. There are several ways of accomplishing this. For example, tacky mats may be put down immediately adjacent to the plastic sheeting covering the work area floor to remove dust and debris from the bottom of the workers' shoes as they leave the work area, workers may remove their shoe covers (booties) as they leave the work area, and clothing and materials may be wet-wiped and/or HEPA-vacuumed before they are removed from the work area.

At a minimum, containment for exterior projects must include:

- Covering the ground with plastic sheeting or other disposable impermeable material extending 10 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line prevents 10 feet of such ground covering.
- Closing all doors and windows within 20 feet of the outside of the work area on the same floor as the renovation and closing all doors and windows on the floors below that area.

In certain situations, such as where other buildings are in close proximity to the work area, when conditions are windy, or where the work area abuts a property line, the certified renovator or a worker under the direction of the certified renovator performing the renovation may have to take extra precautions to prevent dust and debris from leaving the work area as required by the regulation. This may include erecting a system of vertical containment designed to prevent dust and debris from migrating to adjacent property or contaminating the ground, other buildings, or any object beyond the work area. In addition, doors within the work area that will be used while the job is being performed must be covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area.

ii. *Waste management.* The certified renovator or a worker trained and directed by a certified renovator must, at the conclusion of each work day, store any collected lead-based paint waste from renovation activities under containment, in an enclosure, or behind a barrier that prevents release of dust and debris and prevents access to the waste. In addition, the certified renovator or a worker under the direction of the certified renovator transporting lead-based paint waste from a work site must contain the waste to prevent identifiable releases. With regard to the lead-based paint waste generated by renovations in housing units, Unit IV.D.2. of the preamble to the 2006 Proposal describes how a clarification of the hazardous waste exclusion in 40 CFR 261.4(b)(1) means that residential lead-based paint waste may be disposed of in municipal solid waste landfill units, as long as the waste is generated during abatement or renovation and remodeling activities in households. Also discussed in the preamble to the 2006 Proposal is a subsequent amendment to the waste regulations promulgated under the Resource Conservation and Recovery Act (RCRA) that allows construction and demolition (C&D) landfills to accept residential lead-based paint waste.

iii. *Cleaning.* This final rule contains a number of specific cleaning steps that the certified renovator or a worker under the direction of the certified renovator must follow after performing a covered renovation. Upon completion of renovation activities, all paint chips and debris must be picked up. Protective sheeting must be misted and folded dirty side inward. Sheeting used to isolate the work area from other areas must remain in place until after the cleaning and removal of other sheeting; this sheeting must be misted and removed last. Removed sheeting must either be folded and taped shut to seal or sealed in heavy-duty bags and disposed of as waste.

After the sheeting has been removed from the work area, the entire area must be cleaned, including the adjacent surfaces that are within 2 feet of the work area. The walls, starting from the ceiling and working down to the floor, must be vacuumed with a HEPA vacuum or wiped with a damp cloth. This final rule requires that all remaining surfaces and objects in the work area, including floors, furniture and fixtures, be thoroughly vacuumed with a HEPA-equipped vacuum. When cleaning carpets, the HEPA vacuum must be equipped with a beater bar to aid in dislodging and collecting deep dust and lead from carpets. Where feasible, floor surfaces underneath area rugs must also be thoroughly vacuumed with a HEPA vacuum.

After vacuuming, all surfaces and objects in the work area, except for walls and carpeted or upholstered surfaces, must be wiped with a damp cloth. Uncarpeted floors must be thoroughly mopped using a 2-bucket mopping method that keeps the wash water separate from the rinse water, or using a wet mopping system with disposable absorbent cleaning pads and a built-in mechanism for distributing or spraying cleaning solution from a reservoir onto a floor.

For cleaning following an exterior renovation, this final rule requires all paint chips and debris to be picked up. Protective sheeting must be misted and folded dirty side inward. Removed sheeting must be either folded and taped shut to seal or sealed in heavy-duty bags and disposed of as waste.

iv. *Post-renovation cleaning verification.* This final rule requires a certified renovator to perform a visual inspection of the work area after the cleaning steps outlined in the previous subsection. This visual inspection is for the purpose of determining whether dust, debris, or other residue is present in the work area. If dust, debris, or other residue remains in the work area, the dust, debris, or other residue must be

removed by re-cleaning and another visual inspection must be performed.

When an exterior work area passes the visual inspection, the renovation has been properly completed and the warning signs may be removed. When an interior work area passes the visual inspection, an additional cleaning verification step is required. A certified renovator assigned to the renovation project must use disposable cleaning cloths to wipe the windowsills, countertops, and uncarpeted floors in the work area. These cloths must then be compared to a cleaning verification card. For each cloth that matches or is lighter than the cleaning verification card, the corresponding windowsill, countertop, or floor area is considered to have passed the post-renovation cleaning verification. In contrast to the 2006 Proposal, this final rule limits this requirement to two wet cloths and one dry cloth. After the first dry cloth, that surface will be considered to have passed post-renovation cleaning verification. When all windowsills, countertops, and floor areas in the work area have passed post-renovation cleaning verification, the warning signs may be removed. More information on the post-renovation cleaning verification procedure and the underlying studies can be found in Unit IV.E. of the preamble to the 2006 Proposal and in Unit III.E.7. of this preamble.

In contrast to the 2006 Proposal, this final rule does not allow dust clearance sampling in lieu of post-renovation cleaning verification, except in cases where the contract between the renovation firm and the property owner or another Federal, State, Territorial, Tribal, or local regulation requires dust clearance sampling by a certified sampling professional and requires the renovation firm to clean the work area until it passes clearance.

e. *State, Territorial, and Tribal programs.* This final rule also contains provisions for interested States, Territories, and Tribes to apply for and receive authorization to administer their own renovation, repair and painting programs in lieu of the proposed regulation. States, Territories and Tribes may choose to administer and enforce just the existing requirements of subpart E, the pre-renovation education elements, the training, certification, accreditation, work practice, and recordkeeping requirements of this final rule, or both. EPA will use the same process used for lead-based paint activities programs, along with proposed specific renovation program elements, to authorize State, Territorial, and Tribal programs.

States, Territories, and Tribes seeking authority to administer and enforce renovation programs must obtain public input and then submit an application to EPA. Applications must contain a number of items, including a description of the State, Territorial, or Tribal program, copies of all applicable statutes, regulations, and standards, and a certification by the State Attorney General, Tribal Counsel, or an equivalent official, that the applicable legislation and regulations provide adequate legal authority to administer and enforce the program. The program description must demonstrate that the State, Territorial, or Tribal program is at least as protective as the Federal program and that it provides for adequate enforcement.

To be eligible for authorization to administer and enforce renovation programs, State, Territorial, and Tribal renovation programs must contain certain minimum elements that are very similar to the minimum elements required for lead-based paint activities programs. In order to be authorized, State, Territorial, or Tribal programs must have procedures and requirements for the accreditation of training programs, the training of renovators, and the certification of renovators or renovation firms. At a minimum, the program requirements must include accredited training for renovators and procedures and requirements for re-certification. State, Territorial, and Tribal programs applying for authorization are also required to include work practice standards for renovations that ensure that renovations are conducted only by certified renovators or renovation firms and that renovations are conducted using work practices at least as protective as those of the Federal program.

B. What is the Agency's Authority for Taking this Action?

These training, certification and accreditation requirements; State, Territorial, and Tribal authorization provisions; and work practice standards are being promulgated under the authority of TSCA sections 402(c)(3), 404, 406, and 407, 15 U.S.C. 2682(c)(3), 2684, 2686, and 2687, and in a manner that is consistent with TSCA section 2(c), 15 U.S.C. 2601(c).

III. Provisions of this Final Rule

This unit describes the specific provisions of the final regulation and discusses the major comments received.

A. Scope of the Final Rule

EPA is amending the existing regulations at 40 CFR part 745, subpart E (the ''Pre-Renovation Education Rule''), that implement TSCA section 406(b) to add training and certification requirements, as well as work practice standards, for certain renovation, repair, and painting projects performed for compensation in target housing and in child-occupied facilities.

1. *Buildings covered*—a. *Target housing.* The requirements of this final rule apply to renovations performed for compensation within and on the exteriors of target housing units, including renovations performed for compensation in common areas, such as hallways, stairways, and laundry and recreational rooms, in multi-unit target housing. The term ''target housing'' is defined in TSCA section 401 as any housing constructed before 1978, except housing for the elderly or persons with disabilities (unless any child under age 6 resides or is expected to reside in such housing) or any 0–bedroom dwelling.

Several commenters were concerned about the exclusion of 0–bedroom dwellings from the definition of ''target housing.'' These commenters noted that this effectively excludes a significant subset of housing where children live, particularly studio or efficiency apartments and certain low-income housing such as single-room occupancy hotels. One commenter stated that, in his city, at least 400 families with more than 700 children live in single-room occupancy hotels, and these hotels constitute some of oldest housing in their city. Other commenters were concerned about the exclusion of housing for the elderly (or persons with disabilities) unless any child under age 6 resides or is expected to reside in such housing. These commenters suggested that EPA not exempt such housing because children may be present for a substantial amount of time. One commenter noted that, because some children spend 40 or more hours per week at their grandparents' home, eliminating housing for the elderly from the rule would place an inordinate number of young children at risk. Another commenter observed that unless the building is reserved for elderly residents only, the likelihood of children living in a multi-unit building and being exposed to lead hazards in common areas is high.

EPA understands and shares the concerns of these commenters. However, these exclusions were established by Congress in Title X. The exclusions and limitations in the exclusions appear consistent with a focus on housing where children under age 6 reside. Nonetheless, EPA does wish to point out that this regulation and other existing TSCA regulations

cover activities in common areas that are accessible to residents of target housing units. Thus, renovations in common areas in a building built before 1978 that contains both housing units reserved for the elderly and regular housing units would be covered by this rule. In addition, as described more fully in Unit III.G. of this preamble, States, Territories and Tribes may choose to develop and implement their own lead renovation, repair, and painting programs. Such programs may be more stringent than this Federal regulation and could, therefore, cover 0–bedroom dwellings or housing for the elderly.

Finally, one commenter questioned the existing definition of''multi-family housing'' in 40 CFR 745.83, which defines the term as a ''housing property consisting of more than four dwelling units.'' The commenter referred to the definition of ''multi-family dwelling'' in 40 CFR 745.223 which does not limit the term to a specific number of units, and questioned why smaller multi-family housing such as duplexes should not be included in the definition in 40 CFR 745.83. This commenter and others contended that it is important to cover common areas, including building exteriors, in all multi-unit target housing. In response to these commenters, EPA is deleting the definition of ''multi-family housing'' from 40 CFR 745.83 because the term is not used in this final rule. This final rule covers renovations in common areas, including building exteriors, of multi-unit buildings regardless of the number of units contained in the building. In addition, the deletion of this definition will also make it clear that the existing Pre-Renovation Education Rule provisions also apply to the same renovations covered by this final rule.

b. *Child-occupied facilities*. The certification, training, recordkeeping, and work practice standards of this final rule also apply to renovations for compensation in child-occupied facilities. As discussed in the preamble to the 2007 Supplemental Proposal, numerous commenters on the 2006 Proposal requested that EPA cover child-occupied facilities under this regulation and suggested that EPA use the existing definition of ''child-occupied facility'' in 40 CFR 745.223. In response, the 2007 Supplemental Proposal included a definition of ''child-occupied facility'' that was based upon the existing definition, with modifications to make it consistent with the provisions of the 2006 Proposal. EPA also proposed to modify the definition to clarify, for child-occupied facilities located in public or commercial buildings, which portions of the building would be considered part of the child-occupied facility for purposes of this rulemaking. EPA received several comments suggesting modifications to the proposed definition, but (with the exception of one small clarification) EPA is retaining the proposed definition for the reasons discussed below. The final rule's definition of ''child-occupied facility'' is as follows:

''Child-occupied facility'' means a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least 2 different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may include, but are not limited to, day care centers, preschools and kindergarten classrooms. Child-occupied facilities may be located in target housing or in public or commercial buildings. With respect to common areas in public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only those common areas that are routinely used by children under age 6, such as restrooms and cafeterias. Common areas that children under age 6 only pass through, such as hallways, stairways, and garages are not included. In addition, with respect to exteriors of public or commercial buildings that contain child–occupied facilities, the child–occupied facility encompasses only the exterior sides of the building that are immediately adjacent to the child–occupied facility or the common areas routinely used by children under age 6.

EPA added the introductory clauses ''with respect to common areas'' and ''with respect to exteriors of'' to the sentences describing the applicability of the rule to common areas and exteriors of public or commercial buildings because EPA was concerned that people would be confused about the area defined by the term ''child-occupied facility'' in those situations.

Most of the commenters on the 2007 Supplemental Proposal expressed support for including child-occupied facilities within the universe of buildings covered by this rulemaking. Several commenters requested that EPA provide a more clear definition of public buildings that contain child-occupied facilities or additional examples of such facilities. However, EPA is not aware of additional examples that could be included in the definition to make the applicability of this rule clearer. One commenter believed that a definition based upon the amount of time a child spends at a facility would be unworkable.

EPA disagrees with the comment that a time-based definition of child-occupied facility is unworkable. A time-based definition has been a part of the Lead-based Paint Activities Program under TSCA section 402(a) for more than 10 years and EPA is not aware of any significant implementation difficulties. As initially proposed in 1994, the Lead-based Paint Activities Regulations under TSCA section 402(a) would have contained one set of requirements for the training and certification of contractors and the accreditation of training programs, as well as specific work practice standards that would have applied to lead-based paint activities conducted in target housing and public buildings (Ref. 23). A different set of requirements would have applied to lead-based paint activities conducted in commercial buildings and on bridges and other structures. The 1994 proposal would have defined public buildings to include all buildings generally open to the public or occupied or visited by children, such as stores, museums, airports, offices, restaurants, hospitals, and government buildings, as well as schools and day care centers. During the comment period, a significant majority of commenters expressed the concern that applying these regulations to activities in all of the buildings that EPA would consider public would result in significant costs without a comparable reduction in lead-based paint exposures for children under age 6, the population most vulnerable to lead exposures. Many of these commenters recommended that EPA focus its attention on buildings that are frequented by children, rather than on buildings that may be briefly visited by children.

In response to these comments, EPA established, in the final rule, a subset of the buildings EPA had intended to define as public. This subset, called ''child-occupied facilities,'' was delineated in terms of the frequency and duration of visits by children (Ref. 4). These primarily consist of public buildings where young children receive care or instruction on a regular basis, such as child care centers and kindergarten classrooms. The Agency's decision to define child-occupied facilities as a sub-category of public buildings was based on one of the key objectives of the Lead-based Paint Activities Regulations, which was to

prevent lead exposures among young children. The Agency reasoned that children face an equal, if not greater, risk from lead-based paint hazards in schools and day care centers as they do at home. Indeed, EPA was concerned that children could spend more time in a particular classroom or day care room in a given day or week than they might spend in a single room in their homes. With respect to the type of building covered, this regulation will operate in much the same way as the Lead-based Paint Activities Regulations. In most cases, office buildings without child care facilities, museums, stores, airports, and restaurants will not be covered by this rule. Although there may be large numbers of children present at any given time in these kinds of buildings, individual children are not likely to be there often enough and long enough to qualify the building as a child-occupied facility.

Some commenters appeared to be confused about whether the definition of ''child-occupied facility'' covers housing where informal or unpaid care is provided, such as the homes of relatives and neighbors. Whether or not a building is a child-occupied facility does not depend upon whether the owner or operator of the child-occupied facility is somehow compensated for the child's presence. Indeed, the first sentence of the definition makes this clear in stating that a child-occupied facility is a ''building, or portion of a building, constructed prior to 1978, visited regularly by the same child . . .'' The word ''visited'' is very broad, it includes visits to a relative's house or a neighbor's house as well as visits to a child-care facility or school.

Except in owner-occupied target housing, as discussed below, the firm performing the renovation is responsible for determining whether a building is a child-occupied facility. This can be accomplished in any number of ways. A stand-alone child care center is likely to have a name that suggests that it provides child care, and the center's status as a child-occupied facility should be obvious upon entering the center. Child care centers in office buildings are likely to have informational signs posted and the centers are likely to be identified in the building directory. Elementary schools are likely to have kindergarten classrooms. The renovation firm should inquire about the presence of a child-occupied facility when contracting to perform renovation services in a public or commercial building. However, a statement by the building owner or manager that there is no child-occupied facility in the building may not be relied upon in the face of evidence to the contrary.

Several commenters felt that EPA had inappropriately limited the space encompassed by achild-occupied facility in a public or commercial building. These commenters thought that EPA should follow the approach used for common areas in multi-family housing. Under this approach, the rule would cover renovations for compensation in all areas normally accessible to the children using the child-occupied facility. However, children under age 6 are likely to spend less time in the hallways and stairways of public or commercial buildings than they do in common areas in the buildings where they live. It is also likely that children under age 6 walking to and from a child care center in an office building, or to and from a classroom in a school building, will be closely supervised and will not be permitted to walk through active renovation work sites. Although some exposure is possible in these areas, they are more akin to general public and commercial buildings that children may enter but where they are not expected to spend significant amounts of time than to the exposures associated with child-occupied facilities, and EPA's hazard standards are applicable to residents and residential-type settings. In addition, EPA is concerned that application of this final rule to all common areas of public or commercial buildings that may house a child-occupied facility in a small portion of the building would likely result in minimal benefit to the children at a potentially large cost.

c. *Other public or commercial buildings.* A number of commenters noted that TSCA section 402(c)(3) directs EPA to address renovation or remodeling activities that create lead-based paint hazards not only in target housing, but also in public buildings constructed before 1978, and commercial buildings. Most of these commenters, commenting on the 2006 Proposal, expressed the greatest concern over EPA's failure to address buildings where young children spend significant amounts of time, or child-occupied facilities. However, a handful of commenters argued that EPA also needed to address other public and commercial buildings under the renovation, repair, and painting program.

TSCA section 402(c)(3) provides authority for EPA to regulate renovation or remodeling activities that create lead-based paint hazards. EPA has, by regulation under TSCA section 403, identified lead-based paint hazards for purposes of Title IV. These hazard standards were developed by evaluating exposure patterns and hazard information for young children and taking into account costs and benefits. They are only applicable in target housing and child-occupied facilities, places where young children are likely to be present for significant periods of time. Although EPA realizes that lead exposure for older children and adults can result in adverse health effects, effects which are discussed in chapter 5 of the Final Economic Analysis for the Lead Renovation, Repair, and Painting Program (''Final Economic Analysis'') (Ref. 24), EPA has not evaluated the exposure and hazard information for these groups in the same way that it has for young children. EPA has not evaluated the potential adverse health effects and associated them with a specific level of surface dust that will result in a blood lead level in an older child or an adult that is likely to cause a particular adverse effect. Nor has EPA evaluated the potential health effects to young children from the less frequent exposures that might arise in public and commercial buildings that are not child-occupied facilities. At this time, EPA does not have sufficient information with which to conclude that renovation and remodeling activities in buildings not frequented by young children, e.g., public or commercial buildings that are not child-occupied facilities, create lead-based paint hazards because EPA's TSCA section 403 hazard standards only apply to target housing and child-occupied facilities. EPA has no hazard standards to apply in other situations. Thus, this rule, like the Lead-based Paint Activities Regulations, only applies in target housing and child-occupied facilities.

2. *Activities covered*—a. *Renovations for compensation.* This rule, like the Pre-Renovation Education Rule, only applies to persons who perform renovations for compensation. As discussed in the preamble to the 2007 Supplemental Proposal, for the purposes of this regulation, compensation includes pay for work performed, such as that paid to contractors and subcontractors; wages, such as those paid to employees of contractors, building owners, property management companies, child-occupied facility operators, State and local government agencies, and non-profits; and rent for target housing or public or commercial building space.

Although the owner of rental property may not be compensated for maintenance and repair work at the time that the work is performed, tenants generally pay rent for the right to

occupy rental space as well as for maintenance services in that space. Thus, renovations performed by renovation contractors and their employees in target housing or child-occupied facilities are covered, as are renovations by owners of rental target housing or child-occupied facilities, if the child-occupied facility leases space.

Renovations in target housing or in child-occupied facilities are covered if they are performed by employees of the renovation contractor, the building owner, the building manager, a State or local government agency, a non-profit organization, or the child-occupied facility operator, and the employees receive wages or other compensation for the work performed. Child care payments, in and of themselves, are not considered compensation for renovations. An agreement to provide child care in exchange for a payment is not a contract for building maintenance services in the same way that a lease or other agreement between a landlord and a tenant generally is.

One commenter requested that EPA consider payments for child care to be compensation for renovations. A number of other commenters expressed a general concern over the fact that EPA was not proposing to cover do-it-yourself renovations in owner-occupied target housing. Some of these commenters cited research or observations suggesting that improperly performed renovations by homeowners, relatives, or friends are equally likely, if not more likely, to cause elevated blood lead levels as renovations performed by professional contractors. The most commonly cited study for this proposition was the Wisconsin Childhood Blood-Lead Study, commissioned by EPA as Phase III of the Renovation and Remodeling Study performed pursuant to TSCA section 402(c)(2). As described more fully in the preamble to the 2006 Proposal, in homes where renovation and remodeling activities had been performed, the analysis of the results of the Wisconsin Study indicated the following ordering of the five possible responses to the question of who performed the renovation and remodeling, in order of highest to lowest risk of increased odds of an elevated blood lead level:

- Relative or friend not in household.
- Paid professional.
- Owner or building superintendent.
- Head of household or spouse.
- Other person in household.

As discussed in the preamble to the 2007 Supplemental Proposal, EPA does not believe that child-care payments represent compensation for renovations in the same way that rent is. Furthermore, as discussed in the Final Economic Analysis, the overwhelming majority of child-occupied facilities covered by this final rule are located in target housing. Some of that housing is rental target housing, and renovations in rental target housing are covered by this final rule regardless of whether a child-occupied facility is present. With respect to child-occupied facilities located in owner-occupied target housing and do-it-yourself renovations in owner-occupied target housing in general, EPA believes that it would be inconsistent with Congressional intent to cover these renovations.

EPA has previously determined that Congress was most concerned with the certification and training of contractors, not homeowners. In the preamble to the proposed Lead-based Paint Activities Regulations, EPA reviewed section 1021 of the Residential Lead-Based Paint Hazard Reduction Act of 1992, the section that added Title IV to TSCA, and determined that the emphasis under section 402 of TSCA ought to be the certification and training of contractors, not homeowners (Ref. 23). In its review, EPA declared that TSCA section 402(c)(3), the section under which this final rule is being issued, shows that Congressional ''focus was on the need to regulate contractors doing renovation and remodeling activities, and not homeowners doing renovation and remodeling of their own homes'' (Ref. 23). Specifically, TSCA section 402(c)(3) directs EPA to revise the TSCA section 402(a) Lead-based Paint Activities Regulations to apply to renovation and remodeling activities. In so doing, EPA is to determine ''which *contractors* are engaged in such activities.'' TSCA section 402(c)(3) (emphasis added). EPA thus interprets the statutory directive to regulate remodeling and renovation activities found in TSCA section 402(c)(3) as applying to contractors and not a broader category of persons, such as homeowners.

With respect to do-it-yourself renovations in child-occupied facilities in target housing, as stated above, although payment is received in exchange for childcare, EPA does not consider this to be a contract for building maintenance. As discussed in the previous paragraph, Congress intended to cover renovation contractors, not homeowners who perform renovations on their own homes.

However, as previously discussed, EPA intends to conduct an outreach and education campaign designed to encourage homeowners and other building owners to follow lead-safe work practices while performing renovations or hire a certified renovation firm to do so.

b. *Definition of ''renovation.''* The universe of renovation activities covered by this rule is virtually identical to the renovation activities already regulated under the Pre-Renovation Education Rule--essentially, activities that modify an existing structure and that result in the disturbance of painted surfaces. All types of repair, remodeling, modernization, and weatherization projects are covered, including projects performed as part of another Federal, State, or local program, if the projects meet the definition of ''renovation'' already codified in 40 CFR 745.83.

As discussed in Unit IV.B.3. of the preamble to the 2006 Proposal, EPA considered a number of options for defining the term ''renovation'' for the Pre-Renovation Education Rule, and chose a definition that focuses on the activities of greatest concern to EPA, activities that disturb lead-based paint. This definition also covers virtually all of the types of activities in the Environmental Field Sampling Study that created lead-based paint hazards. In this rulemaking, EPA received several comments requesting clarification on the definition; some of these commenters were particularly interested in the types of jobs that would be covered by this definition. One commenter requested that, if EPA intended to cover maintenance and repair projects and interim control projects, the definition of ''renovation'' be modified to specifically include those projects. Another commenter requested that EPA specifically mention weatherization projects as an example of the types of projects covered by the rule. Several commenters suggested that the definition should clearly delineate the boundaries between renovation and abatement.

EPA also received several responses to its requests for comment on whether to exclude any category of specialty contractor and whether certain renovation activities, such as HVAC duct work, which may result in the disturbance of limited amounts of lead-based paint, should be specifically included or excluded. A state agency contended that exterior siding projects, HVAC duct work, and wallpaper removal should not be excluded, noting that wallpaper removal was implicated in a lead poisoning case the agency investigated. Another commenter argued that many interior and exterior painting projects involve washing, scuff-sanding, and scraping to remove loose materials, and that such ''common'' and

''relatively benign'' industry practices should not be regulated. Other commenters argued that there should be no categorical exemption for any type of specialty contractor. Most commenters on this issue contended that the amount of lead-based paint disturbed, rather than the type of project or contractor involved, should control the applicability of the rule.

EPA specifically disagrees that scuff-sanding and scraping are ''benign,'' especially in light of the dust lead levels generated by dry scraping in the Dust Study. The geometric mean post-work, pre-cleaning dust lead levels resulting from dry scraping were 2,686 μg/ft². After baseline cleaning procedures, the geometric mean was still 66 μg/ft². When the work practices required by the final rule were used, the geometric mean was 30 μg/ft². As stated above, all of the renovation activities in the Dust Study and the other studies in the record for this final rule created lead-based paint hazards. Therefore, this regulation will not exempt any category of specialty contractor or any specific type of renovation. EPA notes, however, that it has not prohibited the use of dry scraping or dry hand sanding. More information on prohibited renovation practices can be found in Unit III.E.4. of this preamble. EPA also notes that some small jobs will be exempt from the requirements of this final rule under the minor repair and maintenance exception.

EPA has also determined that, based on the comments, some changes to the proposed definition of the term ''renovation'' are necessary to ensure that everyone understands that all types of building renovation, repair, and painting projects are covered, so long as painted surfaces are disturbed. The following definition of ''renovation'' will be incorporated into 40 CFR 745.83.

Renovation means the modification of any existing structure, or portion thereof, that results in the disturbance of painted surfaces, unless that activity is performed as part of an abatement as defined by this part (40 CFR 745.223). The term renovation includes (but is not limited to): The removal, modification or repair of painted surfaces or painted components (e.g., modification of painted doors, surface restoration, window repair, surface preparation activity (such as sanding, scraping, or other such activities that may generate paint dust)); the removal of building components (e.g., walls, ceilings, plumbing, windows); weatherization projects (e.g., cutting holes in painted surfaces to install blown-in insulation or to gain access to attics, planing thresholds to install weather-stripping), and interim controls. A renovation performed for the purpose of converting a building, or part of a building, into target housing or a child-occupied facility is a renovation under this subpart. The term renovation does not include minor repair and maintenance activities.

EPA added ''repair,'' ''surface restoration,'' ''window repair,'' ''weatherization,'' and ''interim controls'' to the definition to make it clear that all of these activities are covered by this definition if they disturb painted surfaces. EPA also separated the removal and the modification of building components to provide clarity. In addition, EPA provided examples of weatherization activities and building component removal. Finally, EPA added a sentence to ensure that it is clear that renovations performed to turn a building into target housing or a child-occupied facility are covered.

Thus, interim control projects and weatherization projects that disturb painted surfaces are renovations. In addition, under this definition, the line between renovation and abatement is clear. Any renovation, repair, maintenance, or painting project is a renovation potentially covered by this rule unless the purpose of the project is to permanently eliminate lead-based paint or lead-based paint hazards. In that case, the project is an abatement. Covered renovations must be performed in accordance with 40 CFR part 745, subpart E, while covered abatements must be performed in accordance with 40 CFR part 745, subpart L.

3. *Exceptions*—a. *Owner-occupied target housing that is neither the residence of a child under age 6 or a pregnant woman, nor a child-occupied facility.* The 2006 Proposal proposed to establish an exception that would allow owner-occupants of target housing to opt-out of having renovation firms use the work practices that would be required by the rule. The proposed exception provided that if the owner-occupant signed a statement that no child under 6 resided there, the renovation would be exempt from the training, certification, and work practice requirements of the regulation. The 2007 Supplemental Proposal narrowed this exception. Under the 2007 Supplemental Proposal, owner-occupied target housing where no child under age 6 resides would not be eligible for this exception if the housing meets the definition of ''child-occupied facility.'' This final rule retains this exception, but further narrows it to exclude housing where pregnant women reside. In addition, to make it clear to the property owner what the effect of the signed statement is, EPA has modified the requirements to include an acknowledgment by the owner that the renovation firm will not be required to use the lead-safe work practices contained in EPA's renovation, repair, and painting rule. Thus, unless the target housing meets the definition of a child-occupied facility, if an owner-occupant signed a statement that no child under 6 and no pregnant woman reside there and an acknowledgment that the renovation firm will not be required to use the lead-safe work practices contained in EPA's renovation, repair, and painting rule, the renovation activity is exempt from the training, certification, and work practice requirements of the rule. Conversely, if the owner-occupant does not sign the certification and acknowledgement (even if no children under 6 or no pregnant women reside there), or if the owner-occupant chooses not to take advantage of the exception for other reasons, the exception does not apply and the renovation is subject to the requirements of this final rule.

EPA asked for and received numerous comments on this aspect of the 2006 Proposal. Several commenters supported EPA's focus on housing where children under age 6 reside, citing the need to target society's resources towards the housing that presents the greatest risk. One commenter also noted that this provision would help keep renovation costs down for low-income homeowners without children. Most commenters, however, did not agree with EPA's proposal to allow homeowners with no children under age 6 who occupy their own homes to opt out of the rule's requirements. These commenters cited a number of reasons for their position, including the fact that children visit homes where they do not reside, and newly renovated housing may be sold to a family with young children regardless of whether children were in residence when the renovation occurred. Commenters also expressed concern about pregnant women, given that the transplacental transfer of lead in humans is well documented, and infants are generally born with a lead body burden reflecting that of the mother. This led some commenters to suggest that women of child-bearing age and girls between the ages of 6 and 14 also deserve special protection, because any lead body burden that they acquire through uncontrolled renovations will be passed on to any children they may eventually have.

EPA has carefully considered the issues and concerns raised with respect to exceptions to the rule. On the one

hand, EPA agrees with the commenters that believed it was important to focus this regulation on the housing that presents the greatest risk to young children. EPA is mindful of the impacts this regulation may have on the affordability of renovations, particularly for low-income homeowners. EPA believes that primarily focusing society's resources on the housing that presents the greatest risk to children is consistent with Congressional intent. In the Senate report on Title X, Congress noted the need ''for a flexible, targeted approach for protecting children from exposure to lead hazards while maintaining housing affordability'' (Ref. 25). The report also noted that ''exposure to lead is primarily caused by ingesting paint dust or chips,'' which is the route of exposure of concern primarily for young children, ages 18–27 months. Indeed, in the Congressional findings for Title X, Congress focused on the lead poisoning of children and the need to address this as a national priority. [Sec. 1002, Public Law 102–550]. The focus on children can also be inferred from the very definition of ''target housing'' which on the one hand excludes housing for the elderly and disabled ''unless a child under six resides or is expected to reside'' there. Similarly, this final rule focuses on the population most at risk and does not provide any exceptions if a child under age 6 resides in the target housing to be renovated.

On the other hand, EPA understands and shares some of the concerns expressed by those commenters who did not support an exception for owner-occupied target housing where no child under 6 resides. In balancing these countervailing considerations, EPA has further limited this exception to owner-occupied target housing that does not meet the definition of a child-occupied facility because no child under 6 is present on a regular basis and in which no pregnant women reside. This has the effect of focusing this regulation primarily on renovations performed in buildings where children under age 6 reside or spend a great deal of time or in which a pregnant woman resides.

With regard to older children and adults, it is important to remember that the hazards presented by a particular floor or windowsill dust lead level are markedly different for a toddler than for an older child or an adult. As discussed in EPA's most recent Air Quality Criteria for Lead document, hand-to-mouth behavior is an important means of exposure for children. The period of peak exposure, reflected in peak blood lead levels, is around 18–27 months when hand-to-mouth activity is at its maximum. This leads to a high rate of ingestion of dust at a time when children are believed to be particularly vulnerable to the neurological effects of lead exposure. While lead exposure continues to affect older children and adults, these individuals do not ingest dust at the same high rate that a toddler does. Therefore, the same floor dust level will present a much greater hazard for the young child than it will for the older child or adult. The lead-based paint hazard standards in 40 CFR part 745, subpart D, were established with reference to impacts on childhood blood lead levels based principally on hand-to-mouth activity, and EPA has not assessed the effect of dust lead levels or other potential sources of lead-based paint hazards on older children or adults.

However, EPA is particularly concerned about exposure to pregnant women because while the exposure patterns for small children and older children and adults are different, once exposed a pregnant woman can transfer lead to the developing fetus. Epidemiologic evidence indicates that lead freely crosses the placenta resulting in continued fetal exposure throughout pregnancy. Of particular concern is transfer to the developing brain of the fetus across the poorly developed blood brain barrier. Further, a significant proportion of lead transferred from the mother is incorporated into the developing skeletal system of the offspring, where it can serve as a continuing source of toxic exposure (Ref. 1). Thus, EPA agrees with the commenters who believed it is important to ensure that the work practices required in this final rule are followed in homes where a pregnant woman resides.

EPA also acknowledges the concern expressed by a number of commenters that newly renovated housing will be sold to a family with young children. If the renovation was not performed in accordance with the work practices prescribed by this rule, a dust-lead hazard may be present in the home. However, EPA does not believe it is an effective use of society's resources to impose this final rule requirements on all renovations in order to account for the portion of homes without young children that will be sold to families with young children following renovations. Moreover, the Disclosure Rule, 40 CFR part 745, subpart F, requires sellers of target housing to disclose known lead-based paint or lead-based paint hazard information to purchasers and provide them with a copy of the lead hazard information pamphlet entitled*Protect Your Family From Lead in Your Home* (Ref. 7). In the situation described by the commenters, the receipt of this information should prompt the family to inquire about potential lead-based paint hazards in the home, particularly if one of the selling points is that areas of the home have been recently renovated. In addition, EPA continues to recommend that purchasers take advantage of their statutory opportunity to have a lead-based paint inspection or risk assessment done while in the process of purchasing target housing.

In response to comments expressing concern about this exception from this final rule, EPA has further considered the proposed owner-occupant acknowledgement statement and concluded that it is important that homeowners understand the effect of the acknowledgement. Accordingly, EPA has clarified and expanded the acknowledgement language to ensure that it is clear and consistent. In addition, EPA would like to make it clear that even if the housing to be renovated qualifies for this exception, the homeowner may always choose to have the renovation firm follow the work practices required by this rule. For example, the homeowner may be concerned about potential exposures for visiting children who do not visit often enough to make the housing a child-occupied facility. The homeowner may also be concerned that she may be pregnant, even though she is not yet certain. EPA has added a statement to the sample acknowledgment form that would allow the homeowner to state that the housing does qualify for the exception, but the homeowner wishes the renovation firm to follow the requirements of this rule anyway.

EPA would like to reiterate that this exception applies only to target housing that is occupied by its owner. For a number of reasons, this exception is not available in rental target housing, whether young children are present or not. First, tenants are likely to have much less control over renovations in their housing than owners. Next, as pointed out by some commenters, there is more turnover in rental housing than in owner-occupied housing. In many cases, renovations are done between tenants and it may not be known who will be occupying the unit next. Finally, as noted by at least two commenters, exempting renovations in rental housing that is not occupied by a child under age 6 could cause discrimination in the rental housing market against families with young children. Nearly all of the commenters on this issue agreed with this approach.

Several commenters expressed reservations about the ability of renovation firms to determine whether housing to be renovated is eligible for this exception. As discussed in both proposals, EPA believes that it could be difficult for a renovation firm to determine whether a child under age 6 resides in a particular unit of target housing or whether the housing is a child-occupied facility or whether a woman is pregnant. EPA will therefore allow renovation firms to rely on a signed statement from the owner of the housing that he or she is the owner of the housing to be renovated, that he or she resides in the housing to be renovated, that no child under 6 or pregnant woman resides there, that the housing does not meet the definition of a child-occupied facility, and that the owner acknowledges that the renovation firm will not be required to use the lead-safe work practices contained in this final rule. In the absence of such a signed statement, the renovation firm must comply with all of the regulation's requirements. If the renovation firm obtains such a statement, the renovation firm is not subject to the work practice and other requirements of this final rule. EPA will not hold the renovation firm responsible for misrepresentations on the part of the owner of the housing. Renovations in common areas of owner-occupied multi-unit target housing, such as condominiums, must be performed in accordance with the requirements of this rule unless the renovation firm obtains a signed statement from each occupant with access to the common area that the occupant is the owner of the housing unit, that he or she resides there, that no child under age 6 or pregnant woman resides there, that the housing does not meet the definition of child-occupied facility, and that the owner understands that the renovation firm will not be required to use the work practices contained in this final rule.

Finally, some commenters argued that TSCA section 402(c)(3) requires EPA to cover all renovations in target housing regardless of whether the housing is the residence of a child under age 6 or a child-occupied facility. This regulation covers all target housing. In order to perfect a claim for the exception for owner-occupied target housing that is not the residence of a child under age 6 or a pregnant woman or a child-occupied facility, the renovation firm must obtain the owner's signature on a form indicating that the housing qualifies for the exception and the owner is opting out of the training, certification, and work practice requirements of this rule. In addition, the form and regulation provide the option for a homeowner to request that the work conform to the requirements of this final rule even in homes without young children or pregnant women. EPA believes homeowners without young children or who reside in homes without pregnant women should be able to choose whether or not work done in their own homes conforms to the requirements of this final rule. EPA has determined that allowing these owner-occupants to opt out of the training, certification, and work practice requirements of the rule does not significantly compromise the safety and effectiveness of this rule because the limitations on the applicability of the exception with respect to children under 6 and pregnant women serve to minimize the possibility that a young child or a pregnant woman will be exposed to a lead-based paint hazard resulting from a renovation in target housing.

b. *Renovations affecting only components free of regulated lead-based paint*—i. *Determination by certified inspector or risk assessor.* In keeping with the 2006 Proposal and the 2007 Supplemental Proposal, this final rule exempts renovations that affect only components that a certified inspector or risk assessor has determined are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm^2 or 0.5% by weight. These standards are from the definition of lead-based paint in Title X and in EPA's implementing regulations. Nearly all of the commenters that expressed an opinion on this topic favored this exception. The determination that any particular component is free of lead-based paint may be made as part of a lead-based paint inspection of an entire housing unit or building, or on a component-by-component basis.

Some commenters expressed confusion over the mechanics of this exception. The certified inspector or risk assessor determines whether components contain lead-based paint, while the renovation firm is responsible for determining which components will be affected by the renovation. A renovation firm may rely on the report of a past inspection or risk assessment that addresses the components that will be disturbed by the renovation.

ii. *Determination by certified renovator using EPA-recognized test kits.* Also in accordance with both of the proposals, this final rule exempts renovations that affect only components that a certified renovator, using a test kit recognized by EPA, determines are free of lead-based paint. EPA has deleted the regulatory thresholds for lead-based paint from this definition because they unnecessarily complicate the exception. As discussed in Unit III.C.1. of this preamble, a certified renovator is a person who has taken an accredited course in work practices. This training will include how to properly use the EPA-approved test kits. This final rule also establishes the process EPA will use to recognize test kits.

As discussed in the preamble to the 2006 Proposal, research on the use of currently available kits for testing lead in paint has been published by the National Institute of Standards and Technology (NIST) (Ref. 26). The research indicates that there are test kits on the market that, when used by a trained professional, can reliably determine that regulated lead-based paint is not present by virtue of a negative result. Based on this research, EPA proposed to initially recognize test kits that have, for paint containing lead at or above the regulated level, 1.0 mg/cm^2 or 0.5% by weight, a demonstrated probability (with 95% confidence) of a negative response less than or equal to 5% of the time.

Some commenters, representing a variety of interests, supported an exception for renovations affecting components that have been found to be free of regulated lead-based paint by use of a test kit. One commenter cited the need for faster and cheaper methods of accurately checking for lead and expressed the opinion that this approach will expand access to lead screening in homes. Several comments were generally supportive, with some reservations about kit reliability.

However, most commenters did not favor the use of test kits. The most commonly cited reason for not supporting this approach was the potential conflict-of-interest present in having the certified renovator be the one to determine whether or not he or she must use the work practices required by the rule. EPA addressed potential conflicts-of-interest in its lead-based paint program in the preamble to the final Lead-based Paint Activities Regulations. That discussion outlined two reasons for not requiring that inspections or risk assessments, abatements, and post-abatement clearance testing all be performed by different entities. The first was the cost savings and convenience of being able to hire just one firm to perform all necessary lead-based paint activities. The second was the potential regional scarcity of firms to perform the work. These considerations may also be applicable to the renovation sector, given the premium on maintaining a

rule that is simple and streamlined and does not unduly prolong the timeframes for completing renovations. Moreover, it is not unusual in regulatory programs to allow regulated entities to make determinations affecting regulatory applicability and compliance. See, e.g., 40 CFR 262.11 (hazardous waste determinations by waste generators under RCRA). EPA has decided to take an approach that is consistent with the approach taken in the 402(a) lead-based Paint Activities regulation and not require third party testing.

Another commonly cited reason for not supporting the use of test kits by certified renovators was the lack of any sampling protocol in the regulation. A related concern was that the training in sampling techniques and protocols in the lead-based paint inspector course could not be shortened to fit within the 8–hour renovator course and still retain all of the necessary information. EPA wishes to make it clear that the 8–hour renovator course will not train renovators in how to select components for sampling because the certified renovator must use a test kit on each component affected by the renovation. The only exception to this is when the components make up an integrated whole, such as the individual stair treads and risers in a staircase. In this situation, the renovator need test only one such individual component, e.g., a single stair tread, unless it is obvious to therenovator that the individual components have been repainted or refinished separately. As such, a complicated sampling protocol is not necessary. EPA plans to modify the EPA/HUD Lead Safe Work Practices course to include training on how to use a test kit. To ensure that the applicability of the exception is clear, EPA has also modified 40 CFR 745.82(a)(2) to specifically state that the certified renovator must test each of the components that will be affected by the renovation.

iii. *Phased implementation and improved test kits*. Under the proposals, the regulatory requirements would have taken effect in two major stages, based on the age of the building being renovated. The first stage would have applied to renovations in target housing and child-occupied facilities built before 1960. Requirements for renovations in target housing and child-occupied facilities built between 1960 and 1978 would have taken effect 1 year later. The primary reason for this phased implementation was to allow time for the development of improved test kits.

According to the National Survey of Lead and Allergens in Housing, 24% of the housing constructed between 1960 and 1978 contains lead-based paint (Ref. 27). In contrast, 69% of the housing constructed between 1940 and 1959, and 87% of the housing constructed before 1940 contains lead-based paint. The results of this survey indicate that there is a much greater likelihood of disturbing lead-based paint during a renovation that occurs in a home built before 1960 than in a home built after that date. The NIST research on existing test kits shows that existing test kits cannot reliably determine that lead is present in paint only above the statutory levels because the kits are sensitive to lead at levels below the Federal standards that define lead-based paint, and therefore are prone to a large number of false positive results (i.e., a positive result when regulated lead-based paint is, in fact, not present). The NIST research found that such false positive rates range from 42% to 78%. This means that the currently available kits are not an effective means of identifying the 76% of homes built between 1960 and 1978 that do not contain regulated lead-based paint.

Research conducted by EPA subsequent to the publication of the 2006 Proposal confirms that the sensitivity of test kits could be adjusted for paint testing so that the results from the kits reliably correspond to one of the two Federal standards for lead-based paint, 1.0 mg/cm^2 and 0.5% by weight. EPA's research and initial contacts with potential kit manufacturers also indicate that this can be accomplished in the near future. As stated in the preamble to the 2006 Proposal, EPA's goal is to foster the development of a kit that can reliably be used by a person with minimal training, is inexpensive, provides results within an hour, and is demonstrated to have a false positive rate of no more than 10% and a false negative rate at 1.0 mg/cm^2 or 0.5% by weight of less than 5%. EPA is confident that improved test kits meeting EPA's benchmarks will be commercially available by September 2010.

With this in mind, EPA felt that a staged approach would initially address the renovations that present the greatest risks to children under age 6, i.e., the renovations that are most likely to disturb lead-based paint, while allowing additional time to ensure that the improved test kits are commercially available before phasing in the applicability of the rule to newer target housing and child-occupied facilities. However, EPA was concerned about delaying implementation for post-1960 target housing and child-occupied facilities that are occupied or used by children under age 6 with increased blood lead levels. In order to reduce the possibility that an unregulated renovation activity would contribute to continuing exposures for these children, the 2006 Proposal would have required renovation firms, during the first year that the training, certification, work practice and recordkeeping requirements are in effect, to provide owners and occupants of target housing built between 1960 and 1978 and child-occupied facilities built between 1960 and 1978 the opportunity to inform the firm that the building to be renovated is the residence of, or is a child-occupied facility frequented by, a child under age 6 with a blood lead level that equals or exceeds the CDC level of concern, or a lower State or local government level of concern. If the owner or occupant informs the renovation firm that a child under age 6 with an increased blood lead level lives in or frequents the building to be renovated, the renovation firm must comply with all of the training, certification, work practice, and recordkeeping requirements of this regulation.

Some commenters agreed that a staged approach was probably necessary, given the number of renovations that would be covered by the rule, and that a focus on buildings built before 1960 was appropriate. However, most commenters objected to the phased implementation. Some were concerned about the potential exposures to children in buildings built between 1960 and 1978 during the first stage of the rule. Another major concern expressed by commenters was that the phased implementation would unnecessarily complicate the rule, especially with the provision relating to children under age 6 with increased blood lead levels. These commenters felt that, because there already are accurate methods for determining whether a building contains lead-based paint, and because renovation firms ought to get into the habit of working in a lead-safe manner whenever they are working on a building built before 1978, the utility of the delay does not outweigh the likely confusion in the regulated community. Commenters also expressed reservations about providing sensitive medical information to contractors, in the case of children under age 6 with increased blood lead levels.

After reviewing the comments and weighing all of the factors, including EPA's expectation that the improved test kits will be commercially available by September 2010, EPA has decided not to include a phased implementation in this rulemaking. Therefore, this

regulation will take effect at the same time for target housing and child-occupied facilities regardless of whether they were built before or after 1960. Nonetheless, if the improved test kits are not commercially available by September 2010, EPA will initiate a rulemaking to extend the effective date of this final rule for 1 year with respect to owner-occupied target housing built after 1960.

iv. *Test kit recognition process*. In the 2006 Proposal, EPA described proposed criteria for test kit recognition. Specifically, for paint containing lead at or above the regulated level, 1.0 mg/cm² or 0.5% by weight, EPA stated its intention to only recognize kits that have a demonstrated probability (with 95% confidence) of a negative response less than or equal to 5% of the time. In addition, as soon as the improved test kits are generally available, EPA proposed to recognize only those test kits that have a demonstrated probability (with 95% confidence) of a false positive response of no more than 10% to lead in paint at levels below the regulated level. EPA stated its belief that limiting recognition to kits that demonstrate relatively low rates of false positives would benefit the consumer by reducing the number of times that the training and work practice requirements of this regulation are followed in the absence of regulated lead-based paint. EPA also proposed to require that these performance parameters be validated by a laboratory independent of the kit manufacturer, using ASTM International's E1828, Standard Practice for Evaluating the Performance Characteristics of Qualitative Chemical Spot Test Kits for Lead in Paint (Ref. 28) or an equivalent validation method. In addition, the instructions for use of any particular kit would have to conform to the results of the validation, and the certified renovator would have to follow the manufacturer's instructions when using the kit. EPA requested comment on whether these standards are reasonably achievable and sufficiently protective. EPA also solicited input on how to conduct the kit recognition process.

Some commenters expressed reservations about the proposed performance criteria, contending that a false negative rate of 5% is too high to be protective. However, a 5% false negative rate (with 95% confidence) is similar to the performance requirements for other lead-based paint testing methods, such as laboratory analysis used for lead-based paint inspections, and is considered to be the statistical equivalent of zero. Therefore, this final rule retains the proposed false-negative criteria for test kit recognition, i.e., for paint containing lead at or above the regulated level, 1.0 mg/cm² or 0.5% by weight, kits will be only recognized if they have a demonstrated probability (with 95% confidence) of a negative response less than or equal to 5% of the time. Because no comments were received on the proposed false-positive criteria of 10% for the improved test kits, this final rule also retains the proposed false-positive criteria for the improved kits, i.e., after the improved kits are available, the only test kits that will be recognized are those that have a demonstrated probability (with 95% confidence) of a false positive response of no more than 10% to lead in paint at levels below the regulated level.

EPA did not receive any comments or suggestions on the test kit recognition process itself. With respect to existing test kits, EPA has determined that the NIST research (Ref. 26) is the equivalent of an independent laboratory validation of test kit performance. The NIST research found that three kits met the false-negative criteria established in this final rule. For the purposes of this regulation, EPA will therefore recognize these test kits, provided that they still use the same formulation that was evaluated by NIST. These test kits will be recognized by EPA until EPA publicizes its recognition of the first improved test kit.

With respect to the improved test kits, EPA has determined that Environmental Technology Verification Program (ETV) is a suitable vehicle for obtaining independent laboratory validation of test kit performance. EPA intends to use ETV or an equivalent testing program approved by EPA for the test kit recognition process. The goal of the ETV Program is to provide independent, objective, and credible performance data for commercial-ready environmental technologies. The ETV process promotes these technologies implementation for the benefit of purchasers, permitters, vendors and the public. If ETV is used, EPA would utilize the Environmental and Sustainable Technology Evaluations (ESTE) element of the ETV program because the development of the test kits is in support of this final rule, and the ESTE element was created in 2005 to address Agency priorities such as rule making. More information on this program is available on EPA's website at *http://www.epa.gov/etv/index.html*.

In the 2006 Proposal, EPA noted that it would look to ASTM International's E1828, Standard Practice for Evaluating the Performance Characteristics of Qualitative Chemical Spot Test Kits for Lead in Paint (Ref. 28) or equivalent for a validation method for test kits. With the input of stakeholders, EPA is adapting this ASTM Standard for use in the laboratory validation program. The testing protocol will consist of an evaluation of the performance of the test kits, using the manufacturer's instructions, on various substrates, such as wood, steel, drywall, and plaster, with various lead compounds, such as lead carbonate and lead chromate, at various lead concentrations above and below regulatory threshold for lead-based paint. To be consistent with the performance criteria of the National Lead Laboratory Accreditation Program, the testing protocol will not involve testing the performance of the kits on paint that contains between 0.8 milligrams of lead per square centimeter and 1.2 milligrams of lead per square centimeter. After a test kit has gone through the ETV or other EPA approved testing process, EPA will review the test report to determine whether the kit has been demonstrated to achieve the criteria set forth in the rule. EPA anticipates that evaluation of the improved test kits under the recognition program will begin by August 2009.

In addition, EPA intends to allow other existing test kit manufacturers the opportunity to demonstrate that their kits meet the false negative criteria described in 40 CFR 745.88(c)(1) by going through the ETV process. Any recognition granted to test kits based only on the false negative criteria will expire when EPA publicizes its recognition of the first improved test kit that meets both the false negative and false positive criteria of 40 CFR 745.88(c).

Beginning on September 1, 2008, EPA's ETV program will accept applications for testing from test kit manufacturers. Applications must be submitted, along with a sufficient number of kits and the instructions for using the kits, to EPA. The test kit manufacturer should first visit the following website for information on where to apply: *http://www.epa.gov/etv/howtoapply.html*.

c. *Minor repair and maintenance*. EPA proposed to incorporate into this regulation the minor maintenance exception for the Pre-Renovation Education Rule. The proposed minor maintenance exception would have applied to projects that disturb 2 ft² or less of painted surface per component. The preamble to the 2006 Proposal discusses the history of this exception and requested comment on potential changes. In particular, EPA noted that HUD's Lead Safe Housing Rule, at 20 CFR 35.1350(d), includes a *de minimis* exception for projects that disturb 2 ft² or less of painted surface per room for

interior projects, 20 ft² or less of painted exterior surfaces, and 10% or less of the total surface area on an interior or exterior type of component with a small surface area. If less than this amount of painted surface is disturbed, HUD's lead-safe work practice requirements do not apply. EPA's lead-based Paint Activities Regulation incorporates this as an exception for small projects at 40 CFR 745.65(d). EPA requested comment on whether the minor maintenance exception in this regulation should be consistent with other EPA regulations and the HUD Lead Safe Housing Rule. This provision describes the applicability of the Pre-Renovation Education Rule as well as this final rule.

Most commenters expressed support for consistency in the various lead-based paint regulations administered by EPA and HUD. They noted that a consistent exception for small projects or minor maintenance would be easier for the regulated community to apply. Many of these commenters recommended 2 ft² for interior projects and 20 ft² on exterior surfaces. While some commenters supported a ''per component'' exception, several commenters specifically noted that the ''per component'' aspect of the existing Pre-Renovation Education Rule exception was problematic in that it could result in the disturbance of large areas of painted surfaces in a single room. Other commenters recommended that the threshold area for the exception be made smaller or the exception abolished. These commenters noted that even very small projects have the potential to create lead-based paint hazards and that, rather than worrying about the applicability of the exception, renovation firms should just get into the habit of performing every project in a lead-safe manner. Other commenters suggested that EPA consider a larger threshold area for the exception, or an exception based on other factors, such as time spent performing an activity. EPA recognizes that, depending upon the methods used to disturb lead-based paint, very small disturbances can release a great deal of lead. EPA also understands the practicality of a minor maintenance exception.

In weighing these competing considerations, EPA has decided to incorporate in this final rule a minor maintenance exception for projects that disturb 6 ft² or less of painted surface per room for interiors and 20 ft² or less of painted surface on exteriors. This addresses the concerns of those commenters who supported a ''per component'' exception while still limiting the overall amount of paint that can be disturbed in a single room during a single project. As in the 2006 Proposal, this exception is not available for window replacement projects. In contrast to the Proposal, this exception is only available for projects that do not use any of the work practices prohibited or restricted by 40 CFR 745.85(a)(3) and that do not involve demolition of painted surface areas.

EPA remains convinced that the distinction between renovation and minor maintenance activities is an important part of implementing this program. Congress directed EPA to address renovation and remodeling. In ordinary usage, minor maintenance activities that might disturb lead-based paint (e.g., removing a face plate for an electric switch to repair a loose connection, adding a new cable TV outlet, or removing a return air grill to service the HVAC system) are not normally considered home renovations. EPA believes that minor repair and maintenance activities that cover 6 ft² or less per room and 20 ft² or less for exteriors and that do not involve prohibited practices, demolition or window replacement would not ordinarily be considered renovation or remodeling but would better be described as minor work on the home or COF. EPA also believes that a typical minor repair and maintenance activity would not normally involve the use of high dust generating machinery such as those prohibited or restricted by this rule. To make the distinction between renovations and minor repair and maintenance activities clear, EPA has added a definition of ''minor repair and maintenance activities'' to 40 CFR 745.83. This term is defined as follows:

> Minor repair and maintenance activities'' are activities, including minor heating, ventilation or air conditioning work, electrical work, and plumbing, that disrupt 6 square feet or less of painted surface per room for interior activities or 20 square feet or less of painted surface for exterior activities where none of the work practices prohibited or restricted by § 745.85(a)(3) are used and where the work does not involve window replacement or demolition of painted surface areas. When removing painted components, or portions of painted components, the entire surface area removed is the amount of painted surface disturbed. Jobs, other than emergency renovations, performed in the same room within the same 30 days must be considered the same job for the purpose of determining whether the job is a minor repair and maintenance activity.

To accommodate this new definition of ''minor repair and maintenance activities,'' the definition of ''renovation'' in § 745.83 has also been changed to include the following sentence: ''The term renovation does not include minor repair and maintenance activities.'' As a result of these two definitional changes, the reference to minor maintenance in 40 CFR 745.82(a)(1) is no longer necessary. Therefore, when engaged in minor repair and maintenance activities as defined in 40 CFR 745.83, renovation firms and renovators are not covered by this rule. EPA believes this approach--eliminating the per-component limitation in favor of an overall size cap, and prohibiting practices that EPA believes are inconsistent with minor maintenance work and that generate very high lead dust loadings--is a reasonable balance of the considerations identified by commenters and considered by EPA.

Several commenters expressed concerns about how the exception would be applied, and whether various activities would be covered by the rule or exempt under the minor maintenance exception. Window replacement was of interest to several commenters, who referred to EPA's previous guidance on window replacement under the Pre-Renovation Education Rule (Ref. 29). That guidance states that window replacement, for various reasons, cannot qualify for the minor maintenance exception. EPA knows of no reason why this interpretation should be changed. In fact, contrary to the assertions of some commenters, the Dust Study found that window replacement was one of the more hazardous jobs. The geometric mean of the lead content of floor dust samples taken in the work area after the window replacement projects was 3,003 µg/ft² (Ref. 17, at 6–11). In addition, EPA does not believe that window replacement is within the common understanding of the meaning of either minor repair or maintenance. EPA has specifically included language in the definition of ''minor repair and maintenance activities'' to make it clear that window replacements cannot qualify.

Two commenters contended that, when determining whether wall or ceiling cut-outs exceed the minor maintenance exception, the painted surface disturbed should be measured by multiplying the length of the cut by its width, as opposed to the total size of the cut-out. EPA disagrees with these commenters. For cut-outs, the calculation is made for the entire area of surface being disturbed, e.g., the area of the cut-out, for the following reasons:

- The removed portion can flex or be broken during the removal process and the paint can flake off;
- The removed portion can fall on the floor and be trampled upon; or
- The removed portion may not be removed as a single piece.

Calculating the amount of painted surface disturbed in the manner that the commenters suggested would also complicate the rule and be more difficult to convey during the renovator training course. In response to these comments, EPA has inserted clarifying language on this into the text of the definition of ''minor repair and maintenance activities'' at 40 CFR 745.83.

One commenter recommended that EPA prohibit splitting work, i.e., conducting a single project as several minor maintenance activities in the same room in a short time (like a month) in order to avoid the regulatory requirements. EPA agrees with this commenter. It has always been EPA's interpretation of the Pre-Renovation Education Rule that renovators could not artificially split up projects in order to avoid having to provide the pamphlet. In response to this comment, EPA has inserted clarifying language on this into the definition of ''minor repair and maintenance activities'' at 40 CFR 745.83. This definition states that jobs, other than emergency renovations, performed in the same room within the same 30 days must be considered the same job for the purpose of determining whether the job is a minor repair and maintenance activity.

d. *Emergency projects*. Both the 2006 Proposal and the 2007 Supplemental Proposal proposed to retain the emergency project exception in the Pre-Renovation Education Rule with one modification. EPA proposed to clarify that interim control projects performed on an expedited basis in response to an elevated blood lead level finding in a resident child qualify for the emergency project exception from the Pre-Renovation Education Rule requirements. As discussed in the 2006 Proposal, EPA was concerned that local public health organizations may be delayed in responding to a lead-poisoned child if the owner of the building where the child resides is not available to acknowledge receipt of the lead hazard information pamphlet before an interim control project begins. In addition, EPA recognized that some emergencies could make it difficult to comply with all of the training, certification, work practice, and recordkeeping requirements. For example, a broken water pipe may make it impossible to contain the work area before beginning to disturb painted surfaces to get to the pipe. The proposed emergency project exception would have required firms to comply with the work practice, training, certification, and recordkeeping requirements to the extent practicable.

EPA received a number of comments on this aspect of the 2006 Proposal. Several recognized the need for such an exception, but most of the commenters were concerned that the language of the proposal would make it possible for renovation firms to circumvent the training, certification, and work practice controls when performing interim controls in response to a child with an elevated blood lead level. A number of these commenters, as well as several others, urged EPA to be more specific about which requirements could be bypassed in particular situations. EPA agrees with these commenters. It never was EPA's intention to allow firms performing interim controls in response to a poisoned child to use untrained workers or work in a manner not consistent with the work practices required by this rule.

EPA has therefore revised the exception to specifically state that interim controls performed in response to a child with an elevated blood lead level are only exempt from the information distribution requirements, which is consistent with the current Pre-Renovation Education Rule. EPA has also modified the exception to state that emergency renovations are only exempt to the extent necessary to respond to the emergency from the training, certification, sign posting, and containment requirements of this regulation. For example, most property management companies who do their own maintenance are likely to have at least one trained and certified renovator on staff to perform renovations, so these companies should be able to comply with the training and certification requirements on all renovations. Likewise, firms performing emergency renovations should be able to follow the required cleaning procedures after emergency repairs have been made. As such, under the final rule, in all cases the cleaning specified by the regulation must be performed and it must be performed or directed by certified renovators. In addition, in all cases, the cleaning verification requirements of this regulation must be performed and they must be performed by a certified renovator. In response to one commenter who requested that EPA require firms to document their inability to comply with all of the regulatory provisions in emergencies, EPA has included such a requirement in 40 CFR 745.86(b)(7). Finally, EPA has removed the word ''operations'' from the exception, in response to one commenter who suggested that the word is unnecessary and confusing. EPA agrees that the word ''operations'' is unnecessary in its description of emergency renovations. EPA intends to continue interpreting the term ''emergency renovations'' in the same way that it always has done, except that EPA has clarified that interim controls performed in response to a child with an elevated blood-lead level can be an emergency renovation.

B. Pre-Renovation Education

The Pre-Renovation Education Rule, promulgated pursuant to TSCA section 406(b) and codified at 40 CFR part 745, subpart E, requires renovators to provide owners and occupants of target housing with a lead hazard information pamphlet before beginning a renovation in the housing (Ref. 8). The pamphlet currently used for this purpose, ''Protect Your Family From Lead in Your Home,'' was developed in accordance with TSCA section 406(a) and includes useful information on lead-based paint and lead-based paint hazards in general. This pamphlet is also used to provide lead hazard information to purchasers and renters of target housing under the Requirements for Disclosure of Information Concerning lead-Based Paint in Housing ''Lead Disclosure Rule'' (Ref. 30).

1. *New renovation-specific pamphlet*. EPA has developed a new lead hazard information pamphlet that addresses renovation-specific lead exposure concerns. The development of this pamphlet, including the public comments received on the format and content, is discussed in greater detail in a separate notice published elsewhere in today's **Federal Register**. This new renovation-specific pamphlet, entitled *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools* will better inform families about the risks of exposure to lead-based paint hazards created during renovations and promote the use of work practices and other health and safety measures during renovation activities (Ref. 31). This new pamphlet gives information on lead-based paint hazards, lead testing, how to select a contractor, what precautions to take during the renovation, and proper cleanup activities, while still incorporating the information already included in the original ''Protect Your Family From Lead In Your Home'' and mandated by section 406(a) of TSCA.

In the 2006 Proposal, EPA proposed to require renovation firms to distribute the new renovation-specific pamphlet (then titled *Protect Your Family From Lead During Renovation, Repair & Painting*) instead of the pamphlet currently used for this purpose (*Protect Your Family From Lead in Your Home*).

In general, most commenters were supportive of a requirement to distribute a new renovation-specific pamphlet for the purposes of TSCA section 406(b). One commenter stated a belief that the existing *Protect Your Family From Lead in Your Home* pamphlet had served its purpose well and the development of a new pamphlet should not be a priority. EPA agrees with the commenters who recognized the merit of providing renovation-specific information to owners and tenants before renovations commence. Therefore, this final rule will require renovation firms to distribute the new *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools*; pamphlet before beginning renovations. This requirement to use the new pamphlet will become effective as discussed in Unit III.H. of this preamble.

2. *Information distribution requirements*. Other than the use of the new renovation-specific pamphlet, EPA did not specifically propose any changes to the existing information distribution requirements for target housing that does not meet the proposed definition of ''child-occupied facility.'' One commenter contended that the existing information distribution requirements for multi-family target housing were extremely burdensome and resulted in tenants being given multiple notifications and copies of the lead hazard information pamphlet over the course of a year's time. This commenter requested that EPA modify the regulations to allow an annual distribution of renovation-related lead hazard information to tenants. However, as noted in interpretive guidance previously issued on the Pre-renovation Education Rule, EPA, in developing the final Pre-renovation Education Rule, carefully weighed whether a one-time pamphlet distribution would be adequate to meet the objectives of section 406(b) of the lead statute, and concluded that many, if not most, tenants would benefit from receiving the information in the lead pamphlet closer to the time that a renovation is to begin. Although some tenants may read lead information delivered on a ''for-your-information'' basis, many others are not likely to focus on potential lead hazards until a renovation affecting their unit is imminent, and would welcome receiving information on protecting their families from lead in a more timely fashion. Therefore, EPA has determined that an annual distribution of renovation-specific lead hazard information would not be an effective means of providing timely information to tenants.

However, with respect to renovations in common areas, EPA has determined that there are other effective ways of delivering lead hazard information to tenants in a timely manner. Specifically, the posting of informational signs during the renovation in places where the tenants of the affected units are likely to see them will provide these tenants with the information they need at the time that they need it. Depending upon the circumstances, renovation firms may find the posting of such signs to be less burdensome than mailing or hand-delivering this information to affected tenants. Indeed sign posting may be more effective than mail since it provides an immediate reminder. Therefore, EPA will allow renovation firms performing renovations in common areas of multi-unit target housing the option of mailing or hand-delivering general information about the renovation and making a copy of the pamphlet available to the tenants of affected units upon request prior to the start of the renovation, or posting informational signs while the renovation is ongoing. These signs must be posted where they are likely to be seen by all of the tenants of the affected units and they must contain a description of the general nature and locations of the renovation and the anticipated completion date. The signs must be accompanied by a posted copy of the pamphlet or information on how interested tenants can review or obtain a copy of the pamphlet at no cost to the tenants.

One commenter expressed concern about tenants either not seeing the ''postings'' because they use different entrances or distinguishing the renovation-specific lead hazard information ''postings'' from other ''postings'' in the general area. To take advantage of this option, this final rule requires renovation firms to use actual signs, not notices on tenant bulletin boards. In addition, these signs must be posted where the tenants of all of the affected units can see them. If the tenants of the affected units use several different entrances, a sign posted by one of the entrances would not be sufficient.

With respect to renovations in individual housing units, whether single family or multi-family, firms performing renovations for compensation in target housing must continue to distribute a lead hazard information pamphlet to the owners and tenants of the housing no more than 60 days before beginning renovations. This requirement, along with the associated requirements to obtain acknowledgments or document delivery, has not changed. For renovations in the common areas of multi-unit target housing, firms must provide tenants with general information regarding the nature of the renovation and make the pamphlet available upon request, by mailing, hand-delivery, or posting informational signs. Firms must also maintain documentation of compliance with these requirements. The 2007 Supplemental Proposal contained additional proposed information distribution requirements for child-occupied facilities in target housing and in public and commercial buildings. This final rule incorporates those additional requirements.

Also, as proposed in the 2006 Proposal, this final rule deletes the existing 40 CFR 745.84 because it is duplicative. The section provided some details on submitting CBI and how EPA will handle that information. However, comprehensive regulations governing sensitive business information, including CBI under TSCA, are codified in 40 CFR part 2. The regulations in 40 CFR part 2 set forth the procedures for making a claim of confidentiality and describe the rules governing EPA's release of information. EPA received no comments on the proposed deletion of 40 CFR 745.84. Therefore, EPA is deleting this section and redesignating existing 40 CFR 745.85 as 40 CFR 745.84.

EPA is also taking this opportunity to reiterate who is responsible for complying with the information distribution responsibilities of 40 CFR 745.84. This provision of this final rule includes the existing Pre-Renovation Education Rule information distribution requirements as amended to include requirements applicable to child-occupied facilities. In interpretive guidance issued for the Pre-Renovation Education Rule, EPA shed additional light on the issue of who is responsible for complying with the information distribution requirements, particularly for renovation projects where multiple contractors are involved (Ref. 32). EPA stated that if the renovation is overseen by a general contractor, the general contractor is considered to be the ''renovator'' under the rule and is therefore responsible for ensuring that the information distribution requirements are met. EPA further stated that it would not consider a subcontractor to be a ''renovator'' for purposes of the Pre-Renovation Education Rule so long as the subcontractor has no direct contractual relationship with the property owner or manager relating to the particular renovation. EPA's reasoning is that the information distribution requirements

should be fulfilled by the person or entity with which the customer enters into the contract and compensates for the work--even if that work is subsequently contracted out.

This final rule changes the existing definition of ''renovator'' to refer specifically to the individual trained in work practices as distinct from the renovation firm. The final rule also specifies in 40 CFR 745.84 that the renovation firm is responsible for carrying out the information distribution requirements. Renovation firms may find it more efficient to have someone other than the certified renovator distribute the pamphlet and obtain the acknowledgement forms. In changing the definition of ''renovator,'' EPA is not changing its policies as to which entity, between a contractor and subcontractor, is responsible for carrying out the information distribution requirements. On the contrary, as to this issue, EPA intends to continue interpreting the regulatory responsibility for the information distribution requirements as it has in the past.

a. *Owners and occupants of public or commercial buildings containing a child-occupied facility.* The Pre-Renovation Education Rule covers only renovations in target housing. Thus, the information distribution requirements summarized in the preceding paragraph have not historically applied to firms performing renovations for compensation in public or commercial buildings. In the 2007 Supplemental Proposal, EPA proposed to require firms performing renovations for compensation in child-occupied facilities in public or commercial buildings to provide a lead hazard information pamphlet to the owner of the building as well as to an adult representative of the child-occupied facility, if the owner of the building and the child-occupied facility are different entities. This requirement was modeled on the Pre-Renovation Education Rule's requirements for pamphlet distribution in rental target housing. As described in the 2007 Supplemental Proposal, EPA has determined, in accordance with TSCA section 407, that the distribution of lead hazard information, before renovation projects begin, to an adult representative of the child-occupied facility as well as to the owners of public or commercial buildings that contain child-occupied facilities is necessary to ensure effective implementation of this regulation. EPA believes that information on lead-based paint hazards, and lead-safe work practices that minimize the creation of hazards, will stimulate interest on the part of child-occupied facilities and public or commercial building owners in these work practices and increase the demand for their use.

EPA received no comments on this aspect of the 2007 Supplemental Proposal. Therefore, the final rule includes this requirement as proposed. Renovation firms performing renovations for compensation in a child-occupied facility in a public or commercial building must provide the lead hazard information pamphlet entitled *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools*to the owner of the building. The renovation firm must either obtain written acknowledgment from the owner that the pamphlet was delivered or obtain a certificate of mailing for the pamphlet at least 7 days prior to the start of the renovation. In addition, the renovation firm must provide the pamphlet to an adult representative of the child-occupied facility if the facility and the building are owned by different entities. To document compliance with this requirement, the renovation firm must do one of the following:

- Obtain a written acknowledgment of pamphlet delivery from the adult representative of the child-occupied facility.
- Obtain a certificate of mailing for the pamphlet at least 7 days prior to the start of the renovation.
- Certify in writing that the pamphlet has been delivered to the child-occupied facility and the firm has been unsuccessful in attempting to obtain the signature of an adult representative of the child-occupied facility. This certification must contain the reason for the failure to obtain the signature.

b. *Parents and guardians of children under age 6 using a child-occupied facility.* The 2007 Supplemental Proposal would also have required a renovation firm performing a renovation for compensation in a child-occupied facility to provide information about the renovation to the parents and guardians of children under age 6 using the facility. This proposed requirement was designed to be comparable to the Pre-Renovation Education Rule provisions for informing adult occupants (who are not owners). EPA is finalizing this requirement as proposed. The renovation firm must either mail each parent or guardian the lead hazard information pamphlet and a general description of the renovation or post informational signs where parents and guardians would be likely to see them. The signs must be accompanied by a posted copy of the pamphlet or information on how to obtain the pamphlet at no charge to interested parents or guardians. This requirement applies to renovations in child-occupied facilities in target housing as well as to renovations in child-occupied facilities in public or commercial buildings.

EPA received three comments on this aspect of the 2007 Supplemental Proposal. One commenter expressed support for this proposed requirement. The other two provided a number of reasons why the final rule should not include such a requirement. These commenters noted that renovation firms have no contractual connection with or contractual responsibility to the parents or guardians of children using a child-occupied facility. They believe that the child-occupied facility owner bears primary responsibility for maintaining a safe environment for children. They were also concerned that renovation firms might be called upon to spend a significant amount of additional time at a child-occupied facility to answer parents' questions about lead poisoning. EPA is not persuaded by these comments. Although the firms may have no contractual connection with the parents or guardians of the children, that is often the case with occupants who are not owners. Although child-occupied facility owners bear responsibility for maintaining a safe environment for children, renovation firms are responsible for providing the pamphlet to owners and occupants. Once the renovation firm has distributed the pamphlet, it has no further obligation to educate the owners or occupants about lead poisoning. The pamphlet contains this information and refers to additional resources. EPA acknowledges that it may be difficult to provide copies of the pamphlet to each parent, which is why this final rule allows renovation firms to comply by posting informational signs where parents or guardians would be likely to see them.

c. *Other commenter suggestions regarding information distribution to owners and occupants.* EPA received a number of comments that recommended that additional information be provided to the owner and the occupant before and after a renovation occurs. These commenters believe that one of the purposes of this rule ought to be to provide enough information to owners and occupants so that they can understand the work practices and can adequately monitor the work being performed by renovation firms. EPA agrees that consumers will play a critical role in ensuring that the requirements of this regulation are being followed. EPA believes that some of the

suggested items of additional information, such as an explanation of the cleaning verification process, use of test kits, lead-based paint and dust testing recommendations, and how to find a qualified person to do testing, are best addressed through revisions to the new lead hazard informational pamphlet for renovations, *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools.* Those changes are described and discussed in a notice published elsewhere in today's **Federal Register**.

Other information distribution elements recommended by these commenters are likely to be provided by renovation firms already. For example, several commenters suggested that EPA require the renovation firm to provide emergency contact information to owners and occupants. EPA believes that, during the normal course of business, persons that hire renovation firms to perform renovations typically already have contact information. A person who contracts for a renovation is likely to be the owner of the property being renovated, and this person is also likely to be able to stop the work at any time so that he or she can confer with the certified renovator or supervisor. Occupants who are not the owners of the property being renovated often will not be the party contracting for the renovation and may not always have emergency contact information for the specific firm performing a renovation in their housing unit or building. However, these occupants will most likely have contact information for their landlord, and the landlord as the person most likely contracting with the renovation firm and therefore to have authority to direct the renovation work. In addition, renovations that occur in occupied rental housing are likely to be maintenance or repair projects that are performed by the landlord, the landlord's employees, or a maintenance company under contract to perform all maintenance for a particular landlord or rental complex.

Some commenters suggested that EPA require renovation firms provide a description of the work area and identify the designated entrance and exit from the work area. EPA is not requiring the renovation firm to designate a specific entrance and exit from the work area. This final rule requires the work area itself to be delineated by warning signs and plastic containment. EPA does not believe there is any utility in requiring the contractor to also provide the owner and occupant with a written description of the work area before the work begins.

Other commenters noted the existence of the Lead Disclosure Rule (Ref. 30), promulgated under section 1018 of the Residential lead-Based Paint Hazard Reduction Act of 1992, and codified at 40 CFR part 745, subpart F and 24 CFR part 35. These commenters stated that information about the use of spot test kits and the results of those tests, and well as any sort of dust testing information, are information pertaining to lead-based paint or lead-based paint hazards and would therefore have to be disclosed to subsequent purchasers or tenants of the renovated property under the Lead Disclosure Rule. These commenters further opined that a requirement for the renovation firm to provide this information to the owner of the property is necessary to ensure the information is available to be disclosed. With respect to the use of test kits to determine whether components to be affected by a renovation contain lead-based paint, EPA agrees with these commenters in their Lead Disclosure Rule analysis. Therefore, this final rule includes a requirement for the renovation firm to provide, within 30 days, information identifying the manufacturer and model of test kits used, a description of the components tested, including locations, and the results of the test kits to the person who contracted for the renovation. EPA also agrees that dust clearance sampling information is information pertaining to lead-based paint hazards and must be disclosed under the Disclosure Rule. If dust clearance sampling is performed instead of cleaning verification as permitted in 40 CFR 745.85(c), this final rule requires the renovation firm to provide, within 30 days, a copy of the dust clearance report to the person contracting for the renovation.

However, EPA does not believe that information related to cleaning verification is a record or report ''pertaining to lead-based paint or lead-based paint hazards'' for purposes of section 1018. As discussed in more detail in Unit III.E.7. of this preamble, cleaning verification is not the equivalent of clearance. The purpose of cleaning verification is to determine whether the dust that was created by the renovation, whether or not it contains lead, has been adequately removed. Although the disposable cleaning-cloth study, discussed in Unit III.E.7., and the Dust Study show that information is correlated with the hazard standard, the purpose of cleaning verification is not to detect lead-based paint hazards *per se*. In addition, under this final rule, cleaning verification must be completed for every renovation (i.e., it must achieve ''white glove'' or the prescribed combination of wet and dry wipes must have been used), so the results of verification will always show that ''white glove'' or the equivalent has been achieved. As explained below, the cleaning verification is part of a package of work practices that, together, minimize exposure to hazards created by renovation. Also, as explained below, completing the cleaning verification process does not necessarily indicate that the surface does not have lead-based paint hazards unrelated to the renovation. Therefore, EPA will not require the results of cleaning verification activities to be disclosed under the Lead Disclosure Rule.

C. Training and Certification

Under the current Lead-based Paint Activities Regulations at 40 CFR part 745, subpart L, both individuals and firms that perform lead-based paint inspections, lead hazard screens, risk assessments, and abatements must be certified by EPA. EPA proposed a similar, but not identical, regulatory scheme for individuals and firms that perform renovations.

This final rule requires all renovations subject to this rule to be performed by a firm certified to perform renovations. In addition, the rule requires that all persons performing renovation work either be certified renovators or receive on-the-job training from and perform key tasks under the direction of a certified renovator. In order to become a certified renovator, a person must successfully complete an accredited renovator course. EPA renovator certification allows the certified individual to perform renovations in any State, Territory, or Indian Tribal area that does not have a renovation program authorized under 40 CFR part 745, subpart Q. These requirements are discussed in greater detail in the following sections.

EPA is also creating, with this final rule, a dust sampling technician discipline. Although, as discussed in Unit III.E.7. of this preamble, this final rule does not allow dust clearance testing in lieu of post-renovation cleaning verification, except in limited circumstances, EPA still believes that there will be a market for the services of persons with dust sampling technician credentials. EPA recommends that any property owners who choose to have dust clearance testing performed after a renovation use a certified inspector, risk assessor, or dust sampling technician.

Finally, in response to one commenter who suggested that EPA's use of the term ''person'' and the term

''individual'' was confusing, EPA has modified the regulatory text in the sections added or significantly revised by this final rule to use the term ''person'' when referring to both natural persons and judicial persons, such as renovation firms, property management companies, or units of government, and the term ''individual'' when referring only to natural persons.

1. *Individuals*. Under this final rule, EPA is establishing new individual certification disciplines for renovators and dust sampling technicians. All renovation activities covered by this final rule must be performed by certified renovators, or by renovation workers who receive on-the-job training in the work practices from a certified renovator.

a. *Certified renovators and renovation workers—i. Responsibilities of certified renovators.* The certified renovator assigned to a renovation is responsible for ensuring that the renovation is performed in compliance with the work practice requirements set out in 40 CFR 745.85. These requirements pertain to warning signs and work area containment, the restriction or prohibition of certain practices (e.g., high heat gun, torch, power sanding), waste handling, cleaning, and post-renovation cleaning verification. The certified renovator can perform these work practices herself or himself. Alternatively, the certified renovator can direct other workers to perform most of these work practices. However, the post-renovation cleaning verification requirements must be performed by a certified renovator. These requirements cannot be delegated to a worker. If the certified renovator directs the other workers to perform the work practices, the certified renovator must be at the work site during the critical phases of the renovation activity. The critical phases are posting warning signs, containing the work area, and cleaning the work site.

Although the certified renovator is not required to be on-site at all times, while the renovation project is ongoing, a certified renovator must nonetheless regularly direct the work being performed by other workers to ensure that the work practices are being followed. When a certified renovator is not physically present at the work site, the workers must be able to contact the renovator immediately by telephone or other mechanism. A certified renovator must:

- Perform the post-renovation cleaning verification described in 40 CFR 745.85(b).
- Perform or direct workers who perform all of the work practices described in 40 CFR 745.85(a).
- Provide training to workers on the work practices they will be using in performing their assigned tasks.
- Be physically present at the work site when the signs required by 40 CFR 745.85(a)(1) are posted, while the work area containment required by 40 CFR 745.85(a)(2) is being established, and while the work area cleaning required by 40 CFR 745.85(a)(5) is performed.
- Regularly direct the work being performed by other workers to ensure that the work practices are being followed, including maintaining the integrity of the containment barriers and ensuring that dust or debris does not spread beyond the work area.
- Be available, either on-site or by telephone, at all times that renovations are being conducted.
- When requested by the party contracting for renovation services, use an acceptable test kit to determine whether components to be affected by the renovation contain lead-based paint.
- Have with them at the work site copies of their initial course completion certificate and their most recent refresher course completion certificate.
- Prepare the records required to demonstrate that renovations have been performed in accordance with the requirements of this rule.

There are some slight revisions between the 2006 Proposal and this final rule, although none of these changes add to or detract from the renovator's responsibilities. First, the Proposal used both the term ''lead-safe work practices'' and ''work practices'' in the preamble and in the proposed rule text. Although the work practices required in this final rule are lead-safe, for purposes of clarity, the final rule text has been changed to ''work practices.'' The reason for this change was to make text of the rule relating the renovator's responsibilities text consistent with other provisions in the rule, particularly 40 CFR 745.85 (Work Practice Standards). Today's work practices are lead-safe work practices. The work practice standards listed in § 745.85(a) are the same tasks that the other workers will be directed in and trained to do by the certified renovator (except for cleaning verification). In addition, the term ''lead-safe work practices'' has different meanings in different contexts, and this change is to make clear that the work practices required by this final rule are the work practices required in § 745.85(a).

Second, one of the renovator's responsibilities listed in the preamble of the 2006 Proposal was to ''[r]egularly direct the work being performed by uncertified persons to ensure that lead-safe work practices are being followed, the integrity of the containment barriers is maintained, and dust or debris is not spread beyond the work area.'' The word ''regularly'' was inadvertently omitted from the proposed regulatory text. To make the regulatory text consistent with the preamble, the word ''regularly'' has been added to the final regulatory text. In addition, EPA has slightly modified the regulatory text, consistent with the preceding paragraph, to clarify that maintaining the integrity of the containment barriers and ensuring that dust or debris does not spread beyond the work area are among the work practices required by the rule.

Some commenters agreed that it was unnecessary for a certified renovator to be on site at all times and believed that oversight by a certified renovator on a regular basis was sufficient. One commenter believed that the certified renovator should be on site at critical points including site preparations and isolation, end of day and end of project cleaning, and cleaning verification. Many other commenters thought a certified renovator should be on site at all times. Another stated that a certified renovator would not have to be on site at all times if workers received lead safe work practices training. After carefully considering the issue, EPA has concluded that requiring a certified renovator to be on site during critical phases of the work is sufficient to ensure that the work practices required by this final rule are followed. These work practices provide a mechanism to contain dust and debris generated by a job and a clean-up regimen following work that is designed to minimize exposure to lead-based paint hazards created during the renovation activity. Once the containment has been established and until cleanup begins, this final rule requires few, and simple, changes from the way renovation work is currently carried out. Specifically, renovation workers need to avoid using the specific practices prohibited by this final rule; they need to maintain the containment (e.g., avoid ripping or displacing the plastic); and they need to make sure that any waste generated is contained at the end of the day. These are important but relatively simple measures that EPA does not believe require formal classroom training, or the constant supervision of a certified renovator who has had formal training. Once the cleanup begins, the certified renovator will again be required to be present, either performing the cleanup

or directing others. In addition, the certified renovator must perform the cleaning verification. Thus, EPA has concluded that having a renovator on site at all times is unwarranted.

ii. *Renovator training.* To become a certified renovator, a person must successfully complete a renovator course accredited by EPA or by a State, Territorial, or Tribal program authorized by EPA.

Some commenters questioned the need to create a separate discipline for renovators. In their opinion, the existing abatement course is sufficient (with some basic changes) and to create a new program will take resources away from existing efforts in lead hazard control. EPA believes that there are sufficient differences between abatement and renovation activities to warrant different training and work practice requirements. Specific activities of an abatement contractor may be similar to those of a renovator (e.g., sanding, caulking, painting, sawing), but because the project goal is the permanent elimination of hazards, the application and methodology differ. Therefore, a significant portion of an abatement contractor's training is focused on abatement techniques and selection of the appropriate course of action for a variety of hazards. Renovators, on the other hand, do not seek to permanently eliminate lead hazards. Renovators perform maintenance and improvement tasks as directed by the consumer. The goal of EPA's renovator training and certification program is not to update the methodology a renovator uses to accomplish these tasks, with the exception of the practices prohibited or restricted by this final rule, but rather to introduce containment and cleaning methods to minimize exposure to lead-based paint hazards created by the renovation activity.

Several commenters saw the need for universal, standard renovator training. A commenter suggested that training for certified renovators be similar to the current EPA/HUD renovator and remodeler course. One commenter thought that standard training would make it easier when hiring someone to verify that they had completed the appropriate training. Another mentioned that it would encourage state-to-state reciprocity for training programs so that renovators would not need to take multiple courses with the same content. EPA plans to work with HUD to update the model EPA/HUD renovator training course to cover the requirements of this final rule. EPA agrees that reciprocity among authorized State, Territorial, and Tribal programs, and with the Federal program, is preferable. However, as with the abatement program, authorized programs will have the ability to customize requirements and course content based on their particular needs. The Agency encourages jurisdictions seeking authorization to consider reciprocity of training as they develop their individual programs.

Commenters were also concerned about the cost of formal training. Commenters thought that EPA could provide free training to encourage renovator compliance, or that EPA funds for enforcement of the final rule would be better spent on training. EPA agrees that renovator training should be as inexpensive as possible. However, the training course costs will be established by independent training programs based on market forces. The total cost of conducting a training course depends upon the labor cost for the instructor(s), the cost of providing a classroom and other facilities, and other fixed costs. But the cost per trainee also depends on the number of trainees per class. Due to the large number of individuals who will need training, the Agency anticipates that demand will be high, keeping the cost per trainee lower than might otherwise be the case. But also due to that large volume, the Agency does not anticipate that it will be able to provide any significant source of funding to support training.

iii. *Other renovation worker training.* This final rule does not require everyone involved in performing a regulated renovation project to receive training from an accredited training provider. To allow flexibility for firms undertaking these projects, the rule allows firms to use other workers to perform renovation activities as long as they receive on-the-job training (OJT) in work practices from a certified renovator. This training must include instruction in the specific work practices that these workers will be responsible for performing. OJT training occurs while the worker is engaged in productive work and which provides knowledge and skills essential to the full and adequate performance of the job. OJT may also be structured through a planned process of developing competence on units of work by having the certified renovator train the worker at the work setting or a location that closely resembles the work setting. Although there is no specific requirement for ''refresher training,'' OJT must be provided for each worker for each job to the extent necessary to ensure that that worker is adequately trained for the tasks he or she will be performing.

If, under the direction of the certified renovator, the workers will be posting warning signs, establishing containment, or cleaning the work area after the renovation, the certified renovator must provide instruction, either verbally or through demonstration, to the workers in how to perform these tasks. With respect to other activities, including work performed while the certified renovator is not present, the certified renovator must provide instruction, either verbally or through demonstration, in how to perform the work without using work practices prohibited by this rule, how to maintain the integrity of the containment barriers (e.g., taking care not to tear the plastic), and how to avoid spreading dust or debris beyond the work area (e.g., vacuuming clothing and tools with a HEPA vacuum before leaving the work area). In any event, the certified renovator remains responsible for ensuring that this work is done in compliance with the rule's requirements, e.g., that containment sufficient to prevent release of dust or debris from the work site has been established and that clothing and tools were adequately cleaned before leaving the work area.

Workers need not be trained in work practices that do not pertain to the renovations they will be performing. If the certified renovator will be the one posting warning signs, establishing containment, and cleaning the work area after the renovation, it is not necessary for the certified renovator to provide instruction on these tasks to any workers who will be used elsewhere on the project. Similarly, workers hired to perform only exterior projects need not receive training in how to clean an interior work area after a renovation.

EPA chose to allow OJT to alleviate industry concerns raised during the SBREFA panel process regarding high employee turnover rates within the industry and the potential for high training costs if all workers were required to be certified. The Agency concluded that allowing OJT could be done effectively and would provide flexibility for firms undertaking renovation projects. EPA determined that OJT can be effectively delivered by a certified renovator because the requirements themselves are simple and easy to understand. This final rule also requires a certified renovator be assigned and responsible for each project to ensure compliance with required standards.

Some commenters agreed that OJT by a certified renovator is sufficient for training workers. One commenter stated that as long as a specific person is

designated to oversee the job, there is no need for all workers on site to have formal training. The commenter noted the similarity between this approach and OSHA's ''competent person'' standard. EPA agrees that there are some similarities between the approach in this final rule and OSHA's ''competent person'' standard.

However, the majority of commenters had concerns about the use of OJT to train workers. Many argued that OJT is insufficient for providing workers with the necessary skills and thought renovation workers should receive formal LSWP training such as a 1 day course equivalent to that required for certified renovators. Some of these commenters also thought that workers should be certified or licensed.

Some commenters were concerned that the content of OJT is not clearly defined in the rule. One believed EPA should impose a structured OJT program in order to produce consistent, accurate, and comprehensive training outcomes. Others thought more time was needed for OJT, with suggestions ranging from 5 to 6 hours of training to 3 to 4 days. EPA has neither established a structured OJT program nor required a specific length of time for OJT because the OJT required will vary widely from project to project, depending upon how the other workers are used. As discussed above, if the worker will not be establishing containment, there is no need to train the worker in how to establish containment. If the worker in question is an electrician, and he will merely be installing an electrical outlet as part of a larger job, then there may be no need to provide any training to this worker other than instructing him not to disturb the plastic on the floor and making sure that he and his tools are free of dust and debris before leaving the work area.

In addition, as discussed in Unit III.C.1.c.iii. of this preamble, EPA will ''grandfather'' persons with previous EPA/HUD lead-safe work practices training or accredited abatement supervisor or worker training. To become certified renovators, these persons must take a renovator refresher course in order to ensure that they are acquainted with how to use test kits to determine whether lead-based paint is present on a component and how to perform cleaning verification. However, even if they do not take the refresher course and become certified renovators, these individuals have still received significant training in the required work practices such as establishing containment and cleaning the area after the job is finished. They are not likely to need much, if any OJT, depending upon how recent their training was. Similarly, although not recognized for the purpose of ''grandfathering'' by EPA, HUD's Lead Maintenance course would also provide a great deal of information on lead-safe work practices. Someone who had taken the Maintenance course recently would also not be likely to need much, if any, OJT.

Several commenters thought that workers would not receive adequate OJT because the certified renovator was not qualified to train others. They noted that the certified renovators are renovators, not professional trainers, and do not necessarily have the skills necessary for teaching others.

After consideration of these commenters' concerns, EPA has concluded that OJT is sufficient for training some renovation employees. The work practice standards of this final rule are not complex or difficult to institute, and those activities critical to ensuring the lead safe outcome of the project are either conducted by certified renovators or directed by certified renovators. The remainder of the project is often just the renovation itself, and EPA was careful when developing these final work practices to minimize the effect on the way typical renovations are conducted. With the exception of the prohibition of certain unsafe practices, renovation methods are unaffected by this rule. For example, the work practices of this final rule do not affect the method a firm would employ to replace a window. A certified renovator should be able to demonstrate to other firm employees work practices, such as how to work within containment and how to move into and out of containment without spreading lead dust and debris. EPA does not believe a professional trainer is needed to train renovation workers, who will be directed by a certified renovator if they will be performing any of the key tasks associated with the work practices. Most of the people performing renovations today are not trained by professional trainers. They are trained on-the-job by experienced firm employees. For example, persons learn the various techniques for removing and replacing windows from others in the firm who are experienced in these techniques. Renovation workers can learn work practices in the same way from a certified renovator.

Although the work practices in the final regulation are sufficiently straightforward and can be easily demonstrated by the certified renovator, EPA agrees that renovators do not necessarily consider themselves to be trainers. Therefore, accredited renovator training will include a train-the-trainer component to provide instruction on providing OJT. In addition, instructors will be expected to provide training tips to renovators during hands-on instruction. As the instructor is showing the renovator how to do these work practices, he or she can also provide instruction on how to show others how to do these work practices. Accordingly, EPA has concluded that certified renovators will be adequately prepared to provide OJT that is sufficient and appropriate for the purposes of this rule.

Commenters expressed concerns that the rule would not provide appropriate training for the large number of non-English speaking workers in the renovation field. One of these commenters suggested that EPA consider such means as graphic manuals, video presentations, and translators to aid in training non-English speaking workers. Another thought that a hands-on only training process overlooked possible language barriers between the certified renovator and trainee. EPA agrees that OJT can be conducted effectively by demonstration by the certified renovator or through the use of graphic training materials. The Agency plans to develop materials to assist certified renovators in conducting on-the-job training. To the extent possible, these materials will use a graphic format that does not require the use of any particular language. Moreover, renovation firms currently communicate job needs to their employees, and EPA doubts that firms routinely hire people with whom they are unable to communicate. Finally, EPA emphasizes again that the certified renovator and the renovation firm are responsible for ensuring compliance with this final rule. If the certified renovator has doubts about an employee's understanding of or ability to comply with the requirements that are relevant to the work he or she is to undertake, the certified renovator may need to be on site and direct the work more regularly than he otherwise would, or may need to perform certain tasks himself. However, given the relative simplicity of the work practices that are required between establishment of containment and cleanup, EPA does not expect that this will often be necessary.

Some commenters were concerned that OJT does not include a means to assess worker competence such as an examination. Commenters were also concerned about ongoing training needs and suggested requiring worker refresher training on a periodic or annual basis. This final rule requires a certified renovator to direct workers with OJT as necessary to ensure that

work practices are being followed. This will necessarily involve a period of observation after OJT is provided to ensure that the worker has understood and is following the work practices pertinent to his assigned duties. In addition, to some extent, OJT is continuous and certified renovators will likely need to continue to provide training to workers based on the activities that they will be expected to perform on a particular job. A certified renovator would not need to provide OJT to the same worker on consecutive jobs if the worker is performing the same work, but if the nature of the work varies, or if the firm hires a new employee, relevant OJT would have to be provided for the work to be performed. EPA believes that the continuous nature of OJT obviates the need for a refresher training requirement in the rule and will serve as an incentive for firms to have their permanent employees trained as certified renovators. EPA also believes that refresher training *per se* is not practical, given that OJT will be specific to the job in question.

Some commenters wanted some form of verification that a worker had received training, such as a certificate of training or a sticker which could be placed on an ID card. Because each worker is not likely to receive training in all aspects of lead safe work practices, a certificate or other form of training completion that would indicate an employee's OJT is complete is not appropriate for this program. It is important to note that OJT is not as portable as certified renovator training nor is it intended to be. Certified renovators carry a training certificate that they can present to each new employer to prove that they have received training in the required work practices. There is no corresponding document that can be used to verify OJT by a previous employer. Renovation firms will generally need to provide OJT each time a new worker is used. It is also the renovation firm's responsibility to adequately document the elements of OJT provided to each worker on each project.

Because a certified renovator must be assigned to each and every renovation covered by this regulation, EPA anticipates that some renovation contractors and property management companies will find that they achieve maximum efficiency and flexibility by qualifying all of their permanent employees who perform renovations as certified renovators. However, due to the industry's high employee turnover rates and short-term labor needs, the Agency believes that training flexibility in the form of on-the-job training is needed. EPA believes that such flexibility will provide firms the ability to respond to variable labor demands and will not compromise the safety of this final rule. EPA is concerned that a regulation requiring formal, classroom training for every worker performing any renovation activity would be unrealistic for this industry and therefore less effective at ensuring that the renovation work force is trained in work practices than the more balanced training requirements in this final rule.

b. *Dust sampling technicians.* Except as provided in 40 CFR 745.85(c), this final rule does not allow dust clearance sampling to be performed in lieu of post-renovation cleaning verification. However, some property owners may still choose to have dust clearance sampling performed after the renovation. Dust sampling technicians certified in accordance with this final rule will be available to perform dust clearance sampling after renovations and for purposes of HUD's Lead Safe Housing Rule.

Some commenters questioned the need for dust sampling technicians. One stated that there is no benefit to creating a third inspection-type discipline that has such limited training requirements. Two commenters thought that only EPA- or State-certified risk assessors should be allowed to collect dust wipe clearance samples and two commenters thought that dust sampling technicians should be required to work under a certified risk assessor or inspector.

In 1999, in order to make accurate dust testing for lead more available and affordable, Congress provided EPA with funding for the development of a 1 day dust sampling technician course. Congress also encouraged the Agency to promote the recognition of this discipline. EPA completed the development of the course, entitled *Lead Sampling Technician Training Course,'' in July of 2000*. This course provides instruction on how to conduct a visual assessment for deteriorated paint, collect samples for lead dust, and interpret sample results. The training curriculum provides clearance sampling instruction that is equivalent to that presented in inspector and risk assessor courses, in terms of time and quality with respect to dust sampling. Therefore, EPA can recommend that property owners and others who wish to have optional dust sampling performed use the services of a certified inspector, risk assessor, or dust sampling technician.

c. *Certification of individuals*—i. *Initial certification.* Section 745.90 of this final rule addresses renovator and dust sampling technician certification. To become a certified renovator, a person must successfully complete a renovator course accredited by EPA or by a State, Territorial, or Tribal program authorized by EPA under 40 CFR part 745, subpart Q. The renovator course accreditation requirements are based on the joint EPA-HUD model curriculum entitled Lead Safety for Remodeling, Repair, & Painting. EPA is not requiring additional education or work experience of persons wishing to become certified renovators. EPA renovator certification will allow the certified individual to perform renovations covered by this section in any State or Indian Tribal area that does not have a renovation program authorized under 40 CFR part 745, subpart Q. To become a certified dust sampling technician, a person must successfully complete a dust sampling technician training course that has been accredited either by EPA or by a State, Territorial, or Tribal program authorized by EPA under 40 CFR part 745, subpart Q. EPA is not requiring additional education or work experience of persons wishing to become certified dust sampling technicians.

The final rule also establishes, in 40 CFR 745.91, procedures for suspending, revoking, or modifying an individual's or firm's certification. These procedures are very similar to the current procedures in place at 40 CFR 745.226(i) for suspending, revoking, or modifying the certification of an individual who is certified to perform lead-based paint activities. In addition, under the final rule, renovator certification can be suspended, revoked, or modified if the certified renovator does not conduct projects to which he or she is assigned in accordance with the work practice requirements of this final rule. Finally, in order to ensure that the effect of a suspension, revocation, or modification determination is clear to the certified individual or firm, EPA has added language to this section ensuring that the commencement date and duration of a suspension, revocation, or modification is identified in the Presiding Officer's decision and order. EPA has also added language to this section to clarify what steps an individual or firm must take after such an action in order to exercise the privileges of certification again. An individual whose certification has been suspended must take a refresher training course in the appropriate discipline in order to make his or her certification current, while an individual whose certification has been revoked must take another initial training course in order to be re-certified. A firm whose

certification has been suspended need not do anything after the suspension ends to become current again, as long as the suspension ends before the firm's certification expires. If the firm's certificate expires during the suspension, the firm must apply for re-certification after the suspension ends. If a firm's certification is revoked, the firm must apply for certification after the revocation period ends in order to be certified.

Some commenters questioned the need for a certification requirement, emphasizing that it is the training that is important rather than the certification. One commenter thought that, since firms will have to be certified, there was no added value in certifying renovators. Others supported certification and some thought renovators should have to apply to EPA to receive their certification in the same way that abatement workers do, stating that no regulatory program can work unless the regulating agency can reliably identify and contact the regulated individuals. One commenter thought that there should also be a work experience requirement for certified renovators.

EPA believes that renovators must be certified so that the Agency has a mechanism to verify an individual has received the appropriate training. In addition, if a contractor does not comply with the regulatory standards then withdrawal of the renovator's certification is a regulatory remedy available to the Agency. The final rule includes a certification process that is more streamlined than the individual certification process of the Agency's abatement regulations. In the abatement program, an individual must complete training, then submit an application and fee to the Agency and, depending on the discipline, take a third party exam in order to be certified. In contrast, an individual will be considered a certified renovator upon successful completion of an accredited training program, and the accredited training program is required to submit identifying and contact information to EPA regarding the individuals that they have trained. EPA does not believe that work experience requirements are necessary because previous experience in the construction or renovation industry would do little to help an individual understand or perform the work practices, which are not a standard practice in the industry. Consequently, there is no relevant work experience for EPA to require. In addition, the work practices required by this final rule are sufficiently straightforward that EPA does not believe it is necessary to require work experience in addition to certified renovator training.

Because EPA is not requiring any additional education or work experience requirements, or a third-party examination similar to that taken by inspector, risk assessor, or supervisor candidates, EPA believes that there is little value in requiring candidates to apply to EPA to receive their renovator or dust sampling technician certification. Currently, the only certified discipline without prerequisites in education or experience, or a third-party examination, is the abatement worker. When candidates for worker certification apply to EPA, EPA verifies that the copy of the training course certificate submitted with the application is from an accredited training provider. Without requiring renovators or dust sampling technicians to apply to EPA for certification EPA will still receive course completion information from course providers. With this information, EPA will have a complete list of certified renovators and will be able to check to see if a particular course completion certificate holder appeared on a course completion list submitted by the training course provider identified on the certificate. When EPA inspects a renovation job for compliance with these regulations, EPA will have the ability to verify, to the same extent, the validity of a course completion certificate held by a renovator at that job. Therefore, under this final rule, EPA is requiring that a course completion certificate from an accredited training provider serve as a renovator's or dust sampling technician's certification. To facilitate compliance monitoring, the rule requires a certified renovator or dust sampling technician to have a copy of the course completion certificate at the job site.

Several commenters saw the need for a way to determine that a certified renovator was current with applicable training requirements. Suggestions for proof of training included issuing photo IDs, issuing a hard card or certificate, and establishing a national database of workers with current training. One commenter thought that it should be the responsibility of the training provider to certify that renovators have successfully completed the training requirements and to then supply EPA with all of the information. EPA agrees that there must be a way to determine if a renovator is certified and is current with training requirements. The Agency agrees that a database of renovator information would be important, and will include identifying and training information in the Agency's Federal Lead Paint Program (FLPP) database. However, this database will only contain information about certified renovators working in federally administered jurisdictions. In addition, the Agency will require training programs to include a photograph of the individual who completes renovator or dust sampling technician training on the training certificate and to submit that photo to the Agency to be included in the database record. This will enable inspectors to determine whether a particular individual has received training from an accredited training provider.

Some of the commenters had concerns specific to small businesses. Two commenters stressed the need for outreach programs to inform small businesses of new compliance requirements. One commenter stated that smaller firms should not be exempt from training and certification requirements; another thought that small businesses would continue to operate without appropriate training and certification unless there was some type of enforcement. EPA understands that the task of communicating this final rule requirements to the renovation community will be challenging. Therefore, EPA is developing a comprehensive outreach and communications program to support this final rule. This will include outreach to contractors as well as consumers. In addition the Agency plans to roll out a compliance assistance effort to complement this undertaking.

One commenter suggested that authorized State, Territorial, or Tribal programs include the requirement for training as part of a contractor licensing function, thereby eliminating the need to create a special (new) lead renovator's certification or license. EPA agrees that where a State, Territory, or Tribe has a pre-existing relationship with renovation contactors, such as a renovators' licensing program, the simplest and most cost-effective approach may be to incorporate a requirement for lead safe work practice training into that pre-existing program.

ii. *Recertification.* Under this final rule EPA is requiring that renovators and dust sampling technicians who wish to remain certified take refresher training every 5 years. In addition, EPA is requiring that the refresher training course be half the length of the initial course. This is consistent with current practice for certified individuals performing lead-based paint activities. If an individual does not take a refresher course within 5 years of the date he or she completed the initial course or the

previous refresher course, that individual's certification will expire on that date and that individual may no longer serve as a certified renovator or dust sampling technician. There is no grace period. To become certified again, the individual must take another initial training course. In addition, under this final rule a certified renovator may choose to take the initial renovator course instead of a refresher course to allow maximum flexibility, particularly if for some reason the person was unable to attend a refresher course.

Some commenters asserted that the refresher requirement was of no benefit or imposed an unnecessary cost. These commenters reasoned that lead-safe work practices were not likely to change significantly over time. One noted that HUD's experience with lead-safe work practices training since 1999 has not revealed a need for refresher training in their program. Commenters who supported refresher training differed on the frequency of the training and the length of the refresher course. Some agreed that refresher training should be required every 3 years, others thought it should be required biennially, annually, or every 3 to 6 months. One commenter agreed with the proposed 4–hour course, two commenters thought a 4–hour course was too short, and one thought that instead of completing a refresher, certified renovators should be required to retake the initial training course every 2 to 3 years. One commenter stated that a certified renovator should have the opportunity to take a third party test and allow the renovator to ''test out'' of having to complete the refresher course.

After considering the range of concerns raised by the commenters, EPA has concluded that refresher training is important for renovators and dust sampling technicians and for the Agency. During the refresher course, renovators and dust sampling technicians are given the opportunity to discuss any point of emphasis and to be updated on changes in the regulations or technical issues. For example, refresher training could be used to update renovators on availability of new techniques and products, such as test kits. Refresher training provides the Agency with a mechanism to pass along critical information to certified individuals and to keep track of the workforce. However, EPA has determined that these purposes can be adequately served by 4–hour refresher training every 5 years, instead of every 3 years. This provides a reasonable period between trainings that limits training costs while providing an opportunity to update renovators and dust sampling technicians regarding regulations and technical issues. EPA believes that most renovators will not also be certified abatement professionals, so the difference in the length of time between required refresher courses should not confuse individuals about their responsibilities under the two programs.

iii. *Grandfathering.* Under this final rule, individuals who successfully completed an accredited abatement worker or supervisor course, and individuals who successfully completed either HUD, EPA, or the joint EPA/HUD model renovation training courses may take an accredited refresher renovation training course in lieu of the initial renovation training to become a certified renovator. In addition, individuals who have successfully completed an accredited lead-based paint inspector or risk assessor course, but are not currently certified in the discipline, may take an accredited refresher dust sampling technician course in lieu of the initial training to become a certified dust sampling technician. Inspectors and risk assessors who are certified by EPA or an authorized program are qualified to perform dust sampling as part of lead hazard screens, risk assessments, or abatements. Therefore, it would be unnecessary for a certified inspector or risk assessor to seek certification as a dust sampling technician.

A number of commenters thought that certification should be given to those who have already attended appropriate training. Some of these commenters thought that individuals who had received EPA, HUD, or State-approved Lead Safe Work Practices (LSWP) training should be grandfathered. One commenter thought individuals that had completed OSHA's 40–hour Hazardous Waste Operations and Emergency Response course should also be grandfathered and another wanted individuals that had taken the National Apartment Association's lead worker training course to be grandfathered. Four commenters were in favor of grandfathering dust sampling technicians that have previously completed a dust sampling course.

Most of the commenters who expressed an opinion agreed with grandfathering previously trained individuals but suggested that there be restrictions. Some of these commenters thought that in order to receive credit the training needed to have been completed in the last 2 to 3 years while others thought that certification should be given only if a refresher or ''gap'' course were completed. One commenter thought that the quality of the previous course should be taken into account and another commenter thought that a one-size fits all rule would not be appropriate and that factors including previous course requirements, the facility that had provided the training, and time elapsed since initial training should all be considered in establishing requirements for streamlined certification. One commenter opposed grandfathering, noting that existing courses do not cover lead test kits, cleaning verification, or recordkeeping in accordance with the proposed rule.

The final rule allows individuals who have successfully completed model renovation courses developed by HUD or EPA and individuals who have taken an abatement worker or supervisor course accredited by EPA or an authorized State or Tribal program to become certified renovators by taking EPA-accredited renovator refresher training. Individuals who have successfully completed a risk assessor or inspector course accredited by EPA or an authorized State or Tribal program can become certified dust sampling technicians by taking EPA-accredited dust sampling technician refresher training. EPA is recognizing only EPA and HUD model renovation training and lead-based paint activities training courses accredited by EPA or an authorized State, Territorial, or Tribal program because EPA has not sufficiently evaluated the content of other courses. In addition, it would be unwieldy to develop the content of multiple refresher courses based on the content of different initial training courses. While the recognized training provides meaningful information relevant to these disciplines, it does not include some specific requirements of this final regulation. Therefore, EPA is requiring these individuals to receive refresher training to ensure they are familiar with the requirements of this final rule. Training providers are required to notify EPA of the individuals who become certified by successfully completing the refresher training. This information will support EPA's compliance assistance programs.

2. *Renovation firms*—a. *Responsibilities of renovation firms.* Under this final rule, firms must ensure that all persons performing renovation activities on behalf of the firm are either certified renovators or have been trained and are directed by a certified renovator in accordance with 40 CFR 745.90. The firm is responsible for assigning a certified renovator to each renovation performed by the firm and ensuring that the certified renovator discharges all of the responsibilities identified in this final rule. The firm must ensure that the

information distribution requirements in 40 CFR 745.84 are met. As mentioned above, the certified renovator is responsible for ensuring compliance with 40 CFR 745.85 at all renovations to which he or she is assigned. The firm is also responsible for ensuring that all renovations performed by the firm are performed using certified renovators and in accordance with the work practice standards in proposed 40 CFR 745.85.

Where multiple contractors are involved in a renovation, any contractor who disturbs, or whose employees disturb, paint in excess of the minor maintenance exception is responsible for compliance with all of the requirements of this final rule. In this situation, renovation firms may find it advantageous to decide among themselves which firm will provide pre-renovation education to the owners and occupants, which firm will establish containment, and which firm will perform the post-renovation cleaning and cleaning verification. For example, a general contractor may be hired to conduct a multi-faceted project involving the large-scale disturbance of paint, which the general contractor then divides up among several subcontractors. In this situation, having the general contractor discharge the obligations of the Pre-Renovation Education Rule is likely to be the most efficient approach, since this only needs to be done once. With regard to containment, the general contractor may decide that it is most cost-effective to establish one large work area for the entire project. In this case, from the time that containment is established until post-renovation cleaning verification occurs, all general contractor and subcontractor personnel performing renovation tasks within the work area must be certified renovators or trained and directed by certified renovators in accordance with this rule. In addition, these personnel are responsible for ensuring the integrity of the containment barriers. The cleaning and post-renovation cleaning verification could be performed by any properly qualified individuals, without regard to whether they are employees of the general contractor or a subcontractor. However, all contractors involved in the disturbance of lead-based paint, or who perform work within the work area established for the containment of lead dust and debris, are responsible for compliance with this final rule, regardless of any agreements the contractors may have made among themselves.

b. *Certification of firms*—i. *Initial certification*. This final rule requires firms that perform renovations, as defined by this rule, to be certified by EPA. EPA is adding a definition of ''firm'' to § 745.83 to make it clear that this term includes persons in business for themselves, i.e., sole proprietorships, as well as Federal, State, Tribal, and local governmental agencies, and nonprofit organizations. Firms covered by this final rule include firms that typically perform renovations, such as building contractors or home improvement contractors, as well as property management companies or owners of multi-family housing performing property maintenance activities that include renovations within the scope of this final rule.

This final rule provides information about the certification and re-certification process, establishes procedures for amending and transferring certifications, and identifies clear deadlines. A firm wishing to become certified to perform renovations must submit a complete ''Application for Firms,'' signed by an authorized agent of the firm, along with the correct certification fee. EPA intends to establish firm certification fees in a separate rulemaking. EPA will approve a firm's initial application within 90 days of receipt if it is complete, including the proper amount of fees, and if EPA determines that the environmental compliance history of the firm, its principals, or its key employees does not show an unwillingness or inability to comply with applicable environmental statutes or regulations. EPA will generally consider the following to be an indication that the applicant is unwilling or unable to comply with environmental statutes or regulations if, during the past 3 years, the applicant has:

- A criminal conviction under a Federal environmental statute;
- An administrative or civil judgment against the applicant for a willful violation of a Federal environmental statutory or regulatory requirement; or
- More than one administrative or civil judgment for a violation of a Federal environmental statute. Violations that involve only recordkeeping requirements will not be considered.

If the application is approved, EPA will establish the firm's certification expiration date at 5 years from the date of EPA's approval. EPA certification will allow the firm to perform renovations covered by this section in any State or Indian Tribal area that does not have a renovation program authorized under 40 CFR part 745, subpart Q. If the application is incomplete, EPA will notify the firm within 90 days of receipt that its application was incomplete, and ask the firm to supplement its application within 30 days. If the firm does not supplement its application within that period of time, or if EPA's check into the compliance history of the firm revealed an unwillingness or inability to comply with environmental statutes or regulations, EPA will not approve the application and will provide the applicant with the reasons for not approving the application. EPA will not refund the application fees. A firm could reapply for certification at any time by filing a new, complete application that included the correct amount of fees.

This final rule provides firms with more time to amend their certification whenever a change occurs. A firm must amend its certification within 90 days whenever a change occurs to information included in the firm's most recent application. If the firm failed to amend its certification within 90 days of the date the change occurred, the firm would not be authorized to perform renovations until its certification was amended. Examples of amendments include a change in the firm's name without transfer of ownership, or a change of address or other contact information. To amend its certification, a firm must submit an application, noting on the form that it was submitted as an amendment. The firm must complete the sections of the application pertaining to the new information, and sign and date the form. The amendment must include the correct amount of fees. Amending a certification will not affect the validity of the existing certification or extend the certification expiration date. EPA will issue the firm a new certificate if necessary to reflect information included in the amendment. Firm certifications are not transferable--if the firm is sold, the new owner must submit a new initial application for certification in accordance with 40 CFR 745.89(a). The final rule also includes procedures for suspending, revoking, or modifying a firm's certification. These procedures are very similar to the current procedures in place for suspending, revoking, or modifying the certification of a firm that is certified to perform lead-based paint activities.

Some commenters questioned the need for firm certification, while others, including industry representatives, supported it. The Agency believes that firm certification is necessary for several reasons. First, certification is an important tool for the Agency's

enforcement program. To become certified, a firm acknowledges their responsibility to use appropriately trained and certified employees and follow the work practice standards set forth in the final rule. This is especially important under this final rule, since the certified renovator is not required to perform or be present during all of the renovation activities. Under these circumstances, it is important for the firm to acknowledge its legal responsibility for compliance with all of the final rule requirements, since the firm both hires and exercises supervisory control over all of its employees. Should the firm be found to violate any requirements, its certification can be revoked, giving the firm a strong incentive to ensure compliance by all employees.

ii. *Recertification*. Under 40 CFR 745.89(b), a certified firm maintains its certification by submitting a complete and timely ''Application for Firms,'' noting that it is an application for re-certification, and paying the required re-certification fee. With regard to the timeliness of the application for re-certification, if a complete application, including the proper fee, is postmarked 90 days or more before the date the firm's current certification expires, the application will be considered timely and sufficient, and the firm's existing certification will remain in effect until its expiration date or until EPA has made a final decision to approve there-certification application, or not, whichever occurs later. If the firm submits a complete re-certification application fewer than 90 days before the date the firm's current certification expired, EPA might be able to process the application and re-certify the applicant before the expiration date, but this would not be guaranteed. If EPA does not approve the re-certification application before the existing application expired, the firm's certification expires and the firm is not able to conduct renovations until EPA approves its re-certification application. In any case, the firm's new certification expiration date will be 5 years from the date the existing certification expired.

If the firm submits an incomplete application for re-certification and EPA does not receive all of the required information and fees before the date the firm's current certification expires, or if the firm does not submit its application until after its certification expired, EPA will not approve the firm's re-certification application. The firm cannot cure any deficiencies in its application package by postmarking missing information or fees by its certification expiration date. All required information and fees must be in EPA's possession as of the expiration date for EPA to approve the application. If EPA does not approve the application, the Agency will provide the applicant with the reasons for not approving the re-certification application. Any fees submitted by the applicant will not be refunded, but the firm can submit a new application for certification, along with the correct amount of fees, at any time.

As with initial applications, this final rule includes a description of the actions EPA may take in response to an application for re-certification and the reasons why EPA will take a particular action. This section is identical to the process for initial applications, except that EPA will not require an incomplete application to be supplemented within 30 days of the date EPA requests additional information or fees. In the re-certification context, the firm must make its application complete by the date that its current certification expires.

Several commenters thought that firms should not be required to be re-certified because the firm's certification is not based on knowledge or technology, but rather on a promise to abide by the rules. The Agency believes that firm re-certification is an important element of the final regulation. Firm re-certification provides a mechanism for EPA to keep its records current with respect to firms actively engaged in renovations. Re-certification also provides a means for EPA to ensure that it has updated firm contact information. Re-certification also prompts the firm to positively reaffirm their commitment to adhere to the requirements set forth in this regulation. Finally, re-certification allows EPA an opportunity to review a firm's compliance history before it obtains re-certification. However, EPA has determined that these purposes can be adequately served by re-certifying renovation firms every 5 years instead of every 3 years as proposed.

D. Training Provider Accreditation and Recordkeeping

EPA is amending the general accreditation requirements of 40 CFR 745.225 to apply to training programs that offer renovator or dust sampling technician courses for certification purposes. The regulations describe training program qualifications, quality control measures, recordkeeping and reporting requirements, as well as suspension, revocation, and modification procedures. Amendments to § 745.225 add specific requirements for the renovator and dust sampling technician disciplines. Also included are minimum training curriculum, training hour, and hands-on requirements for courses leading to certification as a renovator or a dust sampling technician. As discussed in the previous Unit of this preamble, to assist EPA compliance inspectors in determining whether a renovator at a renovation work site successfully completed an accredited renovator training course, this final rule also requires providers of renovator training to take a digital photograph of each individual who successfully completes a renovator training course, include that photograph on the individual's course completion certificate, and provide that photograph to EPA along with the training course provider's post-training notification required by 40 CFR 745.225(c)(14).

Training course providers that obtained accreditation to offer renovator or dust sampling technician training would have to comply with the existing recordkeeping requirements for lead-based paint activities training course providers. These existing recordkeeping provisions require providers to maintain records of course materials, course test blueprints, information on how hands-on training is delivered, and the results of the students' skills assessments and course tests. EPA received no comments on this aspect of the proposed recordkeeping requirements. These requirements are currently working well for lead-based paint activities training providers and EPA believes they will work equally well for renovation training providers. Therefore, EPA is finalizing this requirement as proposed. Training course providers who receive accreditation to provide renovator or dust sampling technician courses must comply with the recordkeeping requirements of 40 CFR 745.225(i).

1. *Renovator training*. The minimum curriculum requirements for an initial renovator course are described in 40 CFR 745.225(d)(6). The topics include the roles and responsibilities of a renovator; background information on lead and its health effects; background on applicable Federal, State, and local regulations and guidance; use of acceptable test kits to test paint to determine whether it is lead-based paint; methods to minimize the creation of lead-based paint hazards during renovations; containment and clean-up methods; ways to verify that a renovation project has been properly completed, including cleaning verification; and waste handling and disposal. Hands-on activities relating to renovation methods, containment and clean-up, cleaning verification, and waste handling would be required in all courses. Section 745.225(c)(6)(vi)

establishes the minimum length for an initial renovator course at 8 training hours, with 2 hours being devoted to hands-on activities.

Commenters raised concerns and had suggestions regarding how certified renovator training should be conducted in three broad areas: Course length; course content and format; and training of non-English speaking renovators.

a. *Course length.* Several commenters raised concerns about the length of the certified renovator training course. Some agreed with the training length as defined in the rule, others stated it was too short or too long, and one said that the length of the training should not be defined in the rule. In establishing the minimum requirements for the renovator course, the Agency considered the many types of activities that would likely be performed during renovation, remodeling, and painting activities and tried to balance that with the need for a training course that would address the necessary skills without being overly burdensome on the part of the trainee. The suggested course schedule for the EPA/HUD lead-safe work practices curriculum ''Lead Safety for Remodeling, Repair, & Painting'' calls for an 8–hour training day, including lunch, two breaks, and an hour-long course test. The course is designed in a modular format, so that it can be delivered in 1 day or over two or more days, at the discretion of the training provider. Based on a review of the material and the suggested schedule, EPA believes that ''Lead Safety for Remodeling, Repair, and Painting'' can be modified to include material on the use of test kits and performing cleaning verification and still fit within eight training hours. However, any attempt to cover all of the required elements in a shorter period of time would likely result in a significant reduction in the level of detail with which the elements are presented. A minimum requirement for eight training hours represents a reasonable minimum requirement for the renovator course and gives training course providers an indication of the amount of time that EPA has determined through experience with the EPA/HUD curriculum that it takes to adequately cover each required training element.

b. *Course content and format.* Most commenters agree that the certified renovator course should include a hands-on training portion and several of these agree that the hands-on portion should not be any shorter than two hours as proposed. Other commenters suggested that the hands-on portion of the training should be allowed to be conducted as a demonstration via a remote delivery system (DVD or Internet). EPA agrees that development of a procedure to address the hands-on component of the renovator course via remote delivery systems would be beneficial. This final rule does not preclude training providers from developing alternative methods for the delivery and evaluation of training for submission for approval to EPA.

Several commenters had suggestions as to the certified renovator training content. Two recommended that the renovator course include training on recordkeeping requirements. EPA agrees with these commenters, and has added the element of recordkeeping to the required training course elements for renovators. Because EPA has modified the recordkeeping requirements, as discussed below, to require the certified renovator to prepare the records associated with renovations to which he or she is assigned, the renovation training course will include a recordkeeping component. Three commenters suggested that, if the certified renovator is responsible for providing OJT to other renovation workers, the renovator training course should include a train-the-trainer component. EPA agrees with these commenters and has added a train-the-trainer element to the required elements for the renovator training course. In addition, EPA will develop a train-the-trainer component for its model renovator training course. Other commenters suggested that the required training elements include OSHA health and personal safety requirements. The Agency agrees that these are relevant topics and considers an overview of the OSHA requirements to be part of the required element of background on applicable Federal, State, and local regulations and requirements. To ensure that this is clear, EPA has modified this provision to state that the background information must include EPA, HUD, OSHA, and other Federal, State, and local regulations and guidance. Consistent with its approach in other courses related to lead-based paint activities, the Agency believes that identifying potential OSHA requirements, rather than requiring in-depth curriculum components, is the best way to make trainees aware of those requirements and yet avoid redundancies between EPA- and OSHA-required courses.

c. *Training of non-English speaking renovators.* Renovator and dust sampling technician courses, both initial and refresher, can be taught in any language, but accreditation would be required for each specific language the provider wished to present the course in. All course materials and instruction for the course would have to be in the language of the course. The modification to § 745.225(b)(1)(ii) clarifies that all lead-based paint courses taught in different languages are considered different courses, and accreditation must be obtained for each. To facilitate accreditation of courses in languages other than English, EPA is requiring that the training provider include in its application both the English version as well as the non-English version of all training materials, in addition to a signed statement from a qualified, independent translator that the translator has compared the non-English language version of the course materials to the English-language version and that the translation is accurate. This requirement applies to any course for which accreditation is sought, including lead-based paint activities courses. Finally, to assist EPA in monitoring compliance with these requirements, EPA is requiring that course completion certificates include the language in which the course was taught.

Several commenters agreed that the needs of non-English speaking workers should be considered. Commenters suggested that EPA translate its model course into other languages and/or facilitate free access to such translations. EPA agrees that it is important to have renovator training available in languages other than English. EPA anticipates translating its revised model renovator course into Spanish. EPA will also consider translating the course into other languages. However, EPA is not able to make available proprietary material developed by training course providers that is then translated by those providers into other languages.

2. *Dust sampling technician training.* The minimum curriculum requirements for an initial dust sampling technician course are described in 40 CFR 745.225(d)(7). The topics include the roles and responsibilities of a dust sampling technician; background information on lead and its adverse health effects; background information on Federal, State, and local regulations and guidance that pertains to lead-based paint and renovation activities; dust sampling methodologies; clearance standards and testing; and report preparation and recordkeeping requirements. Section 745.225(c)(6)(vii) establishes the minimum length for an initial dust sampling technician course at 8 training hours, with 2 hours being devoted to hands-on activities. EPA received relatively few comments specifically on the content of dust

sampling technician training; most had to do with the length of the training course. EPA has developed a model dust sampling technician course (Ref. 33). This course has been designed to be delivered in one 8–hour training day, including lunch, breaks, and a course test. As with the EPA/HUD ''Lead Safety for Remodeling, Repair, & Painting'' curriculum, EPA believes that this is a reasonable minimum requirement for the dust sampling technician course and it gives training course providers an indication of the amount of time that EPA has determined it takes to adequately cover each required training element.

E. Work Practices

This final rule requires that all renovations subject to this rule be conducted in accordance with a defined set of work practice standards. Again, this final rule is a revision of the existing TSCA section 402(a) Lead-based Paint Activities Regulations to extend training, certification, and work practice requirements to certain renovation and remodeling projects in target housing and child-occupied facilities. In so doing, EPA did not merely modify the scope of the current abatement requirements to cover renovation and remodeling activities. Rather, EPA has carefully considered the elements of the existing abatement regulations and is revising those regulations in a manner that reflects the differences between abatement and renovation activities.

Work practices for abatement are part of larger range of activities that are intended to identify and eliminate lead-based paint hazards. When abatements are conducted, residents typically are removed from the home until after the abatement activities are completed, which is demonstrated through the use of clearance testing. This may require the removal of carpeting, refinishing, sealing, or replacement of floors to achieve clearance. Accordingly, clearance testing is part of a broader set of activities that comprise abatement, with the purpose of permanently eliminating existing lead-based paint hazards.

Renovation, repair, and painting activities typically are conducted while the residents are present in the dwelling and are not activities intended to eliminate lead-based paint hazards. Work practices for renovation, repair, and painting are designed to minimize exposure to lead-based paint hazards created by the renovation both during the renovation, while residents are likely to be present in the dwelling, and after the renovation. The work practices are not intended to address pre-existing hazards.

1. *In general*. This final rule incorporates work practice standards generally derived from the HUD Guidelines, EPA's draft technical specifications for renovations, and the model training curriculum entitled *Lead Safety for Remodeling, Repair, & Painting* (Refs. 18, 34, and 35). For more information on the development of these documents, please consult Unit III.C. of the preamble to the 2006 Proposal. To reduce exposure to lead-based paint hazards created by renovation activities, the work practices standards in this regulation provide basic requirements for occupant protection, site preparation, and clean-up.

Commenters generally felt that work practices are important and should be clear and correctly followed. One commenter stated that the rule has ''tremendous potential for making a difference,'' especially in establishing and ''reinforcing the industry norm.'' One commenter noted that EPA should ''set simple and flexible work practices.'' Another commenter asked for less specificity. EPA believes that this final rule provides certified renovators an appropriate blend of flexibility and specificity. EPA believes that, due to the highly variable nature of renovation activities, flexibility is needed for certain tasks, such as establishing containment, and that other tasks, such as specialized cleaning, require a greater degree of specificity.

2. *Occupant protection*. This final rule requires the firm to post signs clearly defining the work area and warning occupants and other persons not involved in renovation activities to remain outside of the work area. In addition, it requires that the certified renovator be physically present at the work site when the required signs are posted. These signs must be posted before beginning the renovation and must remain in place until the renovation has been completed and cleaning verification has been completed. The signs must be, to the extent practicable, provided in the occupants' primary language. If warning signs have been posted in accordance with HUD's Lead Safe Housing Rule (24 CFR 35.1345(b)(2)) or OSHA's Lead in Construction Standard (29 CFR 1926.62(m)), additional signs are not required.

Three commenters stated that the required signs for posting at a work site should be in the language of the occupant. One commenter stated that such a requirement would be consistent with HUD's Lead Safe Housing Rule requirements. EPA agrees that having signs in the language of the occupant is preferable. However, the Agency is concerned that renovators will not have the ability to provide signs in every language, and that it may be the case that occupants, especially in multi-family dwellings, will speak a variety of languages. In the HUD Lead Safe Housing Rule, HUD addressed this issue by requiring that signs, to the extent practicable, be provided in the occupants' primary language. Therefore, consistent with HUD's Lead Safe Housing Rule, this final rule requires warning signs, to the extent practicable, to be provided in the occupants' primary language.

3. *Containment*. This final rule requires that the firm isolate the work area so that dust or debris does not leave the work area while the renovation is being performed. In addition, EPA has clarified that the firm must maintain the integrity of the containment by ensuring that any plastic or other impermeable materials are not torn or displaced, and taking any other steps necessary to ensure that dust or debris does not leave the work area while the renovation is being performed.

In addition, EPA has made conforming changes to the performance standard that renovators and renovation firms are being held to in this final rule. EPA was concerned that the rule text and preamble were confusing because there were references to ''visible'' dust and debris or ''identifiable'' dust and debris and ''all'' dust and debris. For example, in the 2006 Proposal ''work area'' was defined as the area established by the certified renovator to ''contain all the dust and debris generated by a renovation.'' In the renovator responsibilities (as proposed at 40 CFR 745.90(b)(4)), the renovator was responsible for ensuring ''that dust and debris is not spread beyond the work area.'' In describing the containment to be established, the rule text referred to ''visible'' dust and debris and in the section on waste from renovations (as proposed at 40 CFR 745.85(a)(3)) the rule text referred to ''identifiable'' dust. It was not EPA's intention to create subjectivity as to whether dust and debris were being dispersed. By conforming its terminology EPA is clarifying that certified renovators and renovation firms must ensure that the dust and debris (as opposed to ''visible'' or ''indentifiable'' dust and debris) generated by the renovation is contained. Should an EPA inspector observe dust or debris escaping from the containment, the certified renovator and

the renovation firm would be in violation of this final rule.

This final rule also requires that the certified renovator be physically present at the work site when the required containment is established. This means the certified renovator must determine for each regulated project the size and type of containment necessary to prevent dust and debris from leaving the established work area. This determination will be based on the certified renovator's evaluation of the extent and nature of the activity and the specific work practices that will be used.

Containment refers to methods of preventing leaded dust from contaminating objects in the work area and from migrating beyond the work area. It includes, among other possible measures, the use of disposable plastic drop cloths to cover floors and objects in the work area, and sealing of openings with plastic sheeting where necessary to prevent dust and debris from leaving the work area. When planning a renovation project, it is the certified renovator's responsibility to determine the type of work site preparation necessary to prevent dust and debris from leaving the work area.

Renovation projects generate varying amounts of leaded dust, paint chips, and other lead-contaminated materials depending on the type of work, area affected, and work methods used. Because of this variability, the size of the area that must be isolated and the containment methods used will vary from project to project. Large renovation projects could involve one or more rooms and potentially encompass an entire home or building, while small projects may require only a relatively small amount of containment. The necessary work area preparations will depend on the size of the surface(s) being disturbed, the method used in disturbing the surface, and the building layout. For example, repairing a small area of damaged drywall would most likely require the containment of a smaller work area and less preparation than demolition work, which would most likely require a containment of a larger work area and more extensive preparation in order to prevent the migration of dust and debris from the work area. The Environmental Field Sampling Study, which found that the following activities created dust-lead hazards at a distance of 6 feet from where the work was being performed:

- Paint removal by abrasive sanding.
- Window replacement.
- HVAC duct work.
- Demolition of interior plaster walls.
- Drilling into wood.
- Sawing into wood.
- Sawing into plaster.

Based on these data, EPA believes that at least 6 feet of containment is necessary to contain dust generated by most renovation projects.

Under this final rule, at a minimum, interior work area preparations must include removing all objects in the work area or covering them with plastic sheeting or other impermeable material. This includes fixed objects, such as cabinets and countertops, and objects that may be difficult to move, such as appliances. Interior preparations must also include closing all forced air HVAC ducts in the work area and covering them with plastic sheeting or other impermeable material; closing all windows in the work area; closing and sealing all doors in the work area; and covering the floor surface in the work area, including installed carpet, with taped-down plastic sheeting or other impermeable material in the work area 6 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater.

To ensure that dust and debris do not leave the work area, it may be necessary to close forced air HVAC ducts or windows near the work area. Doors within the work area that will be used while the job is being performed must be covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through, while confining dust and debris to the work area. In addition, all personnel, tools, and other items, including the exterior of containers of waste, must be free of dust and debris when leaving the work area.

For exterior projects, the same performance standard applies; namely, the certified renovator or a worker under the direction of the certified renovator must contain the work area so that dust or debris does not leave the work area while the renovation is being performed. Additionally, in response to comments suggesting that EPA follow the HUD Guidelines with respect to exterior containment requirements, EPA has incorporated a similar 10 foot minimum. Consequently, this final rule requires that exterior containment include covering the ground 10 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line prevents 10 feet of such ground covering. EPA has concluded that this is an appropriate and reasonable precaution for exterior work, given the fact that some amount of dispersal of dust or debris is likely as a result of air movement, even on relatively calm days. In addition, EPA sees value in maintaining appropriate consistency between this regulation and related HUD rules and guidelines.

In addition to such ground covering, exterior work area preparations must include, at a minimum, closing all doors and windows within 20 feet of the outside of the work area on the same floor as the renovation, and closing all doors and windows on the floors below that area. For example, if the renovation involves sanding a 5-foot by 5-foot area of paint in the middle of the third floor of a building, and that side of the building is only 40 feet long, all doors and windows on that side of the third floor must be closed, as well as all of the doors and windows on that side of the second and first floors. In situations where other buildings are in close proximity to the work area, where the work area abuts a property line, or weather conditions dictate the need for additional containment (i.e., windy conditions) the certified renovator or a worker under the direction of the certified renovator performing the renovation may have to take extra precautions in containing the work area to ensure that dust and debris from the renovation does not contaminate other buildings or migrate to adjacent property. This may include erecting vertical containment designed to prevent dust and debris from contaminating the ground or any object beyond the work area. In addition, doors within the work area that will be used while the job is being performed must be covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area.

Some commenters agreed with the proposed procedures. One commenter agreed that with containment, dust can be contained and cleaned up sufficiently to pass the wipe test screening results. Another commenter supported the use of standard containment and cleaning practices known to reduce dust lead levels on both interior and exterior surfaces and to protect soils and gardens surrounding the house.

Some commenters asserted that the containment procedures were not stringent enough. Some suggested that EPA follow the HUD Guidelines with respect to exterior containment requirements. Others asked EPA to strengthen exterior containment requirements by specifying that containment extend at least twenty feet to collect all debris and residue and that

the rule address circumstances such as wind and rain. One commenter asserted that allowing the certified renovator complete discretion to determine what is appropriate renders the worksite containment requirements completely unenforceable and asked EPA to consider providing a minimum performance standard that all renovators must meet. EPA agrees that a minimum performance standard is necessary and that is why under this final rule EPA is requiring certified renovators to establish containment that prevents dust and debris from leaving the work area. In addition, in this rule EPA has established minimum containment requirements for both interior and exterior renovation requirements. While the certified renovator has discretion regarding the specific components and extent of containment, the renovator and firm will be in violation of this final rule if dust or debris leaves the work area for both interior and exterior renovations. If dust or debris migrates beyond the work area, that migration constitutes a violation of the rule. Accordingly, EPA does not agree with the commenter that the rule is unenforceable.

This final rule provides the certified renovator with some discretion to define the specific size and configuration of the containment to accommodate the variability in size and scope of renovations. EPA considered requiring that in all cases the entire room in which a renovation is occurring be contained, but concluded that doing so would be unwarranted. For example, a small manual sanding job in a large room would not necessarily require full room containment to isolate the work area. EPA has concluded that the most appropriate approach is to impose a minimum size for containment coupled with a performance standard--preventing dust or debris from leaving the workarea--and to prescribe with reasonable specificity the containment measures that are required--e.g., use of plastic of other impermeable material, removal or covering of objects in the work area - but to provide some measure of discretion with regards to the case-specific approaches to containment.

In response to EPA's request for comments on whether there are any situations where some or all of the proposed work practices are not necessary, commenters suggested that work practices were not needed during a gut rehabilitation, although two of the commenters suggested a waiver rather than an exemption in these situations. Several commenters thought that work in unoccupied structures should not require the use of lead safe work practices, or should have an adapted set of work practices. A commenter opined that certain interior containments may not be necessary in vacant and empty housing, but that exterior work always should use lead safe work practices to protect the environment and neighborhood. A commenter stated that there are certain activities common to multifamily and rental housing that warrant special consideration from the Agency. For example, simple painting activities that occur when rental properties turn over should not require a full suite of work practices, particularly given that most state laws require apartment owners to paint each unit at turnover. The commenter suggested that EPA consider a less restrictive set of guidelines for those properties simply undergoing routine painting during the turnover process.

EPA believes that whole house gut rehabilitation projects may demolish and rebuild a structure to a point where it is effectively new construction. In this case, it would not be a modification of an existing structure, and therefore not a renovation. However, a partial-house gut rehabilitation such as a kitchen or bathroom gut rehabilitation project clearly falls within the scope of this final rule.

EPA disagrees that temporarily unoccupied or vacant housing should be *per se* exempt from the requirements of this final rule. EPA's primary concern with exempting renovations in such housing from the work practices required by this final rule is the exposure to returning residents to lead-based paint hazards created by the renovation. However, EPA recognizes that if no child under 6 or no pregnant woman resides there, the owner-occupant may so state in writing and the requirements of this rule would not apply. In addition, for routine painting, such as at unit turnover, if such painting activity does not involve disturbing more than 6 ft^2 of painted surfaces per room for interiors or 20 ft^2 for exteriors, and otherwise meet the definition of ''minor repair and maintenance,'' the requirements of this final rule would not apply. EPA cannot see a basis for imposing a less restrictive set of requirements for projects that disturb more than 6 ft^2 of painted surfaces per room for interiors or 20 ft^2 for exteriors.

Some commenters believed that the Proposal did not adequately address the decontamination of workers and equipment involved in a renovation. They supported the proposed requirement that all personnel, tools and other items, including the exteriors of containers of waste, be free of dust and debris before leaving the work area. However, they believed that the proposed alternative, covering the paths used to reach the exterior of the building with plastic, was not sufficiently protective. One contended that significant lead dust contamination can be tracked or carried out of a work area if workers and equipment are not properly decontaminated. This commenter further noted that workers with contaminated clothing can take that contamination home to their own children and taking contaminated equipment to another jobsite could potentially create a lead hazard at a new site. EPA agrees with these commenters and has deleted the alternative language. The final rule requires renovation firms to use precautions to ensure that all personnel, tools and other items, including the exteriors of containers of waste, to be free of dust and debris before leaving the work area. There are several ways of accomplishing this. For example, tacky mats may be put down immediately adjacent to the plastic sheeting covering the work area floor to remove dust and debris from the bottom of the workers' shoes as they leave the work area, workers may remove their shoe covers (booties) as they leave the work area, and clothing and materials may be wet-wiped and/or HEPA-vacuumed before they are removed from the work area.

Finally, in response to a commenter who was concerned about containment not impeding occupant egress in an emergency, EPA has modified the regulatory text to specify that containment must be installed in such a manner that it does not interfere with occupant and worker egress in an emergency. This can be accomplished, as noted in chapter 17 of the HUD Guidelines, by installing plastic over doors with a weak tape.

4. *Prohibited and restricted practices.* The final rule prohibits or restricts the use of certain work practices during regulated renovations. These practices are open flame burning or torching of lead-based paint; the use of machines that remove lead-based paint through high speed operation such as sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting, unless such machines are used with HEPA exhaust control; and operating a heat gun above 1100 degrees Fahrenheit. These are essentially the same practices as are currently prohibited or restricted under the Lead-based Paint Activities Regulations, 40 CFR 745.227(e)(6), with the exception of dry hand scraping of lead-based paint. While this final rule and EPA's Lead-Based Paint Activities Regulations do not prohibit or restrict the use of volatile paint strippers or

other hazardous substances to remove paint, the use of these substances are prohibited for use in poorly ventilated areas by HUD's Lead Safe Housing Rule and they are regulated by OSHA.

EPA did not propose to prohibit or restrict any work practices, but instead asked for public comment regarding their prohibition or restriction. The Agency was concerned that, because these practices are commonly used during renovation work, prohibiting such practices could make certain jobs, such as preparing detailed or historic millwork for new painting, extremely difficult, if not impossible. In addition, EPA believed that use of the proposed package of training, containment, cleanup, and cleaning verification requirements would be effective in preventing the introduction of new lead-based paint hazards, even when such practices were used. EPA is modifying the proposal based on new data evaluating specific work practices and in response to comments received.

a. *The Dust Study*. EPA understood when developing the proposed rule that considerable data existed showing the potential for significant lead contamination when lead paint is disturbed by practices restricted under EPA's Lead-based Paint Activities Regulations for abatements. EPA conducted the Dust Study, in part, to determine the effectiveness of the proposed work practices. The Dust Study evaluated a variety of renovation activities, including activities that involved several practices restricted or prohibited under the abatement regulations. For example, power planing was included in the Dust Study as a representative of machines that remove lead-based paint through high speed operation. Similarly, the Dust Study also included experiments with power sanding and a needle gun. Each of these activities generated very high levels of dust. The Dust Study thus evaluated the proposed work practice standards, using a range of typical practices currently used by contractors.

In particular, the Dust Study found that renovation activities involving power planing and high temperature heat gun resulted in higher post-job renovation dust lead levels than activities using other practices. The geometric mean post-work, pre-cleaning floor dust lead levels in the work room were 32,644 μg/ft^2 for power planing and 7,737 μg/ft^2 for high temperature heat guns. More importantly, in experiments performed in compliance with this rule's requirements for containment, cleaning, and cleaning verification, the geometric mean post-job floor dust lead levels were still 148 μg/ft^2 for power planing, well over the TSCA section 403 hazard standard for floors. While the geometric mean post-job floor dust levels for the 3 similar experiments involving high temperature heat guns, i.e., experiments performed in compliance with this rule's requirements, were 36 μg/ft^2, the average post-cleaning-verification floor dust lead levels for the individual experiments were 147.5, 65.5, and less than 10 μg/ft^2. Thus, in 2 of these 3 experiments, the requirements of this final rule were insufficient to reduce the floor dust lead levels below the TSCA section 403 hazard standards for floors. In addition, power planing and use of a high temperature heat gun generated fine particle-size dust that was difficult to clean. In fact, almost all of the high post-renovation lead levels were associated with activities involving power planing and high temperature heat guns. Moreover, activities involving power planing and high temperature heat gun jobs also resulted in higher post-job tool room and observation room lead levels than other practices.

Thus, while the Dust Study confirmed that most practices prohibited or restricted under EPA's Lead-based Paint Activities Regulations do indeed produce large quantities of lead dust, it also demonstrated that, with respect to lead-based paint hazards created by machines that remove lead-based paint through high speed operation and high temperature heat guns, the use of the proposed work practices were not effective at containing or removing dust-lead hazards from the work area.

b. *Alternatives to certain practices*. As discussed above, in the proposed rule, EPA stated a concern that, because practices prohibited or restricted under EPA's Lead-based Paint Activities Regulations are commonly used during renovation work, prohibiting or restricting such practices could make certain jobs, such as preparing detailed or historic millwork for new painting, extremely difficult or, in some cases, impossible. In response to its request for comment, the Agency received information on techniques including benign strippers, steam stripping, closed planing with vacuums, and infrared removal that the commenter believed are far superior, far safer and far cheaper than some of the traditionally prohibited or restricted practices. Another commenter noted that window removal and off-site chemical stripping in a well-ventilated setting is an alternative to using heat or mechanical methods to remove lead paint on-site. Alternatively, chemical strippers can be used on-site, given adequate ventilation and protection for workers and building occupants. EPA is therefore persuaded that there are sufficient alternatives to these practices.

c. *Conclusion*. Based on the results of the Dust Study and in response to the voluminous persuasive public comments, this final rule prohibits or restricts the use of the following practices during renovation, repair, and painting activities that are subject to the work practice requirements of this rule:

- Open-flame burning or torching.
- Machines that remove lead-based paint through high speed operation such as sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting, unless such machines are used with HEPA exhaust control.
- Operating a heat gun above 1100 degrees Fahrenheit.

EPA has concluded that these practices must be prohibited or restricted during renovation, repair, and painting activities that disturb lead-based paint because the work practices in this final rule are not effective at containing the spread of leaded dust when these practices are used, or at cleaning up lead-based paint hazards created by these practices. Thus, the work practices are not effective at minimizing exposure to lead-based paint hazards created during renovation activities when these activities are used.

This final rule does not prohibit or restrict the use of dry hand scraping. EPA has concluded based primarily on the Dust Study as corroborated by other data described below that it is not necessary to prohibit or restrict dry scraping because the containment, cleaning, and cleaning verification requirements of this rule are effective at minimizing exposure to lead-based paint hazards created by renovations and the migration of dust-lead hazards beyond the work area when dry hand scraping is employed.

The Dust Study evaluated dry hand scraping, which is restricted under EPA's lead abatement program. In contrast to the results of the activities using power planing and high temperature heat gun, average post-job dust lead levels in the two experiments in which paint was disturbed by dry hand scraping and the work practices required by this rule were used were below the regulatory dust-lead hazard standard for floors. In addition, the National Institute for Occupational Safety and Health (NIOSH) conducted a Health Hazard Evaluation (HHE) at the request of the Rhode Island Department of Health, and published a final report in June of 2000 (Ref. 36). The purpose of the evaluation was to measure worker exposure during various tasks and to

determine whether workers were exposed to hazardous amounts of lead-based paint. Notably worker exposures were compared when scraping painted surfaces using wet and dry scraping methods (wet scraping is the customary substitute for dry scraping in abatement applications). A comparison of worker exposure found statistically equivalent worker exposures. Based on the NIOSH study, EPA has determined that dry scraping is the equivalent of its only practical alternative, wet scraping.

In sum, EPA has determined based on the studies described above and the persuasive comments, including those summarized below, provided by the overwhelming majority of commenters that its approach of prohibiting or restricting certain practices in combination with the containment, cleaning, and cleaning verification, will be effective in minimizing exposure to lead-based paint hazards created during renovation activities, provide an appropriate measure of consistency with other regulatory programs, and cause minimal disruption for renovation firms.

i. *Substantial exposures.* Numerous commenters argued that the rule should prohibit certain practices based on potential health hazards, many backed up by well-documented scientific studies and proven health-protective standards. One commenter stated, after citing several scientific studies, that removing or disturbing lead paint without proper controls causes substantial contamination, posing serious risks to occupants, workers and others. Another cited numerous scientific studies demonstrating the adverse public health implications of permitting these work practices and the availability of alternative work methods. Still another cited the EPA renovation and remodeling study and a State of Maryland study as evidence that prohibited work practices may be associated with elevated blood lead levels. One commenter cited health hazard evaluations of residential lead renovation work showing that these activities produce hazardous worker exposures. Another commenter noted that the hazards of activities that are likely to produce large amounts of lead dust or fumes are well documented, stating that, for example, the Wisconsin Childhood Blood-Lead Study found that the odds of a resident child having a blood lead level in excess of 10 μg/dL increased by 5 times after renovation using open flame torching, and by 4.6 times after heat gun use. Another commenter was concerned that previously collected data may not account for different particle-size distribution, a factor in both the potential cleaning efficacy of work areas and the toxicology of lead poisoning.

ii. *Consistency with other standards.* Some commenters urged EPA to prohibit certain high dust generating practices for the sake of consistency with other work practice standards. Numerous commenters asserted EPA's rule should be consistent with HUD requirements to avoid confusion on the part of contractors and to conform to the standard that has been in place for nearly 6 years. One commenter noted that the regulations of several other federal agencies that administer housing programs, such as the Department of Defense, Department of Agriculture, and Veterans Affairs include prohibited practices. Other commenters noted that the proposed rule conflicted with OSHA rules and would cause confusion among contractors.

Some commenters noted that EPA's proposed rule would conflict with individual state or local regulations prohibiting some or all of these practices. One commenter listed the following states and some cities that have prohibited work practices: California, Indiana, Maine, Massachusetts, Minnesota, New Jersey, Ohio, Rhode Island, Vermont, Wisconsin, Chicago, Cleveland, New Orleans, New York City, Rochester, and San Francisco. Two commenters cited state law in Indiana, under which certain work practices are prohibited and contractors using such work practices are committing a Class D felony (422, 449).

Other commenters noted that practices that are prohibited under EPA's Lead-based Paint Activities Regulations should also be prohibited for renovation work in pre-1978 properties, and noted that in developing the abatement rule EPA demonstrated through its own studies that these practices may increase the risk of elevated blood lead levels in children.

5. *Waste from renovations.* Under this final rule the certified renovator or a worker trained by and under the direction of the certified renovator is required to ensure that all personnel, tools, and other items including waste are free of dust and debris when leaving the work area. The certified renovator or a worker trained by and under the direction of the certified renovator must also contain waste to prevent releases of dust and debris before the waste is removed from the work area for storage or disposal. If a chute is used to remove waste from the work area, it must be covered. At the conclusion of each work day and at the conclusion of the renovation, the certified renovator or a worker trained by and under the direction of the certified renovator must ensure that waste that has been collected from renovation activities is stored under containment, in an enclosure, or behind a barrier that prevents release of dust and debris from the work area and prevents access to dust and debris. This final rule also requires the certified renovator or a worker trained by and under the direction of the certified renovator transporting lead-based paint waste from a work site to contain the waste to prevent releases, e.g., inside a plastic garbage bag. As described in more detail in Unit IV.D.2.c. of the preamble to the 2006 Proposal, EPA revised its solid waste regulations in 40 CFR parts 257 and 258 to make clear that lead-based paint waste generated through renovation and remodeling activities in residential settings may be disposed of in municipal solid waste landfill units or in construction and demolition (C&D) landfills. Requirements for waste disposal may vary by jurisdiction and state and local requirements may be more stringent than Federal requirements. When disposing of waste, including waste water, from renovation activities, the renovation firm must ensure that it complies with all applicable Federal, State, and local requirements.

One commenter suggested that EPA should consider requiring that lead-contaminated waste be stored in a locked area or in a lockable storage container. This commenter also suggested that to prevent any confusion on what constitutes a covered chute, a definition or clarification should be provided in the rule. Another commenter recommended the use of ''sealed'' rather than ''covered'' chutes for waste removal, as a covered chute may not be protective enough to prevent the release of significant amounts of lead-contaminated dust. This final rule requires that waste must be contained to prevent releases of dust and debris before the waste is removed from the work area for storage or disposal. With respect to the use of chutes for waste removal, the requirement for a covered chute was proposed merely to facilitate the removal of bagged or sealed waste so that it is deposited in an appropriate waste disposal container and does not fall to the ground. EPA does not, therefore, believe that this term either needs to be further defined or to require the use of a ''sealed'' chute.

EPA understands that renovation projects can generate a considerable amount and variety of waste material. However, EPA believes that the requirements of the final rule protect

occupants and others from potential lead-based paint hazards presented by this waste. While storing the waste in a locked container is one way to meet the performance standard of this final rule, EPA does not believe that is necessary to specify that as a requirement. The waste may be stored in the work area, which will already be delineated with signs cautioning occupants and others to keep out. EPA believes the owner/occupants have some responsibility for observing these signs. Renovation sites pose potential hazards other than lead-based paint hazards—including the potential fall hazards, sharp protrusions, etc. In sum, the certified renovator is responsible for ensuring that lead-contaminated building components and work area debris that are stored under containment, in an enclosure, or behind a barrier that prevents release of dust and debris and prevents access to the debris. Under this final rule the certified renovator must ensure that waste leaving the work area is contained (e.g., in a heavy duty plastic bag or sealed in plastic sheeting) and free of dust or debris. This imposes a reasonable performance standard without requiring a specific approach. The certified renovator is responsible for evaluating the waste generated and the characteristics of the work site to determine the most effective way of meeting this standard.

6. *Cleaning the work area—a. Final rule requirements.* Under this final rule the certified renovator or a worker under the direction of the certified renovator must clean the work area to remove dust, debris or residue. All renovation activities that disturb painted surfaces can produce dangerous quantities of leaded dust. Because very small particles of leaded dust are easily absorbed by the body when ingested or inhaled, it can create a health hazard for children. Unless this dust is properly removed, renovation and remodeling activities are likely to introduce new lead-based paint hazards. Therefore, the rule requires prescriptive cleaning practices. Ultimately, improper cleaning can increase the cost of a project because additional cleaning may be necessary during post-renovation cleaning verification.

This final rule requires that, upon completion of interior renovation activities, all paint chips and debris must be picked up. Protective sheeting must be misted and folded dirty side inward. Sheeting used to isolate contaminated rooms from non-contaminated rooms must remain in place until after the cleaning and removal of other sheeting; this sheeting must then be misted and removed last. Removed sheeting must be either folded and taped shut to seal or sealed in heavy-duty bags and disposed of as waste. After the sheeting has been removed from the work area, the entire area must be cleaned including the adjacent surfaces that are within 2 feet of the work area. The walls, starting from the ceiling and working down to the floor, must be vacuumed with a HEPA vacuum or wiped with a damp cloth. The final rule requires that all remaining surfaces and objects in the work area, including floors, furniture, and fixtures be thoroughly vacuumed with a HEPA vacuum. When cleaning carpets, the HEPA vacuum must be equipped with a beater bar to aid in dislodging and collecting deep dust and lead from carpets. The beater bar must be used on all passes on the carpet face during dry vacuuming. This cleaning step is intended to remove as much dust and remaining debris as possible. After vacuuming, all surfaces and objects in the work area, except for walls and carpeted or upholstered surfaces, must be wiped with a damp cloth. Wet disposable cleaning cloths of any color may be used for this purpose. In contrast, as discussed in the next section, only wet disposable cleaning cloths that are white may be used for cleaning verification. Uncarpeted floors must be thoroughly mopped using a 2-bucket mopping method that keeps the wash water separate from the rinse water, or using a wet mopping system with disposable absorbent cleaning pads and a built-in mechanism for distributing or spraying cleaning solution from a reservoir onto a floor.

When cleaning following an exterior renovation, all paint chips and debris must be picked up. Protective sheeting used for containment must be misted with water. All sheeting must be folded from the corners or ends to the middle to trap any remaining dust and either taped shut to seal or sealed in heavy duty bags. The sheeting must be disposed of as waste.

b. *Comments on the cleaning protocol.* Several commenters proposed minor changes to the cleaning procedures. Three commenters recommended that daily clean-up be required for projects lasting more than 1 day. One commenter stated that all tools and equipment should be cleaned prior to leaving the job site. One commenter indicated concern that there is no mention of wet wiping areas such as window sills. This final rule requires cleaning both in and around the work area to ensure no dust or debris remains following the renovation. The final rule also requires that all personnel, tools, and other items including waste are free of dust and debris when leaving the work area. EPA recommends that contractors keep work areas as clean and free of dust and debris as practical. Daily cleaning is a good practice, and it may be necessary in some cases to ensure no dust or debris leaves the work area as required by this final rule. However, EPA has no basis to believe that daily cleaning is necessary in every case or even most cases. EPA also notes that the work area must be delineated by signs so that occupants and others do not enter the area. This final rule requires the work area to be contained, and to ensure that all tools, personnel, and other items, including waste, to be free of dust and debris when leaving the work area. Under this final rule, interior windowsills and most other interior surfaces in the work area must be wet wiped. The exceptions are upholstery and carpeting, which must be vacuumed with a HEPA vacuum, and walls, which may be wet wiped or vacuumed with a HEPA vacuum.

Some commenters requested clarification of the requirement to clean ''in and around the work area.'' In response to the two commenters that noted that the HUD Guidelines recommend cleaning 2 feet beyond the work area, EPA has modified the regulatory text to require cleaning of surfaces and objects in and within 2 feet of the work area.

One commenter argued that vacuuming was not necessary because 40 CFR 745.85 requires the certified renovator to cover all furnishings not removed from the work area, so additional cleaning is unnecessary. EPA disagrees with this commenter. Carpets and upholstered objects that remained, covered with plastic, in the work area during the renovation must be vacuumed after the plastic is removed to ensure that the surfaces did not become contaminated during the renovation due to a breach in the containment or during the removal of the containment during clean-up.

One commenter asserted that some requirements for cleaning were not prescriptive enough. The commenter suggested that the rule text, which states that the certified renovator or a worker under the direction of the certified renovator must ''pick up all paint chips and debris,'' could be re-worded to state that the certified renovator or a worker under the direction of the certified renovator must ''collect all paint chips, debris, and dust, and, without dispersing any of it, seal this material in a heavy-duty plastic bag.'' EPA agrees that additional detail would be helpful in this instance and has modified the final rule to include this

recommendation, with the exception of dust, which is collected when the protective sheeting is misted and folded inward.

One commenter stated that the cleaning procedures were excessive and problematic. This commenter asserted that the two-bucket mopping system is inappropriate for some floor types such as wood floors for which excessive water could damage the floor. The commenter suggested that EPA allow a cleaning method employing a dry or damp cloth, or any other specified methodology, to be used in order to achieve a no dust or debris level of cleaning. Three commenters asserted that EPA's definition of wet mopping system was too specific. One commenter stated that to include ''a long handle, a mop head...'' in the description of the wet mopping system is too prescriptive and favors a particular model of commercial product. EPA understands that the two bucket mopping system may not be appropriate for all floor types due to the quantity of water involved. However, the HUD Guidelines recommend and the Dust Study demonstrates that wet cleaning is best able to achieve desired results. This final rule allows for the use of a wet mopping system instead of the two bucket system for the cleaning of flooring. EPA has included a definition of a wet mopping system in order to allow the regulated community to use such a system in place of the traditional two-bucket mop method. EPA's Electrostatic Cloth and Wet Cloth Field Study in Residential Housing study (''Disposable Cleaning Cloth Study''), discussed in more detail in Unit IV.E.2. of the 2006 Proposal, indicates that a wet mopping system is an effective method for cleaning up leaded dust (Ref. 37). EPA believes that allowing the use of a wet mopping system like those widely available in a variety of stores should alleviate concerns regarding the quantity of water used in the cleanup. In addition, EPA disagrees that the description of a wet mopping system favors a particular model of commercial product. Rather, it generally describes any number of wet mopping systems widely available in most stores. However, to alleviate concerns that a particular model of commercial product is preferred, EPA has added the phrase ''or a method of equivalent efficacy'' to the end of the definition of ''wet mopping system.''

One commenter recommended that instead of referencing a two bucket method, EPA should consider simply stating that a method be used that keeps the wash water separate from the rinse water. EPA agrees and has revised the regulatory text to specify a method that keeps wash water separate from rinse water, giving as an example the two bucket method.

One commenter questioned the requirement to vacuum underneath a rug or carpet where feasible. The commenter suggested that EPA clarify that this does not include permanently affixed wall-to-wall carpeting. The commenter notes that it is highly unlikely that the renovation or remodeling activity conducted in a carpeted room would have created the dust embedded underneath both the layer of plastic sheeting and the installed carpeting. EPA agrees with this commenter. EPA did not intend to require vacuuming beneath permanently affixed carpets, i.e., wall to wall carpeting, but rather that removable rugs should be removed and the area beneath vacuumed. However, small, movable, area rugs should be removed from the work area prior to the renovation and the floor beneath would be cleaned as required under this final rule. Therefore, in response to this commenter, EPA has deleted the requirement to vacuum beneath rugs where feasible.

One commenter recommended four options for cleaning carpets: Removing the carpet and pad, cleaning the underlying flooring, then replacing the carpet and pad; shampooing the carpet using a vacuum attachment that removes the suds; steam cleaning the carpet using a vacuum attachment that removes the moisture; or HEPA filtered vacuuming. This final rule seeks to minimize the introduction of lead-based paint hazards to carpeted floors by requiring the certified renovator to cover the floor of the work area with plastic sheeting, carefully clean up and remove the plastic sheeting following work, and thoroughly vacuum the carpet using a HEPA vacuum with a beater bar. EPA believes this containment and cleanup protocol will minimize exposure to lead-based paint hazards created during renovation activities. EPA does not believe a renovation contractor should be responsible for removing and replacing carpet in a home when such a requirement was not within the scope of the renovation project. Also, in contrast to the effectiveness of using a HEPA on carpets, EPA does not have sufficient data on steam cleaning or shampooing to evaluate its effectiveness. Without data to demonstrate the effectiveness of shampooing or steam cleaning carpets EPA is not prepared to require these methods be used in lieu of vacuuming with a HEPA vacuum. EPA further notes that the HUD lead-safe Housing Rule only requires HEPA vacuuming, not steam cleaning or shampooing.

c. *Vacuums equipped with HEPA filters.* Given that the HUD Guidelines recommend the use of HEPA vacuums and the OSHA Lead in Construction standard requires that vacuums be equipped with HEPA filters where vacuums are used, EPA proposed requiring the use of HEPA vacuums in its proposed work practices. Nonetheless, EPA requested comment on whether the rule should allow the use of vacuums other than vacuums equipped with HEPA filters given. Specifically, EPA requested comment on whether there are other vacuums that have the same efficiency at capturing the smaller lead particles as HEPA-equipped vacuums, along with any data that would support this performance equivalency and whether this performance specification is appropriate for leaded dust cleanup.

i. *Background.* HEPA filters were first developed by the U.S. Atomic Energy Commission during World War II to capture microscopic radioactive particles that existing filters could not remove. HEPA filters have the ability to capture particles of 0.3 microns with 99.97% efficiency. Particles both larger and smaller than 0.3 microns are easier to catch. Thus, HEPA filters capture those particles at 100%. Available information indicates that lead particles generated by renovation activities range in size from over 20 microns to 0.3 microns or less (Ref. 38).

OSHA recently completed a public review of their Lead in Construction standard (Ref. 39). OSHA concluded that the principal concerns regarding HEPA vacuums (i.e., cost and availability) have been significantly reduced since the standard was established in 1994. HEPA vacuum cleaners have an increased presence in the marketplace and their cost has decreased significantly. Therefore, OSHA continues to require the use of HEPA vacuums in work subject to the Lead in Construction Standard.

ii. *Final rule requirements.* Vacuums used as part of the work practices being finalized in this final rule must be HEPA vacuums, which are to be used and emptied in a manner that minimizes the reentry of lead into the workplace. The term ''HEPA vacuum'' is defined as a vacuum which has been designed with a HEPA filter as the last filtration stage. A HEPA filter is a filter that is capable of capturing particles of 0.3 microns with 99.97% efficiency. The vacuum cleaner must be designed so that all the air drawn into the machine is expelled through the filter with none of the air leaking past it.

iii. *Comments*. Many commenters supported the use of HEPA vacuums. Some of these commenters supported the requirement that they be used because they are also required by the OSHA Lead in Construction standard. One commenter noted that the price of HEPA vacuums had decreased and were no longer significantly more expensive than non-HEPA vacuums.

Another commenter cited the Dust Study, the NAHB Lead Safe Work Practices Survey, and several other studies as supporting the conclusion that lead-safe work practices and modified lead-safe work practices, along with a two-step or three-step cleaning process using a HEPA-equipped vacuum and wet washing, greatly reduce dust lead levels and should be regarded as best management practices for renovation jobs. The commenter notes that the NAHB study found significant reductions in loading levels after cleanup using HEPA-equipped vacuum and then either wet washing or using a wet disposable cleaning cloth mop.

One commenter contended that HEPA vacuums with beater bars were not currently available on the market at the time comments were submitted. However, EPA has been able to identify commercial vacuum manufacturers as well as department store brands that currently offer HEPA vacuums with beater bar attachments.

Several commenters noted that vacuum cleaners other than HEPA vacuums were effective at removing lead dust. They cited several papers which they asserted support their conclusion, including *Comparison of Home Lead Dust Reduction Techniques on Hard Surfaces: The New Jersey Assessment of Cleaning Techniques Trial* (2002) by Rich, *et al* (Ref. 40), a study by the California Department of Health Services (Ref. 41) which the commenter contends concluded that some non-HEPA vacuums performed better than the HEPA units tested, *Comparison of Techniques to Reduce Residential Lead Dust on Carpet and Upholstery: The New Jersey Assessment of Cleaning Techniques Trial* (2002) by Yiin, *et al* (Ref. 42), and *Effectiveness of Clean up Techniques for Leaded Paint Dust* (1992) by the Canadian Mortgage and Housing Corporation (Ref. 43).

The commenter that cited the Rich, *et al* paper contended that the authors found no clear difference between the efficacy of HEPA and non-HEPA vacuums on hard surfaces (non-carpeted floors, windowsills, and window troughs), and found that non-HEPA vacuums appeared more efficient in removing particles on uncarpeted floors, which are the hard surfaces that may best reflect exposure to children. One commenter stated that given the research literature demonstrates that there is no performance difference in lead dust removal, EPA should allow cleanup with either a HEPA or non-HEPA vacuum. Another commenter contended that a vacuum cleaner retrofitted with a HEPA filter rather than a HEPA vacuum should be required to be used as part of the work practices.

EPA disagrees with the commenters who state that the literature does not demonstrate a difference between HEPA vacuums and non-HEPA vacuums. In the Yiin, *et al* study, the authors stated that for carpets, data from the ''[Environmental and Occupational Health Sciences Institute] vacuum sampling method showed a significant reduction (50.6%, $p = 0.014$) in mean lead loading for cleaning using the HEPA vacuum cleaner but did not result in a significant difference (14.0% reduction) for cleaning using the non-HEPA vacuum cleaner.'' They also note that when they used wipe sampling ''the results indicated that neither of the cleaning methods yielded a significant reduction in lead loading.'' EPA believes the results from the wipe sampling method is less useful because as discussed in Unit III.E.8.iv. of this preamble, the Agency believes that wipe sampling on carpets is not a reliable indicator of the lead-based paint dust in the carpet. The authors report that in their study non-HEPA vacuums were more effective than HEPA vacuums on upholstery but note ''[t]he reduced efficiency of the HEPA vacuum cleaner in cleaning upholstery [as compared to carpets] may be, at least partially, due to the lower pre-cleaning dust lead level and the smaller sample data set for the HEPA vacuum cleaner than for the non-HEPA vacuum cleaner.''

In the Rich, *et al* study, the authors noted that ''On windowsills, the HEPA vacuum cleaner produced 22% (95% CI, 11-32%) larger reductions than the non-HEPA vacuum cleaner, and on the window troughs it produced 16% (95% CI, -4 to 33%) larger reductions than the non-HEPA vacuum cleaner.'' Not only were the percent reductions greater, the post-cleaning geometric mean lead loadings for the experiments in which the HEPA vacuums were used was lower than the post-geometric mean lead loadings for the experiments in which the non-HEPA vacuums were used. On hard floors, the authors reported that the non-HEPA vacuum removed the largest quantities of lead-based paint dust. They note that this may be due in part to the fact that the initial loadings were higher where the non-HEPA vacuums were used (Pre-cleaning geometric mean lead loadings were 200 and 155 $\mu g/ft^2$ for the two types of experiments where non-HEPA vacuum were used) as compared to the lead loadings for the experiments in which the HEPA vacuum was used (Pre-cleaning geometric mean lead loading of 100 $\mu g/ft^2$). However, the post-cleaning geometric mean lead loading for the experiments in which the HEPA vacuum was used was lower than for either of the two types of experiments where non-HEPA vacuums were used. The post-cleaning geometric mean lead loading was lower for each set of experiments in which the HEPA vacuum was used. In considering these data, EPA believes that the data on the post-cleaning lead loadings are particularly important. In assessing the performance of cleaning methods, it is not only the percent reduction that is important but also the ability to clean down to very low levels. Several studies have demonstrated that reducing lead loadings from relatively high levels to about 100 ug/ft^2 is more readily accomplished than reductions below 100 ug/ft^2 and becomes progressively harder at lower levels (Ref. 44).

One commenter stated that EPA did not have sufficient evidence showing that HEPA vacuums are significantly better at removing lead dust than non-HEPA vacuums and cited a Canadian Mortgage and Housing Corporation study from 1992 (Ref. 43). That study was a laboratory study done in a dynamic chamber under controlled conditions and used simulated lead dust. Lead stearate, a compound not typically used in lead-based paint, was used to spike the construction dust used in the experiments. This study has various limitations. It focused on how much of the quantity of leaded dust applied to a surface was present in the vacuum bag after vacuuming. There was no assessment of the size of the dust particles collected. Most importantly, the study did not measure the quantity of leaded dust that remained on the floor. Without this data, the efficacy of the non-HEPA vacuums cannot be assessed. In addition, the study is not very informative as to what will occur under real world conditions.

Two years later, the same group (Ref. 45) studied 20 test rooms where they produced lead-containing dust by power sanding walls of known lead levels. Four cleaning methods were used, of which only two produced acceptable results. The two cleaning methods that did not produce acceptable clean-ups were: (1) Dry sweeping the floor with a corn broom followed by vacuuming with a utility vacuum; and (2) vacuuming the floor with a household

vacuum cleaner followed by wet mopping with a commercial household cleaner. The other two methods that achieved clean-ups resulting in floors that passed dust clearance testing were: (3) vacuuming the floor with a utility vacuum followed by wet mopping with a 2% solution of a commercial lead-cleaning product, followed by a rinse with clean water; and (4) vacuuming with a HEPA vacuum, followed by wet mopping with trisodium phosphate, followed by a clean water rinse, followed by more vacuuming with a HEPA vacuum. The report concludes that ''. . .Cleaning Methods 1 and 2 were inadequate to meet the cleanliness criteria. . .'' Later it states ''Cleaning Methods 3 and 4 did meet both the current and proposed HUD criteria.''

The same commenter also referred to a report submitted to HUD by the California Department of Health Services (Ref. 41). This study evaluated a range of vacuums. The efficacy of the non-HEPA vacuums varied, particularly in comparison with the HEPA vacuums. The authors of the report did not identify the attributes of the non-HEPA vacuums that were instrumental in determining their effectiveness. At best, vacuums that were effective at picking up and retaining lead-based paint dust could be classified as high performing although there were no criteria that could be discerned on what made a high performing vacuum. The report also states that HEPA models without floor tool brushes performed poorly. This may be the case. The HEPA vacuums used in EPA's Dust Study performed adequately and all of these vacuums were equipped with flip down brushes on the floor tool.

The California report contained another finding of interest. ''Of special concern is the direct observation under the scanning electron microscope of lead dust particles dissolving on exposure to water to release large numbers of sub-micron lead particles. Although requiring further study, this effect suggests that vacuuming to remove most of the water soluble lead dust, followed by wet-washing would be the best cleaning strategy.'' The cleaning protocol in this final rule follows this strategy by requiring, for all surfaces in and around the work area except for walls, HEPA vacuuming, followed by wet wiping or wet mopping, followed by the cleaning verification protocol.

EPA has determined that the weight of the evidence provided by these studies demonstrate that the HEPA vacuums consistently removed significant quantities of lead-based paint dust and reduced lead loadings to lower levels then did other vacuums.

While there may be some vacuums cleaners that are as effective as HEPA vacuums, EPA has not been able to define quantitatively the specific attributes of those vacuums. That is, EPA is not able to identify what criteria should be used to identify vacuums that are equivalent to HEPA vacuums in performance. The authors of the studies discussed above do not state that the vacuums used are representative of all vacuums nor do they try to identify particular aspects of the non-HEPA vacuums. Thus, EPA does not believe that it can identify in this final rule what types of vacuums can be used as substitutes for HEPA-vacuums. EPA believes it would be ineffective to identify specific makes or models of vacuums (e.g., the ones used in the studies) in this final rule given how quickly manufactures change models, nor would that take into account new manufacturers.

EPA also disagrees with the commenter that suggested that vacuums that are retrofitted with a HEPA filter should be considered sufficient for purposes of this rule. These vacuums are not necessarily properly sealed or designed so that the air flow goes exclusively through the HEPA filter. EPA agrees with the commenter who stated that HEPA vacuums are vacuums which have been designed for the integral use of HEPA filters, in which the contaminated air flows through the HEPA filter in accordance with the instructions of its manufacturer and for which the performance standard for the operation of the filter is defined. EPA also agrees with those commenters that contended that the rule should contain a more-specific definition of HEPA vacuum. Accordingly, this final rule defines ''HEPA vacuum'' as a vacuum which has been designed with a HEPA filter as the last filtration stage and includes a description of what the term HEPA means. The definition of ''HEPA vacuum'' also specifies that the vacuum cleaner must be designed so that all the air drawn into the machine is expelled through the filter with none of the air leaking past it.

Furthermore, EPA agrees that OSHA's requirement that HEPA vacuums should be an important consideration in determining whether HEPA vacuums should be required to be used as part of the work practices being finalized today. Because OSHA's standard covers practically all work subject the to EPA's final Renovation, Repair, and Painting program regulations, and applies to all firms having an employee/employer relationship with few exceptions, there is no reason to create a separate standard for those firms not subject to the OSHA standard, particularly in light of the data on the efficacy of HEPA vacuums versus non-HEPA vacuums discussed above. Even if EPA were able to define vacuums that were acceptable substitutes to HEPA vacuums, it is not clear that the benefits would outweigh the complications associated with creating an EPA standard that is different than that required by OSHA.

7. *Cleaning verification.* This final rule requires the certified renovator to use disposable cleaning cloths after cleaning both as a fine cleaning step and as verification that the containment and cleaning have sufficiently cleaned up the lead-paint dust created by the renovation activity. Cleaning verification's usefulness is based on the combination of its fine cleaning properties and the fact that it provides feed-back to the certified renovator on the effectiveness of the cleaning. Cleaning verification is an important component of the work practices set forth in this rule and contributes to the effectiveness of the combination of training, containment, cleaning and verification at minimizing exposure to lead-based paint hazards created during renovation, remodeling and painting activities.

a. *Background.* As described in greater detail in Unit IV.E.2. of the preamble to the 2006 Proposal (Ref. 3), EPA began looking for an alternative to dust clearance sampling that would be quick, inexpensive, reliable, and easy to perform. EPA believed that a verification method was needed because studies have consistently shown that interior visual clearance resulted in a high percentage of false negatives, that is falsely indicating that lead loadings were below the standards used. This occurred even when using a clearance standard of 100 $\mu g/ft^2$.

i. *Disposable Cleaning Cloth Study.* The Disposable Cleaning Cloth Study used commercially available disposable cleaning cloths to determine whether variations of a ''white glove'' test could serve as an effective alternative (Ref. 37). White disposable wet and dry cleaning cloths were used to wipe windowsills and wipe floors, then they were examined to determine whether dust was visible on the cloth. This determination was made by visually comparing the cloth to a photographic standard that EPA developed to correlate to a level of contamination that is at or below the dust-lead hazard standard in 40 CFR 745.65(b). Cloths that matched or were lighter than the photographic standard were considered to have achieved ''white glove.'' This series of studies found that on uncarpeted floors, 91.5% of the surfaces

that achieved ''white glove'' using only dry cloths were confirmed by dust wipe sampling to be below the dust lead hazard standard for floors, while 97.3% of the floors that achieved ''white glove'' using only wet cloths were also below the hazard standard. In addition, 10 of the 11 floors where ''white glove'' was not achieved using dry cloths, and 20 of the 21 floors where ''white glove'' was not achieved using wet cloths, were nonetheless below the dust lead hazard standard. There were very few instances where ''white glove'' was achieved but the dust lead level was above the dust lead hazard standard. Thus, the study showed that for floors, the white glove test results were biased towards false positives. Windowsills were also tested. For the dry cloth protocol, 96.4% of the sills that achieved ''white glove'' were also confirmed by dust wipe sampling to be below the dust lead hazard standard for windowsills, and the one sill that did not achieve ''white glove'' was also below the standard. For the wet cloth protocol, all of the sills that achieved ''white glove'' were also below the dust lead hazard standard, as were the four sills that did not reach ''white glove.''

Based on the results of the Disposable Cleaning Cloth Study, the 2006 Proposal included for interior renovations, as part of the work practices, a post-renovation cleaning verification process that would follow the visual inspection and cleaning. Cleaning verification would consist of wiping the interior windowsills and uncarpeted floors with wet disposable cleaning cloths and, if necessary dry disposable cleaning cloths, and comparing each to a cleaning verification card developed and distributed by EPA.

ii. *The Dust Study.* The Dust Study (Ref. 17), which is described elsewhere in this preamble, assessed the proposed work practices. As one component of the proposed work practices, the cleaning verification was evaluated in the Dust Study. It should be noted that the Dust Study was not designed specifically to evaluate the cleaning verification in isolation of the rest of the work practices. Unlike the earlier Disposable Cleaning Cloth Study that was intended to test the effectiveness of the use of the ''white glove'' test in isolation, the Dust Study was meant to evaluate the effectiveness of the proposed work practices, including cleaning verification. Unlike the earlier Disposable Cleaning Cloth Study, the Dust Study involved actual renovations performed by local renovation contractors who received instruction in how to perform cleaning verification and then were left alone to determine whether cleaning cloths matched or were lighter than the cleaning verification card. In order to maximize the information collected about cleaning verification in the Dust Study, cleaning verification was conducted after each experiment, not just those experiments that were being conducted in accordance with the proposed rule requirements for containment and cleaning.

One of the Dust Study conclusions was that cleaning verification resulted in decreases in lead levels, but was not always accurate in identifying the presence of levels above EPA dust lead hazard standards for floors and sills. This refers to the experiments involving power planing and high temperature heat guns. An examination of the cleaning verification data in the study shows that, if power planing and high temperature heat gun experiments are excluded, the values for post-renovation cleaning verification when the proposed rule work practices were used were at or below the regulatory hazard standard for floors, often significantly below the regulatory hazard standard. These results were similar for windowsills. Excluding power planing and high temperature heat gun experiments, all of the post-renovation cleaning verification windowsill sample averages for experiments conducted in accordance with the proposed rule requirements were below the regulatory dust lead hazard standard for windowsills. In addition, 26 of the 30 other experiments (using only some elements of the proposed containment and cleaning requirements) not involving power planing or high temperature heat guns had post-renovation cleaning verification sill sample averages well below the hazard standards.

b. *Cleaning verification as an alternative to clearance testing.* In determining whether cleaning verification could be seen as a qualitative alternative to clearance testing, EPA considered both the Disposable Cleaning Cloth Study and the Dust Study. Even though the Disposable Cleaning Cloth Study showed that the cleaning verification cloths that reached ''white glove'' were approximately 91% to 97% likely to be below the regulatory hazard standard, EPA believes the greater variability seen in the Dust Study, particularly in the experiments where the complete suite of proposed work practices were not used does not support the characterization of cleaning verification as a direct substitute for clearance testing. Cleaning verification, when used apart from the other work practices, is not as reliable a test for determining whether the hazard standard has been achieved as clearance testing. However, the Dust Study supports the validity of cleaning verification as an effective component of the work practices. The cleaning and feedback aspects of cleaning verification are important to its contribution to the effectiveness of the work practices.

c. *Final rule requirements.* Based on a review of the Dust Study and the Disposable Cleaning Cloth Study, EPA concluded that if the practices prohibited in this final rule are avoided and the required work practices are followed, then cleaning verification is an effective component of the work practices. EPA believes that the suite of work practices as a whole are effective at addressing the lead-paint dust that is generated during renovation, repair, and painting preparation activities. Therefore, the final rule does not require dust clearance sampling after any renovations, nor does it allow the signs delineating the work area to be removed based solely on the results of a visual inspection. The final rule does require a certified renovator to perform a visual inspection to determine whether dust, debris, or residue is still present in the work area, and, if these conditions exist, they must be eliminated by re-cleaning and another visual inspection must be performed. In addition, the rule requires that after an interior work area passes the visual inspection, the cleaning of each windowsill and uncarpeted floor within the work area must be verified, as explained below. After an exterior work area passes the visual inspection, the renovation has been properly completed. In response to one commenter who was concerned about the dust that could collect on exterior windowsills during exterior projects, the final rule clarifies that the visual inspection must confirm that no dust, debris or residue remains on surfaces in and below the work area, including windowsills and the ground.

For interior renovations, after the work area has been cleaned and has passed a visual inspection, a certified renovator must wipe each interior windowsill in the work area with a wet disposable cleaning cloth and compare the cloth to a cleaning verification card developed by EPA. If the cloth matches or is lighter than the image on the card, that windowsill has passed the post-renovation cleaning verification. If the cloth is darker than the image on the card, that windowsill must be re-cleaned in accordance with § 745.85(a)(5)(ii)(B) and (C) and the certified renovator must wipe that windowsill with a new wet cloth, or the same one folded so that an unused surface is exposed, and compare it to

the cleaning verification card. If the cloth matches or is lighter than the card, that windowsill has passed. If not, the certified renovator must then wait for one hour after the surface was wiped with the second wet cleaning verification cloth or until the surface has dried, whichever is longer. Then, the certified renovator must wipe the windowsill with a dry disposable cleaning cloth. Based on the Dust Study, EPA concluded that this process need not be repeated after the first dry cloth. At that point, that windowsill has passed the post-renovation cleaning verification process. Each windowsill in the work area must pass the post-renovation cleaning verification process.

The cleaning verification protocol in the final rule is similar to what was in 2006 Proposal. By not requiring the surface to be re-cleaned after the second wet wipe and by ending the cleaning verification process after one dry cloth, this final rule is different from the Proposal. The 2006 Proposal required that the dry cloths be used until one passed verification (i.e., reached ''white glove''). EPA's final rule does not require more than one dry cloth because only 3 experiments out of the 60 performed in the Dust Study failed the second wet cloth. None of these 3 experiments were performed in accordance with the requirements of this final rule; all experiments performed in accordance with the requirements of this final rule passed after either the first or second wet cloth. Based on the Dust Study, it is unlikely that dust containing lead will remain in excess of the hazard standard following two wet and one dry wipes; however EPA is concerned about the possibility of requiring potentially indefinite cleaning by renovation contractors, with the potential of making them responsible for cleaning up pre-existing dirt or grime, whether lead-contaminated or not.

After the windowsills in the work area have passed the post-renovation cleaning verification, a certified renovator must proceed with the cleaning verification process for the floors and countertops in the work area. A certified renovator must wipe no more than 40 ft^2 of floor or countertop area at a time with a wet disposable cleaning cloth. For floors, the renovator must use an application device consisting of a long handle and a head to which a wet disposable cleaning cloth is attached. If the floor and countertop surfaces in the work area exceed 40 ft^2, the certified renovator must divide the surfaces into sections, each section being no more than 40 ft^2, and perform the post-renovation cleaning verification on each section separately. If the wet cloth used to wipe a particular section of surface matches or is lighter than the image on the cleaning verification card, that section has passed the post-renovation cleaning verification. If, however, on the first wiping of a section of the surface, the wet cloth does not match and is darker than the image on the cleaning verification card, the surface of that section must be re-cleaned in accordance with § 745.85(a)(5)(ii)(B) and (C). After re-cleaning, the certified renovator must wipe that section of the surface again using a new wet disposable cleaning cloth. If the second wet cloth matches or is lighter than the image on the cleaning verification card, that section of the floor has passed. If the second wet cloth does not match and is darker than the image on the verification card, the certified renovator must wait for 1 hour or until the surface has dried, whichever is longer. Then, the certified renovator must wipe each of those 40 ft^2 sections of the floor or countertop surfaces that did not achieve post-renovation cleaning verification using the wet cloths with a dry disposable cleaning cloth. On floors, this wiping must also be performed using an application device with a long handle and a head to which the dry cloth is attached. At that point, the floors and countertops have passed the post-renovation cleaning verification process and the warning signs may be removed.

In finalizing the work practices in this final rule, EPA has taken into consideration safety, reliability and effectiveness. EPA has concluded that these work practices, including cleaning verification, are an effective and reliable method for minimizing exposure to lead-based paint hazards created by the renovation, both during and after the renovation.

d. *Comments.* EPA received many comments on cleaning verification. The majority of the comments supported the use of dust wipe clearance testing and did not consider cleaning verification as a suitable substitute. Some of these commenters supported the use of dust wipe clearance testing for purposes of clearance. Some commenters did not support either dust wipe clearance testing or cleaning verification; they contended that visual inspection alone was sufficient and that dust clearance testing is too costly. Others questioned whether cleaning verification had been demonstrated to be valid, reliable, and effective in establishing that the work area had been adequately cleaned or that the clearance standards were met. Some contended that the cleaning verification method showed promise, but should be subjected to additional testing, including field trials, to demonstrate its effectiveness when used by certified renovators. A minority of commenters supported the use of cleaning verification. Some supported its use rather than dust wipe-clearance testing and clearance, particularly given that renovations are not intended to remove lead-based paint. Some supported cleaning verification because it is faster, easier to implement, and less expensive than clearance testing.

i. *Cleaning verification is not a substitute for clearance testing.* Many commenters contended that cleaning verification is not a substitute technology for dust-wipe clearance testing and should not be used in this manner. EPA agrees with the commenters. As discussed in Unit III.E.8.b., based on a careful consideration of the Disposable Cleaning Cloth Study and the Dust Study, EPA has concluded that, in itself, cleaning verification should not be used as a substitute for dust wipe clearance testing.

ii. *Dust clearance testing and clearance.* Many commenters asserted that the rule should require dust clearance testing instead of the cleaning verification. Some further contended that dust clearance testing is the only proven method for verifying lead dust levels. Others supported the use of dust wipe clearance testing for purposes of clearance for the renovation. One commenter noted that even when dust clearance testing is performed it is not uncommon for clearance to be conducted up to three times on a home to make sure that lead levels are sufficiently low. Some commenters suggested that cleaning verification be used as a screen before dust clearance testing. Other commenters contended that dust clearance testing should not be required because it is expensive and time consuming and is an obstacle to completing the renovation job. Other commenters contended that dust clearance testing has been done in some jurisdictions quickly and relatively inexpensively. A few commenters contended that EPA should not require dust clearance testing because there is a difference between abatement, which is intended to eliminate lead-based paint hazards, and renovations in which the focus should be to not create any new lead-based paint hazards. Some commenters asserted that dust clearance testing should not be required because this would result in the renovator being responsible for existing lead-based paint hazards. One commenter used the example of a window replacement

project to illustrate this point. The commenter argued that, where the floor in the work area is in poor condition but outside the scope of the renovation contract, the window replacement contractor should not be responsible for making sure the floor passes a clearance standard, which may not be possible without modifying the floor.

EPA disagrees that dust clearance testing and clearance should be components of the renovation activities subject to this final rule. Dust clearance testing is used in abatement to determine whether lead-based paint hazards have been eliminated. This test is part of a specific process that involves a specialized work force (e.g., inspector, risk-assessor), typically removal of residents, and modifications to the housing in some instances to eliminate lead-based hazards (e.g., removing carpet or refinishing or sealing uncarpeted floors). Dust clearance testing is needed to determine if lead-based paint hazards have been eliminated and residents can re-occupy a house and not be exposed to lead-based paint hazards. As noted by a commenter, a home may require clearance testing be conducted up to three times before the home is determined to be free of lead-based paint hazards and it may require that floors be refinished or that carpets be replaced.

The Disposal Cleaning Cloth Study showed that wet wipes can pick up accumulated grime from floors. Applying this to the renovation context, if EPA were to require clearance, renovators might be held responsible for cleaning up pre-existing lead dust hazards that had accumulated in the grime on the floor.Based on the Dust Study, EPA has determined that all of the leaded dust generated by the renovation will have been cleaned up by two wet wipes followed by one dry wipe, where necessary. EPA is concerned about the possibility of requiring potentially indefinite cleaning by renovation contractors, with the potential of making them responsible for cleaning up pre-existing dirt or grime, whether lead-contaminated or not. Even assuming EPA has authority to require replacement of carpets and floors under some circumstances as part of a renovation project, EPA does not think as a policy matter that such an approach in which pre-existing hazards must be eliminated is appropriate. It could fundamentally change the scope of a renovation job. The time and cost of conducting clearance testing and achieving clearance is an acceptable part of the time and cost of conducting the abatement given the goal of an abatement, the range of activities that are inherent in an abatement, and the activities that are required to be conducted to achieve clearance. Given the effectiveness of the work practices being finalized in this rulemaking, including the role of cleaning verification in minimizing exposure to lead-based paint dust generated during renovations, dust clearance testing does not provide the added value to balance the time and effort and the cost to home and building owners associated with requiring this additional step to the work practices.

As discussed in Unit II.A.6.b., there are many differences between renovations and abatements. Renovations are different from abatements in intent, implementation, type of workforce, workforce makeup, funding, and goal. Renovations are focused not on eliminating lead-based paint hazards, but rather on making repairs or improvements to a building. The vast majority of abatements are either done with funding from HUD and/or a State or local government. In addition, residents are not typically present in a residence during an abatement while they are typically present in a residence during a renovation. Thus, the purpose of dust wipe clearance testing and clearance would necessarily be different if it were used in a renovation than in an abatement. For abatements, clearance testing and clearance are used to minimize potential exposure by eliminating lead-based paint hazards after completion of the job. Clearance acts as the means to ensure that minimization and signal the end of the job. For renovations, given the presence of residents, the concern is for potential exposure both during and after the job. Dust clearance testing and clearance would only address the second part of the exposure equation. Thus, dust clearance testing conducted after renovation activities have been completed would not provide the equivalent determination of potential exposure that it does for abatement. EPA has considered this difference as one factor in its determination that given the effectiveness of the work practices being finalized in this rulemaking, including the role of cleaning verification in minimizing exposure to lead-based paint dust generated during renovations, dust clearance testing does not provide the added value to balance the time and effort and the cost to home and building owners associated with requiring this additional step to the work practices.

Although renovators should be required to address lead-based paint dust generated by renovation activities, the Agency is not requiring renovators to take the actions required under the abatement rules to achieve clearance for lead-based paint dust not associated with the renovation and to address housing conditions not associated with the renovation.

EPA agrees that having dust wipe samples collected by a qualified person and analyzed by a qualified laboratory is an effective way to determine the quantity of lead in dust remaining after a renovation activity, but it would not necessarily show that the dust was due to the specific renovation activity. EPA also notes that in addition to providing a numerical value, dust clearance testing costs more than cleaning verification and takes longer to produce results. Results can take from 24 to 48 hours or longer and cleaning, sampling and analysis may have to be repeated depending upon the initial results. During this period, the warning signs delineating the work area would need to be maintained to protect occupants and others from the risk of exposure to lead-based paint hazards created by the renovation. Thus, EPA believes that dust clearance sampling is a poor fit for renovation work for a variety of reasons, including the greater expense associated with clearance testing, the time necessary to obtain the results of the testing and the consequent delay in the completion of the job, and the potential to expand the scope of the renovation.

EPA believes that dust clearance testing and clearance are not necessary given that the Dust Study demonstrates that cleaning verification, as an effective component of the work practices, minimizes exposure to lead-based paint hazards created by the renovation, both during and after the renovation. The cleaning and feedback aspects of cleaning verification are important to its contribution to the effectiveness of the work practices. EPA notes that unlike dust wipe clearance testing in which a small part of the work area would be tested, cleaning verification is conducted over the whole work area. Each repetition of the cleaning verification protocol further cleans the surface.

The work practices, including cleaning verification, required by this final rule are expected to minimize exposure to any newly created lead-based paint hazards created by a renovation by removing newly deposited dust, while requiring cleanup of pre-existing hazards only incidentally, to the extent such cleanup is unavoidable to address the newly created hazards. The Dust Study demonstrates that the cleaning verification protocol, used in

conjunction with the other work practices in this final rule, is effective and reliable in achieving this result.

While the requirements of this rule will, in some cases, have the ancillary benefit of removing some pre-existing dust-lead hazards, it strikes the proper balance of addressing the lead-based paint hazards create during the renovation but at the same time not requiring renovators to remediate or eliminate hazards that are beyond the scope of the work they were hired to do.

iii. *Visual inspection in lieu of cleaning verification.* Some commenters urged EPA to require only visual inspection of the work area after the cleaning following a renovation. They contend that cleaning verification is not needed. Some commenters argued that thorough cleaning in combination with a requirement that no visible dust or debris remain is adequate to address the lead dust created by the renovation activity. Most of these commenters also noted that because renovation and abatement are different that it would be inappropriate for EPA to impose additional requirements on renovation firms beyond visual inspection. Some commenters contended that the lead dust from a renovation is usually in the form of debris such as chips and splinters that can be seen with the naked eye, and the presence of this debris is an indicator to workers that the job site requires additional cleaning until no visible debris remains.

One commenter contended that cleaning after the renovation activity until the worksite passed a visual inspection was the most important determinant of whether a job would pass a dust clearance test. In support of this contention, the commenter cited the Reissman study (Ref. 22). The commenter contended that the study demonstrates that when there was no visible dust and debris present after completion of renovation or remodeling activity, there was no added risk of a child having an elevated blood lead level as compared to the risk for children living in homes where there was no reported renovation or remodeling work.

Two commenters offered an analysis of two sets of data collected by an environmental testing firm. One dataset consists of post-renovation dust samples collected in Maryland apartment units; the other consists of dust samples collected for risk assessment purposes in 41 states. No information on renovation activity is provided for the second dataset. The commenters argue that because 96.7% of the Maryland post-renovation samples and 96.1% of the other samples were below the applicable hazard standard for the surface (floor or windowsill) tested, this suggests that visual inspection in those cases was sufficient to ensure that no dust-lead hazard existed.

One commenter cited the Dust Study (Ref. 17), the NAHB Lead Safe Work Practices Survey (Ref. 19), and several other studies as supporting the conclusion that lead-safe work practices and modified lead-safe work practices, along with a two-step or three-step cleaning process using a HEPA-equipped vacuum and wet washing, greatly reduce dust lead levels and should be regarded as best management practices for renovation jobs. The commenter notes that the NAHB study found significant reductions in loading levels after cleanup using HEPA-equipped vacuum and then either wet washing or using a wet mopping system. The commenter argues that if the work area is cleaned using these practices, it is appropriate to adopt a visual clearance standard allowing no visible dust or debris in the work area at the conclusion of the job.

Other commenters contended that visual inspection following cleaning after a renovation is not a reliable method for determining whether a lead-based paint hazard remains after cleaning. Some commenters cited a study conducted by the National Center for Healthy Housing (NCHH) showing that 67% of the visual inspections that initially passed failed when checked more carefully and 54% that eventually passed a visual inspection were found to be above the hazard standard. However, one commenter contended this was a poorly conducted study. Another commenter referred to the study ''An Evaluation of the Efficacy of the Lead Hazard Reduction Treatments Prescribed in Maryland Environmental Article 6-8'' conducted by NCHH for the Baltimore City Health Department in which 53% of housing identified by visual inspection as being below the hazard standard was actually above the hazard standard. Another commenter argued that NIOSH research indicates that significant lead contamination may remain on surfaces that appear clean.

During inter-Agency review, one commenter pointed to 2007 studies from Maryland and Rochester, New York that they contend show trained workers and visual inspection for dust and debris can achieve 85–90% compliance with the hazard standards following renovations in previously occupied housing. Given the lateness of the submission, EPA did not review this information. However, EPA notes that in a cover letter, the commenter states that the 2007 Maryland Study was conducted by workers that had taken a 2–day training course, which is more training than required by this rule. Even if the studies do demonstrate this effectiveness by highly trained workers, EPA does not believe that a 85–90% effectiveness is sufficiently protective for residents.

EPA disagrees with those commenters that contended that a visual inspection following cleaning after a renovation is sufficient to ensure the lead-based paint dust generated by a renovation has been sufficiently cleaned-up. The weight-of-the-evidence clearly demonstrates that visual inspection following cleaning after a renovation is insufficient at detecting dust-lead hazards, even at levels significantly above the regulatory hazard standards. Further, EPA disagrees with the implication that easily visible paint chips and splinters are necessarily the primary materials generated during a renovation. EPA studies, including the Dust Study, show that renovation activities generate dust as well as chips and splinters. Finally, EPA disagrees with those commenters who requested the work practices in this final rule not include any verification beyond visual inspection. In the Dust Study, there were 10 renovations performed in accordance with the 2006 proposed work practices that did not involve practices prohibited by this final rule. Of those 10 renovations, 5 needed the additional cleaning verification step in order to achieve EPA's regulatory dust-lead hazard standards for floors. (EPA notes that the Dust Study Protocol did not explicitly specify that all dust and debris be eliminated prior to the cleaning verification step, only that visible debris be removed. However, the contractor running the study for EPA reported that, in practice, the renovators participating in the study eliminated all visible dust and debris as part of their typical cleaning regimen. Thus, the study protocol was slightly different from the rule requirements, which state that the renovation firm must remove all dust and debris and conduct a visual inspection before beginning the cleaning verification procedure.)

EPA does not believe that the Reissman, *et al.* study is supportive of the contention that visual inspection of the work area is sufficient because it did not evaluate the effectiveness of a visual inspection requirement. The study did not measure dust lead levels, which are the basis for this rule. Instead, it characterized the relationships between elevated blood lead levels and renovation dust and debris that spread throughout the housing. EPA notes that Reissman, *et al.* concluded that there

was a correlation between renovation activities and elevated blood lead levels.

EPA concluded that the dataset referenced by one commenter that consists of dust samples collected for risk assessment purposes in 41 States is not informative because there was no information on renovation activity collected with these dust samples. With respect to the Maryland renovation study,96.7% is an overstatement. The author who conducted the analysis stated that:

> [W]hen the maximum test values are examined rather than the mean, 9.8% of the MD sample and 12.5% of the national sample of properties with LBP surpassed at least one of the hazard thresholds of 40 μg/sf for floors and 250 μg/sf for sills. As illustrated in Exhibit 1, a fairly sizable percentage of the lead tests exceed the clearance thresholds. The failure rates are about 20 percent lower for Maryland than for the national LBP sample. However, even for Maryland, nearly one in ten apartments would fail the hazard test.

Thus, even if these were the only data available, it would not support the conclusion that visual clearance is effective.

After reviewing the NAHB Lead Safe Work Practices Survey, EPA concluded that it does not support the contention that visual inspection is sufficient to detect whether lead-based paint dust remains. While EPA agrees that use of a HEPA-vacuum and wet-washing are effective at cleaning lead-based paint dust, this does not support the case for relying on visual inspection without subsequent cleaning verification. In the NAHB study, the levels of lead-based paint dust that remained after the renovation activities were sometimes higher and sometimes lower than at the start of the renovation, but they were always at relatively high levels after the renovation--as high as 11,400 ug/ft^2.

In addition, the two studies conducted by the National Center for Healthy Housing as noted by commenters demonstrate that visual inspection was not effective at determining the presence of dust-lead hazards. The study ''Evaluation of the HUD lead-Based Paint Hazard Control Grant Program'' study conducted by NCHH corroborates these findings.

iv. *Carpets and other horizontal surfaces within the work area.* Some commenters were concerned that cleaning verification is not intended for use on carpeted floors. They were not confident that thorough cleaning was adequate to address potential lead hazards that might remain in carpet after the renovation. One commenter pointed to studies showing a significant correlation between dust lead in carpets and children's blood lead. As cleaning verification is not required for carpet, commenters criticized the lack of a required method for determining that lead hazards in carpet had been eliminated. Commenters suggested EPA require clearance testing for carpeted rooms in the work area, which some argued has been demonstrated to be effective, or rely on the HUD protocol, which they asserted is widely accepted and used.

As discussed in detail in Unit IV.E. of the preamble to the 2006 Proposal, EPA did not design cleaning verification for use on carpeted floors. This was based on EPA's concerns about the validity of dust wipe sampling on carpeted floors. EPA noted that the decision to apply the clearance standard promulgated in the TSCA section 403 rulemaking to carpeted floors ultimately had little consequence, given the context in which clearance standards are used--to ensure that lead-based paint hazards have been eliminated. Typically, during an abatement, carpets that are in poor condition or are known to be highly contaminated are removed and disposed. EPA further notes that the HUD Lead-safe Housing Rule only requires HEPA vacuuming, not steam cleaning or shampooing.

While an abatement might require the removal of a lead-contaminated carpet, EPA has concluded that it is not appropriate to require carpet removal following a renovation. Even assuming EPA has authority to require removal of carpet following a renovation, this could significantly expand the cost of a renovation, and fundamentally expand the scope of the renovation activity contracted for by the homeowner or building owner by requiring removal of carpets as a result of pre-existing lead contamination.

Dust Study data on containment and information on the effectiveness of HEPA vacuums show that the use of containment and post-renovation cleaning with HEPA vacuums to remove the lead-based paint dust potentially deposited on the carpets during the renovation would reliably and effectively address lead-based paint dust generated during a renovation. Thus, rather than rely upon a dust clearance sample that may not be accurate and may require the replacement of the carpet for renovation projects in which a carpet is present, EPA is finalizing the work practices which require containment and the use of a HEPA vacuum equipped with a beater bar for cleaning.

In the absence of a practical, effective way of determining how much lead dust has been added to a carpet and whether it has been fully removed, EPA is adopting a technology-based approach for carpets that differs from the approach used for hard-surfaced floors, by requiring use of a HEPA vacuum with a beater bar. EPA is not aware of, and commenters have not identified, a practicable approach similar to the one EPA has adopted for floors as a basis to evaluate the results of the application of work practice standards to carpets. In the absence of such an approach, EPA believes the approach adopted today is the most effective, reliable approach available for minimizing potential lead-based paint hazards in carpets created by renovations.

One commenter suggested that cleaning verification be required on other horizontal surfaces within the work area, in addition to windowsills and uncarpeted floors. EPA agrees with this commenter because the Dust Study demonstrated that, in nearly all cases, the cleaning verification step resulted in lower dust lead levels and, in most cases, the verification step was needed in order to achieve cleanup of all of the leaded dust deposited on the floors by the renovation. EPA is also concerned about the possible contamination of surfaces that are used to prepare, serve, and consume meals. EPA expects that movable surfaces, such as tables and desks, will be moved from the work area before work begins. Therefore, EPA has modified the rule to require cleaning verification on all countertops in the work area.

v. *Reliability of cleaning verification.* EPA received comments prior to the 2007 request for comments on the proposed work practices in light of the Dust Study. Those pre-Dust Study comments are summarized here. Commenters questioned whether cleaning verification had been demonstrated to be valid, reliable, effective, or efficient in establishing that the work area had been adequately cleaned or that the clearance standards were met. Some commenters contended that the cleaning verification method showed promise, but should be subjected to additional testing, including field trials, to demonstrate its effectiveness when used by certified renovators. Commenters on the 2006 Proposal observed that the cleaning verification protocol was supported by a single study that was conducted under conditions unlike those presented by the typical renovation. Specifically, a commenter noted that most of the housing units studied had undergone some form of abatement that would likely have reduced dust levels and the study used professional inspectors or other highly trained individuals to collect the samples according to

specified protocols. The commenter was concerned that a renovator with no experience with sample collection and little training could replicate the work of the professionals used in the study. The commenter pointed out that the study avoided testing the procedure on rough surfaces, a condition that will frequently occur in real world applications, and used a different set of wipe protocols than actually utilized by the EPA in the 2006 Proposal. Another commenter on the 2006 Proposal noted that cleaning verification had never been employed in a real-world practical setting. In addition, some of these commenters contended that the cleaning verification protocol was too complicated or too confusing to follow.

A number of commenters who provided comments in response to EPA's request for comments on the proposed work practices in light of the Dust Study quoted the sentence in the conclusion section of EPA's Dust Study that states that the cleaning verification protocol was not always accurate in identifying the presence of levels above EPA standards for floors and sills. Some of these commenters also noted the Dust Study report's discussion of factors that affected the effectiveness of cleaning verification, such as floor condition, contractor performance, job type, and dust particle characteristics. One commenter observed that while all interior experiments resulted in final passed cleaning cloths for all floor zones and for all windowsills, nearly half of the experiments in the study ended with average work room floor lead levels above EPA's dust lead hazard standard for floors of 40 μg/ft². The Clean Air Scientific Advisory Committee, while not asked to comment on the efficacy of the cleaning verification, contended that in the Dust Study cleaning verification did not provide sufficiently reliable results, leading to an inaccurate assessment of cleaning efficiency.

EPA disagrees with these commenters. The Dust Study did provide a real-world practical setting in which to assess the use of cleaning verification. Local renovation contractors performed actual renovations for each experiment in the study. The contractors performed cleaning verification on floors of wood, vinyl, or tile, in good, fair, or poor condition. The Dust Study used the protocols that were consistent with those in the 2006 Proposal. While the Dust Study was not designed specifically to assess cleaning verification, it did assess the effectiveness of cleaning verification both when it was used as part of the proposed rule work practices and as a separate step after the other experiments which did not follow all the proposed work practices. Each experiment included a cleaning verification step. The contractors were instructed in how to perform cleaning verification. They independently determined whether particular cloths matched or were lighter than the cleaning verification card. In most renovations not involving the practices that EPA is prohibiting in this rule, i.e., power planing (power sanding) and high temperature heat guns, cleaning verification in combination with the other work practices were effective at reducing dust lead levels on surfaces to or below the dust lead hazard standards, regardless of the condition of the floor. Cleaning verification, as well as the other components of the work practices being finalized today were not effective when high dust generation practices such as power planing (including power sanding) and high temperature heat guns were used. These practices, as well as torching, are being prohibited in this rulemaking. Thus, EPA, in its determination on the effectiveness of cleaning verification, is focusing on the results of the experiments in the Dust Study that did not involve these prohibited practices.

Of the 10 experiments in which the proposed rule practices were used and in which the practices being prohibited in this final rule were not used, all final lead-based paint dust levels were at or below the regulatory hazard standard (taking into account the accepted level of uncertainty, i.e., within plus or minus 20%, which is the performance criteria for the National Lead Laboratory Accreditation Program). In fact, four experiments resulted in levels that were less than 10 μg/ft², three resulted in levels less than 30 μg/ft², and three resulted in levels that were approximately 40 μg/ft² (all were well within the level of uncertainty for this value). In four of the experiments, at least one floor area failed verification on the first wet disposable cleaning cloth, all passed on the second wet cloth. In one of the experiments, a windowsill failed the first wet cloth, but passed the second. These results were seen on floors in a variety of conditions, including good, fair and poor conditions. As a general case, in the other experiments that did not follow all the proposed work practices, the use of cleaning verification after cleaning (both baseline cleaning and cleaning following the proposed work practices) reduced, often significantly, the amount of lead dust remaining.

EPA agrees with commenters that cleaning verification should not be used for clearance. However, while cleaning verification is not clearance testing, as described above the use of cleaning verification consistently resulted in levels of lead-based paint dust at or below the hazard standard Also, the use of cleaning verification consistently resulted in lower levels of lead-based paint dust than remained after all types of cleaning studied when only followed by visual inspection. There is sufficient consistency in the data to support the use of cleaning verification as an effective component of the work practices being finalized today.

In response to the comment that the Disposable Cleaning Cloth Study used professional inspectors or other highly trained individuals following specified protocols, EPA intends to include cleaning verification in its training course for renovators and will use the results of the Dust Study and the Agency's observations on the experience of the contractors in the study in its development of this course.

vi. *Subjectivity of cleaning verification.* Many commenters objected to the ''white glove'' standard as inherently subjective, and doubted whether it would be protective. The commenters were concerned that the effectiveness of cleaning verification relies upon a renovation worker's understanding and application of the protocol, ability to define the floor sampling area or areas, and use of the cleaning verification card to determine whether a surface has been adequately cleaned. One commenter contended that, based on its experience as a sub-contractor to EPA on the Disposable Cleaning Cloth Study, making the visual pass/fail determination can be quite subjective and open to interpretation. The commenter believes that it may be unrealistic to expect that renovation workers will consistently make the proper decision using the proposed verification card. Some commenters speculated that the renovator's accuracy in comparing the cleaning cloth to the verification card could depend on factors such as the renovator's visual acuity, the lighting in the room, or simply differences in judgment among renovators. Another commenter thought that the lack of corrections for surface conditions, the experience of the person conducting the visual assessment, or pre-existing conditions might bias the results of testing.

EPA agrees that visual comparison of a cleaning cloth to a cleaning verification card has an element of subjectivity because the visual comparison of cloth to card requires some exercise of judgment on the part of the person doing the comparing.

However, this does not necessarily mean that the comparison is suspect. As previously stated, the Dust Study represents a real-world test of the ability of renovators to learn how to do cleaning verification and to apply it in the field. Although one participant in the Dust Study expressed concern about the subjectivity of the test, the fact remains that cleaning verification was successfully performed by the renovation contractors in all of the experiments involving the work practices being finalized in this final rule (excluding those involving power planing (power sanding) and high temperature heat guns) and was predictive of whether renovators had cleaned-up the lead-based paint hazards created during the renovation activity to the dust-lead standard, particularly when the proposed work practices were used. These cleaning verifications were conducted by various persons in various light conditions and on various surface conditions. Further, EPA notes that cleaning verification is not simply qualitative clearance. Unlike the sampling for dust clearance testing, the cleaning verification involves a cleaning component. The act of doing the cleaning verification has been shown to lower, often significantly, the dust lead levels. Finally, in the development of its training course for contractors, EPA plans to use its data on the contractors' use of cleaning verification in the Dust Study, including their use of the cleaning verification cards.

vii. *Cost of cleaning verification.* Some commenters were concerned that the cleaning verification protocols are too impractical, burdensome, or time-consuming for many contractors to perform. However, the Dust Study found that cleaning verification only took, on average, slightly less than 13 minutes for experiments where the proposed rule requirements were followed. EPA's Final Economic Analysis estimates that the average cost of cleaning verification ranges from less than $10 to $30 in residences, and in public and commercial building COFs it ranges from less than $10 to less than $50.

viii. *Availability of cleaning verification card.* One commenter asked about the availability of the cleaning verification card, specifically, who would produce them, where would they be available, and how often do they need to be replaced. EPA intends to produce the cleaning verification cards and to make them available at accredited renovator training courses and upon request from the National Lead Information Center.

ix. *Third-parties.* Several commenters argued that a third party should perform cleaning verification (or visual inspection, in the case of exterior jobs) rather than the certified renovator. Commenters saw a conflict of interest, since by performing the cleaning verification the certified renovator is evaluating the effectiveness of his or her own work. Some thought the subjective nature of the method left it open to misinterpretation or fraud. Commenters were concerned that given the competitive pressures of the renovation industry and lack of independent oversight, it was not realistic to expect all renovators to follow the cleaning verification protocol in good faith. Others worried that a renovator might feel pressured to produce a passing result, perhaps to the point of recording false results. One commenter stated that those who would not comply with the cleaning procedure are unlikely to comply with cleaning verification.

Again, as described above, EPA addressed potential conflicts-of-interest in its lead-based paint program in the preamble to the final Lead-based Paint Activities Regulations. That discussion outlined two reasons for not requiring that inspections or risk assessments, abatements, and post-abatement clearance testing all be performed by different entities. The first was the cost savings and convenience of being able to hire just one firm to perform all necessary lead-based paint activities. The second was the potential regional scarcity of firms to perform the work. EPA believes that these considerations may be equally applicable to renovations, and perhaps more compelling, given the objective of keeping this rule simple and relatively inexpensive. EPA is concerned that a requirement that contractors engage a third party for every renovation job will add undue complication and expense to home renovations, and that it could delay completion of renovation jobs. There are estimated to be 8.4 million renovation events annually. Moreover, as stated above, it is not uncommon for regulated entities to make determinations relating to their regulated status. Thus, after weighing these competing considerations, EPA has decided to take an approach that is consistent with the approach taken in the 402(a) Lead-based Paint Activities Regulation and not require third party visual inspections, testing, or cleaning verification.

x. *Relationship between cleaning verification and the regulatory lead-based paint hazard standards.* Some commenters contend that cleaning verification is not protective because it was designed to pass based on the regulatory hazard standard for floors. These commenters contend that this level is too high to be protective and that continuing to use this level is unwarranted given more recent data that demonstrates that lead causes neurocognitive effects at levels much lower than 10 μg/dL, the current CDC blood lead level of concern which was used in establishing the regulatory hazard standards.

EPA interprets the statutory directive to take into account safety when promulgating work practice standards as meaning that such work practice standards should be established in relation to lead-based paint hazards—as identified pursuant to TSCA section 403. There is no level of lead exposure that can yet be clearly identified, with confidence, as clearly not being associated with potentially increased risk of deleterious health effects. EPA does not believe the intent of Congress was to require elimination of all possible risk arising from a renovation, nor is EPA aware of a method that could reliably and effectively accomplish this. Given that the hazard standards are the trigger for regulation under section 402(c)(3) and that they are set through rulemaking, EPA has concluded that it makes most sense to use the same standards as the target level for safe work practices. Otherwise, the potential is created for a scheme under which any renovation activities found not to create hazards are not regulated at all, whereas renovation activities found to create hazards trigger requirements designed to leave the renovation site cleaner than the unregulated renovations. Given the Congressional intent that the section 403 hazard standards apply for purposes of subchapter IV of TSCA, EPA is applying them as the target level for safe work practices, which include the cleaning verification process, in this rule.

8. *Consistency with HUD.* Several commenters recommended that EPA adopt HUD's clearance requirement for activities other than abatement, which some commenters noted has been successfully implemented in projects in federally assisted housing. One pointed out that renovators have accepted HUD's clearance testing protocol, and implementing the ''white glove'' method will cause confusion in the industry and give contractors a reason for not following lead-safe work practices. A commenter recommended that EPA adopt HUD's standard for exterior clearance of visual inspection of the work area and a soil test. Commenters expressed concern that the final rule could undermine more stringent State

and local standards, and asked EPA to make clear that more stringent state and local requirements for clearance would apply despite the lack of mandatory clearance in the final rule.

This final regulation does not supersede more stringent or different requirements for interim control projects or renovations regulated by HUD, the States, or local jurisdictions. Renovation firms are still responsible for complying with all applicable Federal, State, or local laws when conducting renovations. In some cases, this may mean that dust clearance testing must be performed at the conclusion of a renovation rather than cleaning verification. EPA believes that renovation firms will be able to integrate these new requirements into their existing business practices with very little difficulty.

EPA also notes that the scope of the housing covered by HUD is different than the scope covered by this final rule. As noted by the commenter, HUD covers activities in projects in federally assisted housing. The occupancy patterns, including turn-over, will be different than in the general population covered by this final rule. While there is some overlap, there are substantial differences. Thus, EPA believes that total consistency with HUD is not needed.

9. *Optional use of clearance*. In the 2006 Proposal, EPA proposed to allow optional dust clearance sampling at the completion of renovation activities instead of the post-renovation cleaning verification described in § 745.85(b). Some commenters agreed that the decision whether to perform clearance at the conclusion of the job should be left to the homeowner. One commenter asked EPA to require that, if a resident arranged for clearance testing and found lead hazards, the contractor would have to re-clean to the resident's satisfaction.

As discussed, dust clearance sampling and cleaning verification are not surrogates and EPA is not requiring renovation firms to perform an abatement, i.e., eliminate all lead-based paint hazards, as part of a renovation. The Dust Study demonstrated that cleaning verification is quite often needed to minimize exposure to dust-lead hazards created during renovations. EPA is concerned that if dust clearance sampling were allowed instead of cleaning verification, without an accompanying requirement that the renovation firm re-clean until clearance is achieved, the rule would actually be less protective because the surfaces in the work area could be left less clean than if cleaning verification were performed.

In response to these comments, EPA has further considered the issue and decided to allow dust clearance sampling instead of cleaning verification only in certain limited situations. EPA agrees with the commenters that, if the rule were to allow clearance sampling instead of verification, EPA would have to require the renovator to achieve clearance, otherwise, there would be no check on whether the renovation had been safely performed. HUD's Lead Safe Housing Rule requires clearance to be achieved in many situations, as do several States. For example, the State of New Jersey requires dust clearance sampling and clearance in certain situations in multi-unit rental housing.As noted in Unit III.G. of this preamble, States, Territories, and Tribes may choose to have as protective as or more protective requirements than this final rule. One example of a more protective requirement would be a requirement to perform dust clearance testing and achieve clearance after renovations. Another example may be requiring that trained renovation workers demonstrate achievement of clearance levels by other cleaning verification methods, such as using newer technologies. If a firm can demonstrate, for example, using data obtained in the field, that it regularly meets the clearance standards without using the EPA specified approach but rather by using newer technology or alternative methods, a State may request that EPA evaluate such a provision as being as protective as or more protective than the methods described in this final rule.

Therefore, in situations where the contract between the renovation firm and the property owner or another regulation, such as HUD's Lead-Safe Housing Rule or a state regulation, requires dust clearance sampling by a properly qualified person and requires the certified renovator or a worker under the direction of the certified renovator to re-clean until clearance is achieved, EPA will allow the renovation firm to use both dust clearance testing and clearance instead of the cleaning verification step.

Property owners in other situations may still choose to perform dust testing at any time, such as after a renovation, including cleaning verification, has been completed. EPA recommends that property owners who choose to have dust testing performed use certified dust sampling professionals such as inspectors, risk assessors, or dust sampling technicians. EPA also recommends that property owners who wish to have dust testing performed after a renovation reach an agreement with the renovation firm up front as to what will happen based on the results of the dust testing, such as whether additional cleaning will be performed if the surfaces do not achieve the clearance standards in 40 CFR 745.227(e)(8)(viii).

F. Recordkeeping for Renovation Firms

1. *Recordkeeping*—a. *Pre-renovation education.* 40 CFR 745.86 already requires that persons performing renovations in target housing document compliance with the lead hazard information distribution provisions of the Pre-Renovation Education Rule. Consistent with the 2006 Proposal, this final rule deletes existing 40 CFR 745.88 because it contains only sample acknowledgment statements for the purpose of documenting compliance with the information distribution requirements and is thus unnecessary. EPA received no comments on this proposed deletion. In addition, EPA received no substantive comments on the sample acknowledgment form provided with the proposed rule. New sample acknowledgment forms incorporating language consistent with this final rule and reflecting commenter editorial suggestions are available on EPA's website at *http://www.epa.gov/lead* and from the National Lead Information Center at 1-(800)-424-LEAD (5323).

In addition, as proposed in the 2006 Proposal, EPA has modified paragraph (a) of 40 CFR 745.86 to make compliance with the recordkeeping requirements the responsibility of the renovation firm, not the certified renovator. Although, as discussed below, this final rule requires the certified renovator assigned to a renovation to certify compliance with the work practice requirements for that renovation, the renovation firm may choose to delegate other tasks associated with recordkeeping requirements to someone other than a certified renovator. For example, this rule does not require a certified renovator to distribute lead hazard information to owners and occupants before a renovation, nor does it require a certified renovator to obtain the necessary acknowledgment statements or certified mail receipts. The renovation firm may decide that it is more efficient to have someone other than the certified renovator perform these tasks.

As described in Unit III.B.2. of this preamble, this final rule expands the information distribution requirements to renovations in child-occupied facilities. In proposing this expansion, the 2007 Supplemental Proposal included

associated recordkeeping requirements for firms performing renovations in child-occupied facilities. Although EPA did receive comments on extending the information distribution requirements to child-occupied facilities, none of these comments specifically addressed the recordkeeping provisions themselves. EPA has determined that the recordkeeping requirements are an important part of monitoring compliance with and ensuring the effectiveness of the information distribution provisions of this rule. Therefore, this final rule retains the existing recordkeeping requirements for pre-renovation lead hazard information distribution in target housing and extends those recordkeeping requirements to renovations in child-occupied facilities. Firms performing renovations in target housing or child-occupied facilities must obtain and retain signed and dated acknowledgements of receipt of the lead hazard information from building owners or a certificate of mailing for such information. In addition, renovation firms must obtain and retain signed and dated acknowledgments of receipt from the occupant (the resident of the housing unit being renovated or the proprietor of the child-occupied facility) or certificates of mailing for such information, or the firm must prepare a certification that documents the attempts made to provide this information to the occupants. For renovations in common areas in target housing, the firm must also document the steps taken to provide information to the tenants with access to the common area being renovated. Finally, firms performing renovations in child-occupied facilities must take steps to provide information to the parents and guardians of children under age 6 using the facility. Firms may do this by either mailing each parent or guardian the lead hazard information pamphlet and a general description of the renovation or by posting informational signs where parents and guardians are likely to see them. Informational signs must be accompanied by a posted copy of the pamphlet or information on how to obtain the pamphlet at no charge to interested parents or guardians. The firm's activities with respect to parents and guardians must also be documented.

b. *Documentation of compliance with other regulatory provisions.* This final rule provides for a number of exceptions. Unit III.A.3. of this preamble describes an exception for renovations in owner-occupied target housing that is neither the residence of a child under age 6 or apregnant woman, nor a child-occupied facility. In order for a renovation to be eligible for this exception, the renovation firm must obtain a signed statement from the owner of the housing to the effect that he or she is the owner of the housing to be renovated, that he or she resides in the housing to be renovated, that no child under 6 or no pregnant woman resides there, that the housing is not a child-occupied facility, and that the owner acknowledges that the work practices to be used during the renovation will not necessarily include all of the work practices contained in EPA's renovation, repair, and painting rule. Consistent with the 2006 Proposal and the 2007 Supplemental Proposal, this final rule requires renovation firms to maintain this signed statement, which must include the address of the housing being renovated, for 3 years after the completion of the renovation. Again, although EPA received comments on the merits of this exception, no comments were directed specifically to the recordkeeping requirement. EPA has determined that the recordkeeping requirement is necessary to allow EPA to monitor compliance with the terms of this exception.

This final rule also requires firms performing renovations to retain documentation of compliance with the work practices and other requirements of the rule. Specifically, the firm must document that a certified renovator was assigned to the project, that the certified renovator provided on-the-job training for workers used on the project, that the certified renovator performed or directed workers who performed the tasks required by this final rule, and that the certified renovator performed the post-renovation cleaning verification. This documentation must include a copy of the certified renovator's training certificate. Finally, the documentation must include a certification by the certified renovator that the work practices were followed with narration as applicable. The certification must include the specific information listed in § 745.86(b)(7). The firm must keep this information for 3 years after the completion of the renovation.

The 2006 Proposal also included a requirement that renovation firms maintain documentation of compliance with the renovator and worker training requirements and the work practice requirements. This documentation would have had to include signed and dated descriptions of how activities performed by the certified renovator were conducted in compliance with the proposed requirements. To demonstrate how these recordkeeping requirements might be met, EPA prepared and placed into the docket a draft recordkeeping checklist.

EPA received many comments on the substance of these recordkeeping requirements and on the draft recordkeeping checklist. Some commenters thought that the purpose of the recordkeeping requirement should be to provide important information to consumers or to serve as part of the record of whether a particular structure was lead-safe. Some, but not all of these commenters suggested that there was no need for the renovation firm to retain the records it prepares. Rather, the records should be given to the owners and occupants of the building either before or after the renovation. However, as proposed, the recordkeeping requirement served two purposes. The first is to allow EPA or an authorized State to review a renovation firm's compliance with the substantive requirements of the regulation through reviewing the records maintained for all of the renovation jobs the firm has done. The second is to remind a renovation firm what it must do to comply. EPA envisioned that renovation firms would use the recordkeeping requirements and checklist as an aid to make sure that they have done everything that they are required to do for a particular renovation. For these two purposes, there is no substitute for recordkeeping by renovation firms.

However, EPA agrees with those commenters that felt that the recordkeeping requirements were vague, particularly in light of the draft recordkeeping checklist itself and the amount of time that EPA estimated it would take a renovation firm to complete the checklist. Many commenters said that it was unclear how much detail EPA would be looking for in descriptions of how the firm complied with the various work practices, and some noted that an extensive narrative would contribute no more to compliance or enforcement than a box checked to indicate that the requirements had been complied with.

In response to these commenters, EPA has revised that draft recordkeeping checklist to be more in the nature of a checklist, with a certification that the representations on the form are true and correct. Narrative information is still required where necessary, such as an identification of the brand of test kits used, the locations where they were used, and the results. EPA has also revised the regulatory text to describe the specific information that must be provided and the specific items for which a certification of compliance is

required. The regulatory text at 40 CFR 745.86(b)(7) now contains a list of work practice elements that must be certified as having been performed. In response to two commenters that suggested that the only person truly capable of certifying that the lead-safe work practices were followed on a particular job would be the certified renovator assigned to that job, EPA is requiring the certification to be completed by the certified renovator assigned to the renovation. EPA has determined that a review of the records maintained by renovation firms will be an effective method of determining whether a particular firm is generally complying with the regulations or not.

2. *Notification to EPA*. In the 2006 Proposal, EPA requested comment on, but did not propose, a requirement that renovation firms notify EPA before beginning a covered renovation project. Most commenters supported a notification requirement, arguing notifications would provide information to EPA about where renovation activities will be occuring, so EPA could inspect ongoing renovation projects for compliance with the requirements of this rule. These commenters stated that EPA would be unable to enforce the requirements of the rule without a notification provision. Some commenters also suggested that the act of informing EPA of their activities provides a powerful incentive for renovation firms to comply. Other commenters observed that prior notification for every covered renovation would be too burdensome for the regulated community and for the Agency. Some of these commenters suggested that notifications only be required for renovations involving high-risk methods, housing where a child under age 6 or a pregnant woman resides, or renovations involving multiple rooms in a housing unit.

This final rule does not include a prior notification requirement. EPA disagrees with the notion that there is no way to enforce this regulation without a prior notification requirement. As stated above in the discussion on recordkeeping, EPA believes that a review of a renovation firm's records will demonstrate whether or not a renovation firm generally complies with the regulations. In addition, as at least one commenter noted, many renovations require a building permit from the local permitting authority. EPA can work with the local authorities to identify inspection targets. EPA can also follow up on tips and complaints.

EPA agrees with those commenters that believe that prior notification for every project is simply too burdensome for the regulated community and for the Agency. If the streamlined, telephone-based system recommended by some of the commenters were implemented, it would reduce the initial burden on the renovation firms. However, EPA would still have to process millions of such notifications annually, and the collective burden on renovation firms and the government would be considerable. Rather than require millions of notifications annually, the great majority of which would never be reviewed, EPA prefers to use other methods for targeting renovation projects for inspections.

An initially attractive option considered by EPA was a prior notification requirement for a subset of covered renovation projects. This option could potentially reduce the notifications received to a manageable level, while preserving the benefits of a prior notification requirement, but EPA was unable to develop appropriate criteria for defining which renovations would require prior notification. EPA considered requiring prior notification for renovations using certain high-risk practices, the practices prohibited by the HUD Lead Safe Housing Rule and EPA's Lead-based Paint Activities Regulations. However, EPA ultimately decided, as described in Unit III.E.6. of this preamble, to prohibit most of those practices for covered renovations. Requiring prior notifications only for renovations in housing where a child under age 6 resides and in child-occupied facilities would not significantly reduce the notifications that would be required. EPA determined that a prior notification requirement tied to project size would not be feasible or effective, because the hazard potential from a renovation job is a combination of the size of the project and the activity being performed.

With regard to the compliance mindset mentioned by some commenters, EPA believes that the recordkeeping requirements are a less burdensome way to achieve the same goal. In fact, a prior notification requirement could lead to EPA targeting for inspection those persons who are most likely to be making an effort to comply with the substantive requirements of the regulation. The person who would not bother to comply with the substantive provisions of this rule would most likely avoid filing a prior notification to EPA before beginning a covered renovation, repair, or painting project. These persons are more likely to be performing renovations in a non-compliant manner than are persons who have complied with a prior notification requirement and told EPA where to find them.

EPA has therefore determined that a prior notification requirement is not an effective or efficient means of facilitating the monitoring of compliance with this regulation. States, Territories, and Tribes developing their own renovation, repair, and painting programs may come to a different conclusion. These jurisdictions are free to establish prior notification schemes that make sense for their community.

G. State, Territorial, and Tribal Programs

1. *In general*. Because of the enormous number of renovation activities that occur in this country on an annual basis, EPA welcomes the help of its State, Territorial, and Tribal partners to ensure that these renovations are performed by trained persons in accordance with this final rule. This final rule establishes, in accordance with TSCA section 404 and EPA's Policy for the Administration of Environmental Programs on Indian Reservations (Ref. 46), requirements for the authorization of State, Territorial, and Tribal renovation, repair, and painting programs. The process for obtaining authorization to operate these programs in lieu of the Federal program is the same process used to authorize State, Territorial, and Tribal lead-Based Paint Activity or Pre-Renovation Education programs found in 40 CFR part 745, subpart Q.

Interested States, Territories, and Indian Tribes may apply for, and receive authorization to, administer and enforce all of the elements of the new subpart E, as amended. States, Territories and Tribes may choose to administer and enforce just the existing requirements of subpart E, the pre-renovation education elements, or all of the requirements of the proposed subpart E, as amended. The 2006 Proposal and the 2007 Supplemental Proposal would not have provided for the authorization of State, Territorial, or Tribal programs that include only the training, certification, accreditation, and work practice requirements for renovation, repair, and painting programs and not the pre-renovation education provisions of subpart E. EPA proposed this approach because the Agency believes that the pre-renovation education provisions are an integral part of ensuring that consumers have the information they need to make informed decisions about renovation practices in their homes and other buildings. In addition, consistent with the proposals, this final rule encourage renovation firms to use the existing pamphlet acknowledgment

process to provide owner-occupants of target housing with the opportunity to opt out of the training, certification, and work practice requirements of the rule if they reside in the housing to be renovated, there is no child under age 6 orpregnant woman in residence, the housing does not otherwise meet the definition of child-occupied facility, and the owner acknowledges that the work practices to be used during the renovation will not necessarily include all of the lead-safe work practices contained in EPA's renovation, repair, and painting rule.

One State commenter disagreed with EPA's proposed approach and requested that EPA authorize State, Territorial or Tribal programs that incorporate only the training, certification, accreditation, and work practices of this final rule because TSCA section 404 allows states to administer and enforce the standards, regulations, or other requirements established under TSCA section 402 or TSCA section 406 or both. EPA agrees with this commenter's reading of TSCA. Therefore, this final rule provides for the authorization of State, Territorial, or Tribal programs that include either the pre-renovation education requirements of 40 CFR part 745, subpart E, or the training, certification, accreditation and work practice requirements of this rule, or both.

States, Territories, and Tribes that wish to administer and enforce the pre-renovation education provisions of subpart E, as amended, must include both target housing and child-occupied facilities within the scope of their program. Similarly, States, Territories, and Tribes that are also interested in obtaining authorization to administer and enforce the training, certification, accreditation, work practice, and recordkeeping elements of subpart E, as amended, must include both target housing and child-occupied facilities within the scope of their program. States with existing authorized pre-renovation education programs are required to demonstrate that they have modified their programs to include child-occupied facilities. These States must provide this demonstration no later than the first report submitted pursuant to 40 CFR 745.324(h) on or after April 22, 2009.

2. *Process*. The authorization process currently codified at 40 CFR part 745, subpart Q, will be used for the purpose of authorizing State, Territorial, and Tribal renovation, repair, and painting programs. States, Territories, and Tribes seeking authority for their programs must obtain public input, then submit an application to EPA. Applications must contain a number of items, including a description of the State, Territorial, or Tribal program, copies of all applicable statutes, regulations, and standards, and a certification by the State Attorney General, Tribal Counsel, or an equivalent official, that the applicable legislation and regulations provide adequate legal authority to administer and enforce the program. The program description must demonstrate that the State, Territorial, or Tribal program is at least as protective as the Federal program. In this case, the Federal program consists of the requirements for training, certification, and accreditation and the work practice standards of this final rule.

One commenter suggested that EPA require States with a currently authorized TSCA 402(a) lead-based paint activities program to submit only an amended application for incorporating the TSCA section 402(c)(3) renovation, repair, and painting program requirements since many of the required documents would be the same as those submitted for the original TSCA 402(a) application. Furthermore, the commenter recommended that a letter from the State agency identified in the original 402(a) authorization application with a synopsis detailing how the State proposes to administer and enforce the renovation, repair, and painting program serve as an amended application. EPA has determined that a new application for authorization for the renovation, repair, and painting program is necessary because there may be a different State agency or consortia of agencies implementing and enforcing this program, a long time may have elapsed since most States submitted their TSCA section 402(a) program application, and many of the requirements within the elements of the renovation, repair, and painting program differ from their counterparts in the lead-based paint activities program.

To be eligible for authorization to administer and enforce the training, certification, accreditation, and work practice requirements of this final rule, State, Territorial, and Tribal renovation programs must contain certain minimum elements, e.g., work practice standards and procedures and requirements for the certification of individuals and/or firms, that are very similar to the existing minimum elements specified in 40 CFR 745.326(a) for lead-based paint activities programs. In order to be authorized, State, Territorial, or Tribal programs must have procedures and requirements for the accreditation of training programs, which can be as simple as procedures for accepting training provided by an EPA-accredited provider, or a provider accredited by another authorized State, Territorial, or Tribal program. Procedures and requirements for the certification of renovators are also necessary. At a minimum, these must include a requirement that certified renovators have taken accredited training, and procedures and requirements for re-certification. State, Territorial, and Tribal programs applying for authorization must also include work practice standards for renovations that ensure that renovations are conducted only by certified renovation firms and the renovations are conducted using work practices at least as protective as those of the Federal program. As is the current practice with lead-based paint activities, EPA will not require State, Territorial, or Tribal programs to certify both firms and individuals that perform renovations. States, Territories and Tribes may choose to certify either firms or individuals, so long as the individuals that perform the duties of renovators are required to take accredited training.

3. *Implementation*. In order to provide interested States, Territories and Tribes time to develop, or begin developing renovation, repair, and painting programs in accordance with this rule, EPA will not begin to actively implement the Federal program until April 22, 2009, at which time EPA will begin accepting applications for training program accreditation. Several commenters thought 1 year would be adequate for the purpose of allowing States, Territories, and Tribes to develop their own programs, while others expressed concern that 1 year would not be enough time to get these programs developed and authorized. Most commenters who expressed an opinion on this topic generally agreed that an implementation delay is necessary. Reasons given in support of a delay were conservation of State financial and administrative resources and the fact that some States have had difficulties in retraining contractors to new State-specific requirements after the contractors had become accustomed to working under the Federal program. In contrast, some commenters argued that, in light of the 2010 goal, no delay whatsoever was warranted. This final rule retains the 1 year implementation delay set forth in the 2006 Proposal. EPA has determined that this period of time represents an appropriate balance between the need to implement this rule quickly and concerns over potential duplication of effort and additional

costs incurred by the regulated community if EPA begins accrediting training providers and certifying firms in jurisdictions that are also working towards implementing their own programs. States, Territories, and Tribes may begin the authorization process at any time after the effective date of this final rule, even after the Federal program has been implemented in their jurisdiction.

Some commenters were concerned about the effect of this rule on existing State programs. Several commenters asked EPA to expressly state that this rule does not pre-empt existing State programs and that State programs that are more stringent than the Federal program will be eligible for authorization. One commenter noted that the number of houses with lead contaminated paint is disproportionately distributed throughout the U.S. This commenter pointed out that this apparent disparity supports the need for State control of lead programs and for EPA to practice ''regulatory restraint.'' According to this commenter, this ''regulatory restraint'' will allow States with more severe lead paint problems to impose stricter standards and requirements regarding certification and work practices without imposing unnecessary burdens on States with less severe problems.

This final rule does not preempt existing programs that address renovations. However, to the extent that these programs are less protective than the requirements of this final rule, the requirements of this final rule will apply. To be eligible for authorization, State, Territorial, and Tribal programs need not exactly duplicate the Federal program contained in this final rule, but they must still meet the requirement of TSCA section 404 that they be ''at least as protective as'' the Federal program. It would be difficult for the Agency to describe specific requirements that would make a program more or less ''protective.'' EPA will review each program application separately against the protections provided by this final rule.

Several commenters expressed concern regarding the uniformity and consistency of State programs. Some recommended that EPA take States' concerns into account, but guarantee uniformity of State programs by prohibiting States from arbitrarily deviating from program elements. Others noted that if there are uniform regulations for approved training courses for State certification, there should be reciprocity between States since many people work in multiple States. One commenter suggested that, in an effort to promote consistency, States institute a lead-safety test that renovators must pass prior to receiving permits to conduct work. Several commenters noted that a lack of reciprocity between States and/or duplicative or divergent certification requirements will add an unnecessary burden and level of complexity for renovation and remodeling firms, especially those working in multi-State areas. One commenter argued that this could lead to a problem in maintaining certifications similar to the problem the commenter believes exists in maintaining lead-based paint inspector, risk assessor, and other certifications associated with TSCA section 402 abatements. One suggested that EPA should exert control over the right to refuse approval of State programs unless they provide for reciprocity with the Federal program and programs of other jurisdictions approved by EPA.

The standard of EPA review for State, Territorial, and Tribal programs under TSCA section 404 is that they be ''at least as protective'' as the Federal program. In addition, TSCA section 404 (e) reserves the right of States and their political subdivisions to impose requirements that are more stringent than the Federal program. EPA interprets this to mean that EPA cannot compel States, Territories, and Tribes to adopt programs identical to the Federal program or to establish reciprocity provisions. However, EPA continues to encourage States, Territories, and Tribes that may be considering establishing their own renovation programs to keep reciprocity in mind as they move forward. The benefits to be derived from reciprocity arrangements with the Federal program and other authorized jurisdictions include potential cost-savings from reducing duplicative activity and the development of a professional renovation workforce more quickly, thus providing maximum flexibility to State, Territorial, or Tribal residents. In addition, the Agency encourages States, Territories and Tribes to consider the use of existing certification and accreditation procedures as they develop their programs. These existing programs need not be limited to lead-based paint. For example, a State may choose to add lead-safe renovation requirements to their existing contractor licensing programs.

H. Effective Date and Implementation Dates

This final rule is effective on June 23, 2008. This final rule will be implemented according to the following schedule:

1. As of June 23, 2008.

a. States, Territories, and Tribes may begin applying for authorization to administer and enforce their own renovation, repair, and painting programs. EPA will begin authorizing States, Territories, and Tribes as soon as it receives their complete applications.

b. No training program may provide, offer, or claim to provide training or refresher training for EPA certification as a renovator or a dust sampling technician without accreditation from EPA under 40 CFR 745.225.

2. As of April 22, 2009. Training programs for renovators or dust sampling technicians may begin applying for accreditation under 40 CFR 745.225. EPA will begin accrediting training programs as soon as it receives complete applications from training providers. Individuals who wish to become certified renovators or dust sampling technicians may begin taking accredited training as soon as it is available.

3. As of October 22, 2009. Renovation firms may begin applying for certification under 40 CFR 745.89. EPA will begin certifying renovation firms as soon as it receives their complete applications.

4. As of April 22, 2010. The rule will be fully implemented.

a. No firm may perform, offer, or claim to perform renovations without certification from EPA under 40 CFR 745.89 in target housing or child-occupied facilities, unless, in the case of owner-occupied target housing, the firm has obtained a statement signed by the owner that the renovation will occur in the owner's residence, no child under age 6 resides there, the housing is not a child-occupied facility, and the owner acknowledges that the work practices to be used during the renovation will not necessarily include all of the lead-safe work practices contained in EPA's renovation, repair, and painting rule.

b. All renovations must be directed by renovators certified in accordance with 40 CFR 745.90(a) and performed by certified renovators or individuals trained in accordance with 40 CFR 745.90(b)(2) in target housing or child-occupied facilities, unless, in the case of owner-occupied target housing, the firm performing the renovation has obtained a statement signed by the owner that the renovation will occur in the owner's residence, no child under age 6 resides there, the housing is not a child-occupied facility, and the owner acknowledges that the work practices to be used during the renovation will not necessarily include all of the lead-safe work practices contained in EPA's renovation, repair, and painting rule.

c. All renovations must be performed in accordance with the work practice standards in 40 CFR 745.85 and the associated recordkeeping requirements in 40 CFR 745.86(b)(6) and (b)(7) in target housing or child-occupied facilities, unless, in the case of owner-occupied target housing, the firm performing the renovation has obtained a statement signed by the owner that the renovation will occur in the owner's residence, no child under age 6 resides there, the housing is not a child-occupied facility, and the owner acknowledges that the work practices to be used during the renovation will not necessarily include all of the lead-safe work practices contained in EPA's renovation, repair, and painting rule.

With respect to the new renovation-specific pamphlet and the requirements of the Pre-Renovation Education Rule, as of the effective date of the rule June 23, 2008, renovators or renovation firms performing renovations in States and Indian Tribal areas without an authorized Pre-Renovation Education Rule program may provide owners and occupants with either of the following EPA pamphlets: *Protect Your Family From Lead in Your Home*; or *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools*. As of December 22, 2008, Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools must be used exclusively.

IV. References

The following is a list of the documents that are specifically referenced in this final rule and placed in the public docket that was established under Docket ID number EPA–HQ–OPPT–2005–0049. For information on accessing the docket, refer to the **ADDRESSES** unit at the beginning of this document.

1. U.S. Environmental Protection Agency (USEPA). Air Quality Criteria for Lead (September 29, 2006).

2. President's Task Force on Environmental Health Risks and Safety Risks to Children. Eliminating Childhood Lead Poisoning: A Federal Strategy Targeting Lead Paint Hazards (February 2000).

3. USEPA. Lead; Renovation, Repair, and Painting Program; Proposed Rule. **Federal Register** (71 FR 1588, January 10, 2006).

4. USEPA. Lead; Requirements for Lead-based Paint Activities; Final Rule. **Federal Register** (61 FR 45778, August 29, 1996).

5. USEPA. Lead; Fees for Accreditation of Training Programs and Certification of Lead-based Paint Activities Contractors; Final Rule. **Federal Register** (64 FR 31091, June 9, 1999).

6. USEPA. Lead; Notification Requirements for Lead-Based Paint Abatement Activities and Training; Final Rule. **Federal Register** (69 FR 18489, April 8, 2004).

7. USEPA, Consumer Product Safety Commission (CPSC), U.S. Department of Housing and Urban Development (HUD). Protect Your Family From Lead in Your Home (EPA 747-K-99-001, June 2003).

8. USEPA. Lead; Requirements for Hazard Education Before Renovation of Target Housing; Final Rule. **Federal Register** (63 FR 29907, June 1, 1998).

9. USEPA. Lead; Identification of Dangerous Levels of Lead; Final Rule. **Federal Register** (66 FR 1206, January 5, 2001).

10. USEPA. Reducing Lead Hazards When Remodeling Your Home (EPA747-K-97-001, September 1997).

11. USEPA. Lead Exposure Associated With Renovation and Remodeling Activities: Phase I, Environmental Field Sampling Study (EPA 747-R-96-007, May 1997).

12. USEPA. Lead Exposure Associated With Renovation and Remodeling Activities: Phase II, Worker Characterization and Blood-Lead Study (EPA 747-R-96-006, May 1997).

13. USEPA. Lead Exposure Associated With Renovation and Remodeling Activities: Phase III, Wisconsin Childhood Blood-Lead Study (EPA 747-R-99-002, March 1999).

14. USEPA. Lead Exposure Associated With Renovation and Remodeling Activities: Phase IV, Worker Characterization and Blood-Lead Study of R&R Workers Who Specialize in Renovation of Old or Historic Homes (EPA 747-R-99-001, March 1999).

15. USEPA. Lead; Renovation, Repair, and Painting Program; Supplemental Notice of Proposed Rulemaking. **Federal Register** (72 FR 31022, June 5, 2007).

16. USEPA. Lead; Renovation, Repair, and Painting Program; Notice of Availability. **Federal Register** (72 FR 12582, March 16, 2007).

17. USEPA. Characterization of Dust Lead Levels After Renovation, Repair, And Painting Activities. (November 13, 2007).

18. USEPA. Lead Safety for Remodeling, Repair, And Painting. Joint EPA/HUD Renovation Training Curriculum (EPA 747-B-03-001/2, July 2003).

19. National Association of Home Builders (NAHB). Lead Safe Work Practices Survey Project Report. Prepared by Atrium Environmental Health and Safety Services (November 9, 2006).

20. McMillan Associates. Response to SBREFA Panel Recommendations for Further Analysis of Existing Phase III Data (August 6, 2001).

21. U.S. Department of Health and Human Services (HHS), U.S. Public Health Service (PHS), CDC. Children with Elevated Blood Lead Levels Attributed to Home Renovation and Remolding Activities--New York, 1993-1994. Morbidity and Mortality Weekly Report (45(51); 1120-1123, January 3, 1997).

22. Reissman, Dori B., Thomas D. Matte, Karen L. Gurnite, Rachel B. Kaufmann, and Jessica Leighton. ''Is Home Renovation or Repair a Risk Factor for Exposure to Lead Among Children Residing in New York City?'' Journal of Urban Health: Bulletin of the New York Academy of Medicine. Vol. 79, No. 4, 502-511, (December 2005).

23. USEPA. Lead; Requirements for Lead-based Paint Activities; Proposed Rule. **Federal Register** (59 FR 45872, September 2, 1994).

24. USEPA. Office of Pollution Prevention and Toxics (OPPT) ''Economic Analysis for the TSCA Lead Renovation, Repair, and Painting Program Final Rule for Target Housing and Child-Occupied Facilities'' (March 2008).

25. S. Rep. 102-332, P.L. 102-550, Housing and Community Development Act of 1992 (July 23, 1992).

26. National Institute of Standards and Technology (NIST). Spot Test Kits for Detecting Lead in Household Paint, a Laboratory Evaluation (NISTIR 6398, May 2000).

27. HUD. National Survey of Lead and Allergens in Housing, Volume I: Analysis of Lead Hazards, Final Report, Revision 7.1. (October 31, 2002).

28. ASTM International. Standard Practice for Evaluating the Performance Characteristics of Qualitative Chemical Spot Test Kits for Lead in Paint (E 1828-01).

29. USEPA. Lead-Based Paint Pre-Renovation Education Rule; Interpretive Guidance, Part I (May 28, 1999).

30. USEPA and HUD. Lead; Requirements for Disclosure of Information Concerning Lead-Based Paint in Housing; Final Rule. **Federal Register** (61 FR 9064, March 6, 1996).

31. USEPA, HUD. Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools. (March 2008).

32. USEPA. Lead-Based Paint Pre-Renovation Education Rule; Interpretive Guidance, Part II (October 15, 1999).

33. USEPA. Lead Sampling Technician Course (EPA 747-B-00-002, July 2000).

34. HUD. Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (June 1995).

35. USEPA. Lead Dust Minimization Work Practices for Renovation, Remodeling and Repainting; Draft Technical Manual (September 29, 1998).

36. National Institute for Occupational Safety and Health (NIOSH). Health Hazard Evaluation; Rhode Island Department of Health; HETA 96-0200-2799 (June 2000).

37. USEPA. Electrostatic Cloth and Wet Cloth Field Study in Residential Housing (September 2005).

38. United States Department of Energy. Office of Health, Safety and Security. *http://www.hss.energy.gov/csa/csp/hepa.*

39. Occupational Safety and Health Administration (OSHA), Department of Labor (DOL). Regulatory Flexibility Act Review of the Occupational Safety Standard for Lead in Construction Labor (72 FR 54826, September 27, 2007).

40. Rich, David Q. George G. Rhoads, Lih-Ming Yiin, Junfeng Zhang, Zhipeng Bai, John L. Adgate, Peter J. Ashley, and Paul J. Lioy. ''Comparison of Home Lead Dust Reduction Techniques on Hard Surfaces: the New Jersey Assessment of Cleaning Techniques Trial.'' Environmental Health Perspectives 110(9): 889-893 (September 2002).

41. HUD. Evaluation of Household Vacuum Cleaners in the Removal of Settled Lead Dust from Hard Surface Floors. (December 27, 2002, revised February 2006).

42. Lih-Ming Yiin, George G. Rhoads, David Q. Rich, Junfeng Zhang, Zhipeng Bai, John L. Adgate, Peter J. Ashley, and Paul J. Lioy. ''Comparison of Techniques to Reduce Residential Lead Dust on Carpet and Upholstery: the New Jersey Assessment of Cleaning Techniques Trial.'' Environmental Health Perspectives 110(12): 1233-1237. (December 2002).

43. Canadian Mortgage and Housing Corporation (CMHC). ''Effectiveness of Clean up Techniques for Leaded Paint Dust.'' (1992).

44. USEPA. A Comparison of Post-Renovation and Remodeling Surface Cleaning Techniques. Prepared by Clemson Environmental Technologies Laboratory (December 14, 2001)

45. CMHC. ''Evaluation of the Cleanup of Lead Paint Dust In Houses.'' Prepared by Pinchin Environmental Consultants (1995).

46. USEPA. EPA Policy for the Administration of Environmental Programs on Indian Reservations (November 8, 1984).

47. USEPA. ICR Final Rule Addendum for rulemaking entitled ''Lead; Renovation, Repair, and Painting Program; Final Rule'' (March 2008).

48 USEPA. Report of the Small Business Advocacy Review Panel on the Lead-based Paint Certification and Training; Renovation and Remodeling Requirements (March 3, 2000).

49. Final Regulatory Flexibility Analysis for the Lead; Renovation, Repair, and Painting Program; Final Rule (March 2008).

50. ASTM International. Standard Practice for Clearance Examinations Following Lead Hazard Reduction Activities in Single-Family Dwellings and Child-Occupied Facilities (E 2271-05).

51. ASTM International. Standard Guide for Evaluation, Management, and Control of Lead Hazards in Facilities (E 2052-99).

V. Statutory and Executive Order Reviews

A. Executive Order 12866

Under Executive Order 12866, entitled *Regulatory Planning and Review* (58 FR 51735, October 4, 1993), it has been determined that this rule is a ''significant regulatory action'' under section 3(f)(1) of the Executive Order because EPA estimates that it will have an annual effect on the economy of $100 million or more. Accordingly, this action was submitted to the Office of Management and Budget (OMB) for review under Executive Order 12866 and any changes made based on OMB recommendations have been documented in the public docket for this rulemaking as required by section 6(a)(3)(E) of the Executive Order.

In addition, EPA has prepared an analysis of the potential costs and benefits associated with this rulemaking. This analysis is contained in the Economic Analysis (Ref. 24), which is available in the docket for this action and is briefly summarized here.

1. *Types of facilities.* This rule applies to an estimated 37.8 million pre-1978 facilities. Of these, approximately 37.7 million facilities are located in target housing, either in rental housing, owner-occupied housing where a child under age 6 resides, or owner-occupied housing where no child under age 6 resides but that otherwise meets the definition of a child-occupied facility. Approximately 100,000 facilities are child-occupied facilities in pre-1978 public or commercial buildings.

2. *Options evaluated.* EPA considered a variety of options for addressing the risks presented by renovation, repair, and painting actions where lead-based paint is present. The Economic Analysis analyzed several different options for the scope of the rule, which would limit the coverage of the rule's substantive provisions depending on when the facility was built (such as pre-1960 or pre-1978), and whether or not there are children under the age of 6 or a pregnant woman residing in owner-occupied housing. In some options, coverage of the rule was phased in over time. EPA also considered different options for work practices, such as containment, cleaning, and cleaning verification.

3. *Number of events and individuals affected.* In the first year that all of the rule requirements will be in effect, there will be an estimated 8.4 million renovation, repair, and painting events where lead-safe work practices will be used due to the rule. As a result, there will be approximately 1.4 million children under the age of 6 who will be affected by having their exposure to lead dust minimized due to the rule. There will also be about 5.4 million adults who will be affected. After improved test kits for determining whether a painted surface contains lead-based paint become available (which is assumed in the analysis to occur by the second year of the rule), the number of renovation, repair, and painting events using lead-safe work practices is expected to drop to 4.4 million events per year. No change in the number of exposures avoided due to the rule is expected because the improved test kit will more accurately identify paint without lead, thus reducing the number of events unnecessarily using the required work practices.

4. *Benefits.* The Economic Analysis describes the estimated benefits of the rulemaking in qualitative and quantitative terms. Benefits result from the prevention of adverse health effects attributable to lead exposure. These health effects include impaired cognitive function in children and several illnesses in children and adults. EPA estimated the benefits of avoided incidence of IQ loss due to reduced lead exposure to children under the age of 6. There are not sufficient data at this time to develop dose-response functions for other health effects in children or for pregnant women. The benefits of avoided exposure to adults were not quantified due to uncertainties about the exposure of adults to lead in dust from renovation, repair, and painting activities in these facilities.

The rule is estimated to result in quantified benefits of approximately $700 million to $1,700 million in the first year. The 50–year annualized benefits provide a measure of the

steady-state benefits. The quantified IQ benefits to children are expected to be approximately $700 million to $1,700 million per year when annualized using a 3% discount rate, and $700 million to $1,800 million per year when using a 7% discount rate. The estimated benefits for the other scope options range from approximately $300 million to $1,700 million using a 3% discount rate and from $300 million to $1,800 million using a 7% discount rate. The benefits from prohibiting certain paint preparation and removal practices in renovations requiring lead-safe work practices under the rule are estimated to be $400 million to $900 million per year using a 3% discount rate. There are additional unquantified benefits, including other avoided health effects in children and adults.

5. *Costs*. The Economic Analysis estimates the costs of complying with the rule. Costs may be incurred by contractors that perform renovation, repair, and painting work for compensation, landlords that use their own staff to perform renovation, repair, and painting work in leased buildings; and child-occupied facilities that use their own staff to perform renovation, repair, and painting work.

The rule is estimated to result in a total cost of approximately $800 million in the first year that all of the rule requirements will be in effect. The cost is estimated to drop to approximately $400 million per year in the second year when the improved test kits are assumed to become available. The 50–year annualized costs provide a measure of the steady-state cost. Annualized costs of the rule are estimated to be approximately $400 million per year using either a 3% discount rate or a 7% discount rate. Annualized costs for the other scope options range from approximately $300 million to approximately $700 million per year using a 3% discount rate and $400 million to $700 million per year using a 7% discount rate. The cost of prohibiting certain paint preparation and removal practices is estimated to cost less than $10 million per year using either a 3% or a 7% discount rate

6. *Net benefits*. Net benefits are the difference between benefits and costs. The rule is estimated to result in net benefits of--$50 million to $1,000 million in the first year, based on children's IQ benefits alone. The 50–year annualized net benefits for the rule based on children's benefits are estimated to be $300 million to $1,300 million per year using either a 3% or a 7% discount rate. The annualized net benefits for the other scope options range from approximately--$50 million to $1,300 million per year using either a 3% or a 7% discount rate. The net benefits of prohibiting certain paint preparation and removal practices for renovations requiring lead-safe work practices are estimated to be approximately $400 million to $900 million per year using either a 3% or a 7% discount rate. There are additional unquantified benefits, including other avoided health effects in children and adults that are not included in the net benefits estimates.

It is important to note that the EPA analysis generates certain results that seem to indicate that more stringent control options yield smaller improvements reducing the risks of elevated blood lead levels in children than do less stringent control options. For example, the analysis estimates that using only containment of dust and debris generated during a RRP activity yields higher benefits than using all of the rule's work practices (containment, specialized cleaning, and cleaning verification). This is the opposite of what one might expect and of what is observed in the Dust Study for the 10 experiments that used the proposed rule cleaning and containment, since the benefits analysis implies that the combination of rule-style containment with rule-style cleaning and verification would result in more exposure than when such containment is combined with conventional cleaning. This is inconsistent with the Dust Study which shows that the largest decreases were observed in the 10 experiments where this final rule's practices of containment, specialized cleaning, and cleaning verification were used. Therefore, the anomalous results are likely to be artifacts of sparse underlying data and modeling assumptions. Although EPA summarizes some of the potential causes of these unexpected results in the Economic Analysis, at this time EPA is unclear as to precisely what is leading to these unexpected results. Because EPA has not determined why the benefits analyses contain anomalous results, EPA has limited confidence in the estimated benefits. EPA does not view the results as being sufficiently robust to represent the difference in magnitude of the benefits across regulatory alternatives. Nevertheless, EPA is confident that there are positive benefits.

B. Paperwork Reduction Act

The information collection requirements contained in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document prepared by EPA, an amendment to an existing ICR and referred to as the ICR Final Rule Addendum (EPA ICR No. 1715.10, OMB Control Number 2070–0155) has been placed in the public docket for this rule (Ref. 47). The information collection requirements are not enforceable until OMB approves them.

The new information collection activities contained in this rule are designed to assist the Agency in meeting the core objectives of TSCA section 402, including ensuring the integrity of accreditation programs for training providers, providing for the certification of renovators, and determining whether work practice standards are being followed. EPA has carefully tailored the recordkeeping requirements so they will permit the Agency to achieve statutory objectives without imposing an undue burden on those firms that choose to be involved in renovation, repair, and painting activities.

Burden under the Paperwork Reduction Act means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

Under this rule, the new information collection requirements may affect training providers and firms that perform renovation, repair, or painting for compensation. Although these firms have the option of choosing to engage in the covered activities, once a firm chooses to do so, the information collection activities contained in this rule become mandatory for that firm.

The ICR document provides a detailed presentation of the estimated burden and costs for 3 years of the program. The aggregate burden varies by year due to changes in the number of firms that will seek certification each year. The burden and cost to training providers and firms engaged in renovation, repair, and painting activities is summarized below.

It is estimated that approximately 170 training providers will incur burden to

notify EPA (or an authorizing State, Tribe, or Territory) before and after training courses. The average burden for training provider notifications is estimated at 20 to 100 hours per year, depending on the number of training courses provided. Total training provider burden is estimated to average 9,000 hours per year. There are approximately 211,000 firms estimated to become certified to engage in renovation, repair, or painting activities. The average certification burden is estimated to be 3.5 hours per firm in the year a firm is initially certified, and 0.5 hours in years that it is re-certified (which occurs every 5 years). Firms must also distribute lead hazard information to the owners and occupants of public or commercial buildings that contain child-occupied facilities and in target housing containing child-occupied facilities. Finally, firms must keep records of the work they perform; this recordkeeping is estimated to average approximately 5 hours per year per firm. Total burden for these certified firms is estimated to average 1,373,000 hours per year. Total respondent burden during the period covered by the ICR is estimated to average approximately 1,382,000 hours per year.

There are also government costs to administer the program. States, Tribes, and Territories are allowed, but are under no obligation, to apply for and receive authorization to administer these requirements. EPA will directly administer programs for States, Tribes, and Territories that do not become authorized. Because the number of States, Tribes, and Territories that will become authorized is not known, administrative costs are estimated assuming that EPA will administer the program everywhere. To the extent that other government entities become authorized, EPA's administrative costs will be lower.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations codified in Chapter 40 of the CFR, after appearing in the preamble of the final rule, are listed in 40 CFR part 9, are displayed either by publication in the **Federal Register** or by other appropriate means, such as on the related collection instrument or form, if applicable. When this ICR is approved by OMB, the Agency will publish a technical amendment to 40 CFR part 9 in the **Federal Register** to display the OMB control number for the approved information collection requirements contained in this final rule.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined in accordance with section 601 of the RFA as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district, or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

Pursuant to section 603 of the RFA, EPA prepared an initial regulatory flexibility analysis (IRFA) for the proposed rule and convened a Small Business Advocacy Review Panel to obtain advice and recommendations of representatives of the regulated small entities. A summary of the IRFA, a description of the Panel process, and a summary of the Panel's recommendations can be found in Unit VIII.C. of the preamble to the 2006 Proposal (Ref. 3). A detailed discussion of the Panel's advice and recommendations is found in the Panel Report (Ref. 48).

As required by section 604 of the RFA, we also prepared a final regulatory flexibility analysis (FRFA) for this final rule. The FRFA addresses the issues raised by public comments on the IRFA, which was part of the proposal of this rule. The FRFA is available for review in the docket and is summarized below (Ref. 49).

1. *Legal basis and objectives for the rule.* As discussed in Unit II.A. of this preamble, TSCA section 402(c)(2) directs EPA to study the extent to which persons engaged in renovation, repair, and painting activities are exposed to lead or create lead-based paint hazards regularly or occasionally. After concluding this study, TSCA section 402(c)(3) further directs EPA to revise its Lead-based Paint Activities Regulations under TSCA section 402(a) to apply to renovation or remodeling activities that create lead-based paint hazards. Because EPA's study found that activities commonly performed during renovation and remodeling create lead-based paint hazards, EPA is revising the TSCA section 402(a) regulatory scheme to apply to individuals and firms engaged in renovation, repair, and painting activities. In so doing, EPA has also taken into consideration the environmental, economic, and social impact of this final rule as provided in TSCA section 2(c). The primary objective of the rule is to minimize exposure to lead-based paint hazards created during renovation, repair, and painting activities in housing where children under age 6 reside and in housing where a pregnant woman resides and in housing or other buildings frequented by children under age 6.

2. *Potentially affected small entities.* Small entities include small businesses, small organizations, and small governmental jurisdictions. The small entities that are potentially directly regulated by this rule include: small businesses (including contractors and property owners and managers); small nonprofits (certain day care centers and private schools); and small governments (school districts).

In determining the number of small businesses affected by the rule, the Agency applied U.S. Economic Census data to the SBA's definition of small business. However, applying the U.S. Economic Census data requires either under or overestimating the number of small businesses affected by the rule. For example, for many construction establishments, the SBA defines small businesses as having revenues of less than $13 million. With respect to those establishments, the U.S. Economic Census data groups all establishments with revenues of $10 million or more into one revenue bracket. On the one hand, using data for the entire industry would overestimate the number of small businesses affected by the rule and would defeat the purpose of estimating impacts on small business. It would also underestimate the rule's impact on small businesses because the impacts would be calculated using the revenues of large businesses in addition to small businesses. On the other hand, applying the closest, albeit lower, revenue bracket would underestimate the number of small businesses affected by the rule while at the same time overestimating the impacts. Similar issues arose in estimating the fraction of property owners and managers that are small businesses. EPA has concluded that a

substantial number of small businesses will be affected by the rule. Consequently, EPA has chosen to be more conservative in estimating the cost impacts of the rule by using the closest, albeit lower, revenue bracket for which Census data is available. For other sectors (nonprofits operating day care centers or private schools), EPA assumed that all affected firms are small, which may overestimate the number of small entities affected by the rule.

The vast majority of entities in the industries affected by this rule are small. Using EPA's estimates, the renovation, repair, and painting program will affect an average of approximately 189,000 small entities.

3. *Potential economic impacts on small entities*. EPA evaluated two factors in its analysis of the rule's requirements on small entities, the number of firms that would experience the impact, and the size of the impact. Average annual compliance costs as a percentage of average annual revenues were used to assess the potential average impacts of the rule on small businesses and small governments. This ratio is a good measure of entities' ability to afford the costs attributable to a regulatory requirement, because comparing compliance costs to revenues provides a reasonable indication of the magnitude of the regulatory burden relative to a commonly available measure of economic activity. Where regulatory costs represent a small fraction of a typical entity's revenues, the financial impacts of the regulation on such entities may be considered as not significant. For non-profit organizations, impacts were measured by comparing rule costs to annual expenditures. When expenditure data were not available, however, revenue information was used as a proxy for expenditures. It is appropriate to calculate the impact ratios using annualized costs, because these costs are more representative of the continuing costs entities face to comply with the rule.

EPA estimates that there are an average of 189,000 small entities that would be affected by the renovation, repair, and painting activities program. Of these, there are an estimated 165,000 small businesses with an average impact of 0.7%, 17,000 small non-profits with an average impact of 0.1%, and 6,000 small governments with an average impact of 0.004%. These estimates are based on an average cost of approximately $35 per renovation.

4. *Relevant Federal rules*. The requirements in this rulemaking will fit within an existing framework of other Federal regulations that address lead-based paint. The Pre-Renovation Education Rule, discussed in Unit II.A.2. of this preamble, requires renovators to distribute a lead hazard information pamphlet to owners and occupants before conducting a renovation in target housing. This rule has been carefully crafted to harmonize with the existing pre-renovation education requirements.

Disposal of waste from renovation projects that would be regulated by this rule is covered by the Resource Conservation and Recovery Act (RCRA) regulations for solid waste. This rule does not contain specific requirements for the disposal of waste from renovations.

HUD has extensive regulations that address the conduct of interim controls, as well as other lead-based paint activities, in federally assisted housing. Some of HUD's interim controls are regulated under this rule as renovations, depending upon whether the particular interim control measure disturbs more than the threshold amount of paint. In most cases, the HUD regulations are comparable to, or more stringent than this rule. In general, persons performing HUD-regulated interim controls must have taken a course in lead-safe work practices, which is also a requirement of this rule. However, this rule does not require dust clearance testing, a process required by HUD after interim control activities that disturb more than a minimal amount of lead-based paint.

Finally, OSHA's Lead Exposure in Construction standard covers potential worker exposures to lead during many construction activities, including renovation, repair, and painting activities. Although this standard may cover many of the same projects as this final rule, the requirements themselves do not overlap. The OSHA rule addresses the protection of the worker, this EPA rule principally addresses the protection of the building occupants, particularly children under age 6 and pregnant women.

5. *Skills needed for compliance*. This rule establishes requirements for training renovators, other renovation workers, and dust sampling technicians; certifying renovators, dust sampling technicians, and entities engaged in renovation, repair, and painting activities; accrediting providers of renovation and dust sampling technician training; and for renovation work practices. Renovators and dust sampling technicians would have to take a course to learn the proper techniques for accomplishing the tasks they will perform during renovations. These courses are intended to provide them with the information they would need to comply with the rule based on the skills they already have. Renovators would then provide on-the-job training in work practices to any other renovation workers used on a particular renovation. They would also need to document the work they have done during renovations. This does not require any special skills. Renovation firms would be required to apply for certification to perform renovations; this process does not require any special skills other than the ability to complete the application. Training providers must be knowledgeable about delivering technical training. Training providers would be required to apply for accreditation to offer renovator and dust sampling technician courses. They would also be required to provide prior notification of such courses and provide information on the students trained after each such course. Completing the accreditation application and providing the required notification information does not require any special skills.

6. *Small Business Advocacy Review Panel*. Since the earliest stages of planning for this regulation under section 402(c)(3) of TSCA, EPA has been concerned with potential small entity impacts. EPA conducted outreach to small entities, and, in 1999, convened a Small Business Advocacy Review (SBAR) Panel to obtain advice and recommendations of representatives of the small entities that would potentially be subject to this regulation's requirements. At that time, EPA was planning an initial regulation that would apply to renovations in target housing, with requirements for public and commercial building renovations, including child-occupied facility renovations, to follow at a later date. The small entity representatives (SERs) chosen for consultation reflect that initial emphasis. They included maintenance and renovation contractors, painting and decorating contractors, multi-family housing owners and operators, training providers/consultants, and representatives from several national contractor associations, the National Multi-Housing Council, and the National Association of Home Builders. After considering the existing Lead-based Paint Activities Regulations, and taking into account preliminary stakeholder feedback, EPA identified eight key elements of a potential renovation and remodeling regulation for the SBAR Panel's consideration. These elements were:

- Applicability and scope.
- Firm certification.

- Individual training and certification.
- Accreditation of training courses.
- Work practice standards.
- Prohibited practices.
- Exterior clearance.
- Interior clearance.

EPA also developed several options for each of these key elements. Although the scope and applicability options specifically presented to the SBAR Panel covered only target housing, background information presented to the SERs and to the SBAR Panel members shows that EPA was also considering a regulation covering child-occupied facilities. The 2007 Supplemental Proposal (Ref. 15) extended the potentially regulated universe to include child-occupied facilities. When the 2007 Supplemental Proposal was issued, EPA conducted a targeted mailing campaign to specifically solicit input on the rule from child-occupied facilities, such as child care providers and kindergartens, in public or commercial buildings. More information on the SBAR Panel, its recommendations, and how EPA implemented them in the development of the program, is provided in Unit VIII.C.6. of the preamble to the 2006 Proposal (Ref. 3).

7. *Alternatives considered*. The following is a discussion of significant alternatives to the rule, originated by EPA or by commenters, that could affect the economic impacts of the rule on small entities. These alternatives would have applied to both small and large entities, but, given the large number of small entities in the industry, these alternatives would primarily affect small entities. For the reasons described below, these alternatives are not consistent with the objectives of the rule.

a. *Applicability and scope*. EPA considered a number of options for the scope and applicability of the rule: include all pre-1978 housing, all pre-1978 rental housing, all pre-1960 housing, and all pre-1960 rental housing. Although the scope and applicability options specifically presented to the SBAR Panel covered only target housing, background information presented to the SERs and to the SBAR Panel members shows that EPA was also considering a regulation covering child-occupied facilities.

The SBAR Panel recommended that EPA request public comment in the proposal on the option of limiting the housing stock affected by the rule to that constructed prior to 1960, as well as the option of covering all pre-1978 housing and other options that may help to reduce costs while achieving the protection of public health. EPA asked for comment in the proposed rule on alternative scope options, including an option limited to buildings constructed prior to 1960. After considering the public comments, EPA has determined that limiting the rule to exclude buildings constructed on or after 1960 is not consistent with the stated objectives of the rule, in part because this would not protect children under the age of 6 and pregnant women.

b. *Staged approach*. EPA proposed a staged approach that would initially address renovations in pre-1960 target housing and child-occupied facilities, or where a child had an increased blood-lead level. EPA requested comment about whether to delay implementation for post-1960 target housing and child-occupied facilities for 1 year. Most commenters objected to the phased implementation, expressing concerns about adding complexity to implementation and about potential exposures to children in buildings built between 1960 and 1978 during the first year. After reviewing the comments, EPA determined the reduced burdens of a staged approach did not outweigh the complexity that it added to implementation.

c. *Exclude categories of contractors or renovation activities*. EPA requested comment on whether to exclude any categories of specialty contractors and whether certain renovation activities should be specifically included or excluded. In response, no commenter offered any data to show that any category of contractor or type of renovation activity should be exempt because they do not create lead-based paint hazards. All of the renovation activities in the Dust Study and the other studies in the record for the rule created lead-based paint hazards. EPA determined that it had no basis on which to exempt any category of contractor or type of renovation. However, some small jobs will be exempt from the requirements of the rule under the minor maintenance exception.

d. *Prohibited practices*. The current abatement regulations in 40 CFR part 745, subpart L prohibit the following work practices during abatement projects: Open-flame burning or torching, machine sanding or grinding, abrasive blasting or sandblasting, dry scraping of large areas, and operating a heat gun in excess of 1100 degrees Fahrenheit. EPA presented four options to the SBAR Panel on this topic: prohibit these practices during renovations; allow dry scraping and exterior flame-burning or torching; allow dry scraping and interior and exterior flame-burning or torching; or allow all of these practices. The SBAR Panel recognized industry concerns over the feasibility of prohibiting these practices, especially when no cost-effective alternatives exist. The SBAR Panel was also concerned about the potential risks associated with these practices, but noted that reasonable training, performance, containment, and clean-up requirements may adequately address these risks.

EPA followed the SBAR Panel's recommendation and requested public comment on the cost, benefit, and feasibility of prohibiting certain work practices. In response to its request for comment in the proposed rule, the Agency received information on techniques including benign strippers, steam stripping, closed planing with vacuums, infrared removal, and chemical stripping. Therefore, EPA believes that there are cost-effective alternatives to these prohibited or restricted practices. In addition, the Dust Study (*Characterization of Dust Lead Levels after Renovation, Repair, and Painting Activities*) found that most practices prohibited or restricted under EPA's Lead-based Paint Activities Regulations produce large quantities of lead dust, and that the use of the proposed work practices were not effective at containing or removing dust-lead hazards from the work area.

EPA has concluded that these practices should be prohibited or restricted during renovation, repair, and painting activities that disturb lead-based paint because the work practices in the rule are not effective at containing the spread of leaded dust when these practices are used, or at cleaning up lead-based paint hazards created by these practices. Thus, the work practices are not effective at minimizing exposure to lead-based paint hazards created during renovation activities when these activities are used.

e. *HEPA vacuums*. The proposed rule required the use of a HEPA vacuum as part of the work practice standards for renovation activities. One commenter stated that EPA did not have sufficient evidence showing that HEPA vacuums are significantly better at removing lead dust than non-HEPA vacuums. EPA has determined that the weight of the evidence provided by the studies it reviewed demonstrates that the HEPA vacuums consistently removed significant quantities of lead-based paint dust and reduced lead loadings to lower levels then did other vacuums. While there may be some vacuums cleaners that are as effective as HEPA vacuums, EPA has not been able to define quantitatively the specific attributes of

those vacuums. That is, EPA is not able to identify what criteria should be used to identify vacuums that are equivalent to HEPA vacuums in performance. Thus, EPA does not believe that it can identify in the final rule what types of vacuums can be used as substitutes for HEPA-vacuums. Therefore, EPA has not adopted this alternative.

f. *Visual inspection in lieu of cleaning verification*. EPA requested comment on whether cleaning verification is necessary given the cleaning required by the rule. Some commenters contended that a visual inspection following cleaning after a renovation is sufficient to ensure the lead-based paint dust generated by a renovation has been sufficiently cleaned-up. EPA disagrees with those commenters who requested that the work practices in the final rule not include any verification beyond visual inspection. The weight of the evidence clearly demonstrates that visual inspection following cleaning after a renovation is insufficient at detecting dust-lead hazards, even at levels significantly above the regulatory hazard standards. Further, EPA disagrees with the implication that easily visible paint chips and splinters are necessarily the primary materials generated during a renovation. EPA studies, including the Dust Study, show that renovation activities generate dust as well as chips and splinters. Therefore, EPA has not adopted this alternative.

8. *Significant issues raised by comments on the Initial Regulatory Flexibility Analysis*. A commenter requested that the plumbing-heating-cooling industry be exempted from the rule, claiming that the rule is impractical for the industry. The commenter did not provide any supporting data as to why the rule is impractical for the plumbing-heating-cooling industry, or any data indicating that renovations conducted by plumbing, heating, or cooling contractors do not create lead hazards. By contrast, the Dust Study indicated that cutting open drywall (an activity often performed by plumbing, heating, and cooling contractors) can create a lead hazard. Therefore, EPA believes that plumbing, heating, and cooling contractors who disturb more than an exempt amount of lead-based paint can create lead hazards. EPA does not believe that there is a factual basis for exempting this, or any other, industry from the rule.

Another commenter stated that EPA's proposed rule gave little deference to HUD's rules, and thus is inconsistent with the Regulatory Flexibility Act's requirements to fit new rules within the framework of existing Federal regulations. The commenter stated that EPA's rule needed to give greater deference to the framework established in HUD's rules (especially HUD's requirements for independent clearance examinations and its prohibition of dangerous work practices), and to clearly explain how the Renovation, Repair and Painting Rule will interface with HUD's rules to avoid confusion.

Regarding HUD's requirements for independent clearance examinations, EPA's final rule clarifies that dust clearance sampling is allowed in lieu of post-renovation cleaning verification in cases where another Federal, State, Territorial, Tribal, or local regulation requires dust clearance testing and requires the renovation firm to clean the work area until it passes clearance. This would apply to HUD-regulated renovations. Regarding the prohibition of dangerous work practices, EPA's final rule prohibits the use of the following work practices during regulated renovations: Open flame burning or torching of lead-based paint; the use of machines that remove lead-based paint through high speed operation such as sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting unless such machines are used with HEPA exhaust control; and operating a heat gun above 1100 degrees Fahrenheit. EPA believes that the provisions in the final rule provide an appropriate measure of consistency with other regulatory programs (including HUD's), and will cause minimal disruption for renovation firms.

One commenter contended that EPA said that ''[n]one of the housing authorities identified in section 8.2.1 as operating public housing that does not receive HUD funding qualifies as a small government under the Regulatory Flexibility Act.'' According to the commenter, public housing authorities are government entities, and hundreds of them are located in and are part of communities with a population of less than 50,000.

EPA's small entity analysis was not claiming that no small governments operate housing authorities, but that they would not be significantly impacted by the rule. EPA's reasoning was as follows:

- The only public housing authorities that EPA could identify that do not receive HUD funds are operated by Massachusetts, New York, Hawaii, Connecticut, and New York City.
- Massachusetts, New York, Hawaii, Connecticut, and New York City have populations over 50,000 and thus do not qualify as small governments.
- To the best of EPA's knowledge, governments with populations under 50,000 that operate public housing authorities all receive HUD funds.
- Public housing that receives funding from HUD already must comply with HUD regulations regarding lead paint and so are not likely to incur significant additional costs due to this rule.

The commenter has offered no factual information to dispute this reasoning. Therefore, the Agency believes its conclusions regarding public housing authorities operated by small governments were appropriate.

A commenter stated that the proposed rule will have a significant impact on small businesses, and that EPA's own economic analysis of this rule finds that residential property managers and lessors of residential real estate will bear the largest share of costs in association with the rule. EPA disagrees with the commenter's claim that residential property managers and lessors of residential real estate will bear the largest share of costs in association with the rule. EPA analyzed small business impacts by estimating the average cost impact ratio for each industry, calculated as the average annual compliance cost as a percentage of average annual revenues. The average cost impact ratio for lessors of real estate is below the average cost impact ratio for all small businesses under the rule. And while the average cost impact ratio for residential property managers is above the average cost impact for all small businesses under the rule, small residential property managers make up approximately 3% of the small entities impacted by the rule. Therefore, it is not accurate to claim that residential property managers and lessors of residential real estate will bear the largest share of costs in association with the rule.

Another commenter stated that given the lack of evidence showing that HEPA vacuums are significantly better at removing lead dust from floors, and because HEPA vacuums are significantly more costly than non-HEPA units, EPA should modify its proposed rule to allow cleanup with either a HEPA or non-HEPA vacuum. According to the commenter, doing so would reduce the cost to small entities in the renovation and lead mitigation businesses without compromising the level of lead dust clearance achieved by the standard.

EPA disagrees that it should modify its proposed rule to allow cleanup with a non-HEPA vacuum. EPA has determined that the weight of the evidence provided by various studies

demonstrate that the HEPA vacuums consistently removed significant quantities of lead-based paint dust and reduced lead loadings to lower levels then did other vacuums. While there may be some vacuums that are as effective as HEPA vacuums, EPA has not been able to define quantitatively the specific attributes of those vacuums. That is, EPA is not able to identify what criteria should be used to identify vacuums that are equivalent to HEPA vacuums in performance. Thus, EPA does not believe that it can identify what types of vacuums can be used as substitutes for HEPA-vacuums. EPA also notes that non-HEPA vacuums that perform as well as HEPA vacuums may not be less expensive than HEPA vacuums. For these reasons, EPA has determined that modifying its proposed rule to allow cleanup with non-HEPA vacuums would compromise the level of lead dust clearance achieved by the standard, and might not result in meaningful cost reductions.

As required by section 212 of SBREFA, EPA also is preparing a Small Entity Compliance Guide to help small entities comply with this rule. Before the date that this rule's requirements take effect for training providers, renovation firms, and renovators, the guide will be available on EPA's website at *http://www.epa.gov/lead* or from the National Lead Information Center by calling 1–800–424–LEAD (5323).

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and Tribal governments, in the aggregate, or to the private sector, of $100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Under UMRA Title II, EPA has determined that this rule contains a Federal mandate that may result in expenditures that exceed the inflation-adjusted UMRA threshold of $100 million by the private sector in any 1 year, but it will not result in such expenditures by State, local, and Tribal governments in the aggregate. Accordingly, EPA has prepared a written statement under section 202 of UMRA which has been placed in the public docket for this rulemaking and is summarized here.

1. *Authorizing legislation.* This rule is issued under the authority of TSCA sections 402(c)(3), 404, 406, and 407, 15 U.S.C. 2682(c)(3), 2684, 2686, and 2687.

2. *Cost-benefit analysis.* EPA has prepared an analysis of the costs and benefits associated with this rulemaking, a copy of which is available in the docket for this rulemaking (Ref. 24). The Economic Analysis presents the costs of the rule as well as various regulatory options and is summarized in Unit III.A. of this preamble.EPA has estimated that the total annualized costs of this rulemaking are approximately $400 million per year using either a 3% or a 7% discount rate,and that benefits are approximately $700 to $1,700 million per year using a 3% discount rate and $700 to $1,800 million per year using a 7% discount.

3. *State, local, and Tribal government input.* EPA has sought input from State, local and Tribal government representatives throughout the development of the renovation, repair, and painting program. EPA's experience in administering the existing lead-based paint activities program under TSCA section 402(a) suggests that these governments will play a critical role in the successful implementation of a national program to reduce exposures to lead-based paint hazards associated with renovation, repair, and painting activities. Consequently, as discussed in Unit III.C.2. of the preamble to the 2006 Proposal (Ref. 3), the Agency has met with State, local, and Tribal government officials on numerous occasions to discuss renovation issues.

4. *Least burdensome option.* EPA considered a wide variety of options for addressing the risks presented by renovation activities where lead-based paint is present. As part of the development of the renovation, repair, and painting program, EPA has considered different options for the scope of the rule, various combinations of training and certification requirements for individuals who perform renovations, various combinations of work practice requirements, and various methods for ensuring that no lead-based paint hazards are left behind by persons performing renovations. The Economic Analysis analyzed several different options for the scope of the rule. Additional information on the options considered is available in Unit VIII.C.6. of the preamble for the 2006 Proposal (Ref. 3), and in the Economic Analysis (Ref. 24). EPA has determined that the preferred option is the least burdensome option available that achieves the primary objective of this rule, which is to minimize exposure to lead-based paint hazards created during renovation, repair, and painting activities in housing where children under age 6 reside and where a pregnant woman resides and in housing or other buildings frequented by children under age 6.

This rule does not contain a significant Federal intergovernmental mandate as described by section 203 of UMRA. Based on the definition of ''small government jurisdiction'' in RFA section 601, no State governments can be considered small. Small Territorial or Tribal governments may apply for authorization to administer and enforce this program, which would entail costs, but these small jurisdictions are under no obligation to do so.

EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. Small governments operate schools that are child-occupied facilities. EPA generally measures a significant impact under UMRA as being expenditures, in the aggregate, of more than 1% of small government revenues in any 1 year. As explained in Unit III.C.3., the rule is expected to result in small government impacts well under 1% of revenues. So EPA has determined that the rule does not significantly affect small governments. Nor does the rule uniquely affect small governments, as the rule is not targeted

at small governments, does not primarily affect small governments, and does not impose a different burden on small governments than on other entities that operate child-occupied facilities.

E. Federalism

Pursuant to Executive Order 13132, entitled *Federalism* (64 FR 43255, August 10, 1999), EPA has determined that this rule does not have ''federalism implications,'' because it will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Thus, Executive Order 13132 does not apply to this rule. States would be able to apply for, and receive authorization to administer these requirements, but would be under no obligation to do so. In the absence of a State authorization, EPA will administer these requirements. Nevertheless, in the spirit of the objectives of this Executive Order, and consistent with EPA policy to promote communications between the Agency and State and local governments, EPA has consulted with representatives of State and local governments in developing the renovation, repair, and painting program. These consultations are as described in the preamble to the 2006 Proposal (Ref. 3).

F. Tribal Implications

As required by Executive Order 13175, entitled *Consultation and Coordination with Indian Tribal Governments* (59 FR 22951, November 9, 2000), EPA has determined that this rule does not have tribal implications because it will not have substantial direct effects on tribal governments, on the relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in the Order. Tribes would be able to apply for, and receive authorization to administer these requirements on Tribal lands, but Tribes would be under no obligation to do so. In the absence of a Tribal authorization, EPA will administer these requirements. While Tribes may operate child-occupied facilities covered by the rule such as kindergartens, pre-kindergartens, and day care facilities, EPA has determined that this rule would not have substantial direct effects on the Tribal governments that operate these facilities.

Thus, Executive Order 13175 does not apply to this rule. Although Executive Order 13175 does not apply to this rule, EPA consulted with Tribal officials and others by discussing potential renovation regulatory options for the renovation, repair, and painting program at several national lead program meetings hosted by EPA and other interested Federal agencies.

G. Children's Health Protection

Executive Order 13045, entitled *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885, April 23, 1997) applies to this rule because it is an ''economically significant regulatory action'' as defined by Executive Order 12866, and because the environmental health or safety risk addressed by this action may have a disproportionate effect on children. Accordingly, EPA has evaluated the environmental health or safety effects of renovation, repair, and painting projects on children. Various aspects of this evaluation are discussed in the preamble to the 2006 Proposal (Ref. 3).

The primary purpose of this rule is to minimize exposure to lead-based paint hazards created during renovation, repair, and painting activities in housing where children under age 6 reside and in housing or other buildings frequented by children under age 6. In the absence of this regulation, adequate work practices are not likely to be employed during renovation, repair, and painting activities. EPA's analysis indicates that there will be approximately 1.4 million children under age 6 affected by the rule. These children are projected to receive considerable benefits due to this regulation.

H. Energy Effects

This rule is not a ''significant energy action'' as defined in Executive Order 13211, entitled *Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use* (66 FR 28355, May 22, 2001) because it is not likely to have any adverse effect on the supply, distribution, or use of energy.

I. Technology Standards

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104–113, 12(d) (15 U.S.C. 272 note), directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. In the 2006 Proposal, EPA proposed to adopt a number of work practice requirements that could be considered technical standards for performing renovation projects in residences that contain lead-based paint. As discussed in Unit VIII.I. of the 2006 Proposal, EPA identified two potentially applicable voluntary consensus standards (Ref. 3 at 1626). ASTM International (formerly the American Society for Testing and Materials) has developed two potentially applicable documents: *Standard Practice for Clearance Examinations Following Lead Hazard Reduction Activities in Single-Family Dwellings and Child-Occupied Facilities* (Ref. 50), and ''Standard Guide for Evaluation, Management, and Control of Lead Hazards in Facilities'' (Ref. 51). With respect to the first document, EPA did not propose to require traditional clearance examinations, including dust sampling, following renovation projects. However, EPA did propose to require that a visual inspection for dust, debris, and residue be conducted after cleaning and before post-renovation cleaning verification is performed. The first ASTM document does contain information on conducting a visual inspection before collecting dust clearance samples. The second ASTM document is a comprehensive guide to identifying and controlling lead-based paint hazards. Some of the information in this document is relevant to the work practices required by the rule. Each of these ASTM documents represents state-of-the-art knowledge regarding the performance of these particular aspects of lead-based paint hazard evaluation and control practices and EPA continues to recommend the use of these documents where appropriate. However, because each of these documents is extremely detailed and encompasses many circumstances beyond the scope of this rulemaking, EPA determined that it would be impractical to incorporate these voluntary consensus standards into the rule.

In addition, this final rule contains performance standards and a process for recognizing test kits that may be used by certified renovators to determine whether components to be affected by a renovation contain lead-based paint.

EPA will recognize those kits that meet certain performance standards for limited false positives and negatives. EPA will also recognize only those kits that have been properly validated by a laboratory independent of the kit manufacturer. For most kits, this will mean participating in EPA's Environmental Technology Verification (ETV) program. With stakeholder input, EPA is adapting a volunary consensus standard, ASTM's ''Standard Practice for Evaluating the Performance Characteristics of Qualitative Chemical Spot Test Kits for Lead in Paint'' (Ref. 28), for use as a testing protocol to determine whether a particular kit has met the performance standards established in this final rule.

J. Environmental Justice

Executive Order 12898, entitled *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has assessed the potential impact of this rule on minority and low-income populations. The results of this assessment are presented in the Economic Analysis, which is available in the public docket for this rulemaking (Ref. 24). As a result of this assessment, the Agency has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population.

VI. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is a ''major rule'' as defined by 5 U.S.C. 804(2). This rule is effective June 23, 2008.

List of Subjects in 40 CFR Part 745

Environmental protection, Child-occupied facility, Housing renovation, Lead, Lead-based paint, Renovation, Reporting and recordkeeping requirements.

Dated: March 31, 2008,

Steven L. Johnson,

Administrator.

■ Therefore, 40 CFR chapter I is amended as follows:

PART 745—[AMENDED]

■ 1. The authority citation for part 745 continues to read as follows:

Authority: 15 U.S.C. 2605, 2607, 2681-2692 and 42 U.S.C. 4852d.

■ 2. Section 745.80 is revised to read as follows:

§ 745.80 Purpose.

This subpart contains regulations developed under sections 402 and 406 of the Toxic Substances Control Act (15 U.S.C. 2682 and 2686) and applies to all renovations performed for compensation in target housing and child-occupied facilities. The purpose of this subpart is to ensure the following:

(a) Owners and occupants of target housing and child-occupied facilities receive information on lead-based paint hazards before these renovations begin; and

(b) Individuals performing renovations regulated in accordance with§ 745.82 are properly trained; renovators and firms performing these renovations are certified; and the work practices in § 745.85 are followed during these renovations.

■ 3. Section 745.81 is revised to read as follows:

§ 745.81 Effective dates.

(a) *Training, certification and accreditation requirements and work practice standards.* The training, certification and accreditation requirements and work practice standards in this subpart are applicable in any State or Indian Tribal area that does not have a renovation program that is authorized under subpart Q of this part. The training, certification and accreditation requirements and work practice standards in this subpart will become effective as follows:

(1) *Training programs.* Effective June 23, 2008, no training program may provide, offer, or claim to provide training or refresher training for EPA certification as a renovator or a dust sampling technician without accreditation from EPA under § 745.225. Training programs may apply for accreditation under § 745.225 beginning April 22, 2009.

(2) *Firms.* (i) Firms may apply for certification under § 745.89 beginning October 22, 2009.

(ii) On or after April 22, 2010, no firm may perform, offer, or claim to perform renovations without certification from EPA under § 745.89 in target housing or child-occupied facilities, unless the renovation qualifies for one of the exceptions identified in § 745.82(a) or (c).

(3) *Individuals.* On or after April 22, 2010, all renovations must be directed by renovators certified in accordance with § 745.90(a) and performed by certified renovators or individuals trained in accordance with § 745.90(b)(2) in target housing or child-occupied facilities, unless the renovation qualifies for one of the exceptions identified in § 745.82(a) or (c).

(4) *Work practices.* On or after April 22, 2010, all renovations must be performed in accordance with the work practice standards in § 745.85 and the associated recordkeeping requirements in § 745.86(b)(6) and (b)(7) in target housing or child-occupied facilities, unless the renovation qualifies for one of the exceptions identified in § 745.82(a) or (c).

(5) The suspension and revocation provisions in § 745.91 are effectiveApril 22, 2010.

(b) *Renovation-specific pamphlet.* Before December 22, 2008, renovators or firms performing renovations in States and Indian Tribal areas without an authorized program may provide owners and occupants with either of the following EPA pamphlets: *Protect Your Family From Lead in Your Home* or *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools.* After that date, *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools* must be used exclusively.

(c) *Pre-Renovation Education Rule.* With the exception of the requirement to use the pamphlet entitled *Renovate Right: Important Lead Hazard Information for Families, Child Care*

Providers and Schools, the provisions of the Pre-Renovation Education Rule in this subpart have been in effect since June 1999.

■ 4. Section 745.82 is revised to read as follows:

§ 745.82 Applicability.

(a) This subpart applies to all renovations performed for compensation in target housing and child-occupied facilities, except for the following:

(1) Renovations in target housing or child-occupied facilities in which a written determination has been made by an inspector or risk assessor (certified pursuant to either Federal regulations at § 745.226 or a State or Tribal certification program authorized pursuant to § 745.324) that the components affected by the renovation are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams/per square centimeter (mg/cm^2) or 0.5% by weight, where the firm performing the renovation has obtained a copy of the determination.

(2) Renovations in target housing or child-occupied facilities in which a certified renovator, using an EPA recognized test kit as defined in § 745.83 and following the kit manufacturer's instructions, has tested each component affected by the renovation and determined that the components are free of paint or other surface coatings that contain lead equal to or in excess of 1.0 mg/cm^2 or 0.5% by weight. If the components make up an integrated whole, such as the individual stair treads and risers of a single staircase, the renovator is required to test only one of the individual components, unless the individual components appear to have been repainted or refinished separately.

(b) The information distribution requirements in § 745.84 do not apply to emergency renovations, which are renovation activities that were not planned but result from a sudden, unexpected event (such as non-routine failures of equipment) that, if not immediately attended to, presents a safety or public health hazard, or threatens equipment and/or property with significant damage. Interim controls performed in response to an elevated blood lead level in a resident child are also emergency renovations. Emergency renovations other than interim controls are also exempt from the warning sign, containment, waste handling, training, and certification requirements in §§ 745.85, 745.89, and 745.90 to the extent necessary to respond to the emergency. Emergency renovations are not exempt from the cleaning requirements of § 745.85(a)(5), which must be performed by certified renovators or individuals trained in accordance with § 745.90(b)(2), the cleaning verification requirements of § 745.85(b), which must be performed by certified renovators, and the recordkeeping requirements of § 745.86(b)(6) and (b)(7).

(c) The training requirements in § 745.90 and the work practice standards for renovation activities in § 745.85 apply to all renovations covered by this subpart, except for renovations in target housing for which the firm performing the renovation has obtained a statement signed by the owner that the renovation will occur in the owner's residence, no child under age 6 resides there, no pregnant woman resides there, the housing is not a child-occupied facility, and the owner acknowledges that the renovation firm will not be required to use the work practices contained in EPA's renovation, repair, and painting rule. For the purposes of this section, a child resides in the primary residence of his or her custodial parents, legal guardians, and foster parents. A child also resides in the primary residence of an informal caretaker if the child lives and sleeps most of the time at the caretaker's residence.

■ 5. Section 745.83 is amended as follows:

■ a. Remove the definitions of ''Emergency renovation operations'' and ''Multi-family housing.''

■ b. Revise the definitions of ''Pamphlet,'' ''Renovation,'' and ''Renovator.''

■ c. Add 13 definitions in alphabetical order.

§ 745.83 Definitions.

* * * * *

Child-occupied facility means a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may include, but are not limited to, day care centers, preschools and kindergarten classrooms. Child-occupied facilities may be located in target housing or in public or commercial buildings. With respect to common areas in public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only those common areas that are routinely used by children under age 6, such as restrooms and cafeterias. Common areas that children under age 6 only pass through, such as hallways, stairways, and garages are not included. In addition, with respect to exteriors of public or commercial buildings that contain child-occupied facilities, the child-occupied facility encompasses only the exterior sides of the building that are immediately adjacent to the child-occupied facility or the common areas routinely used by children under age 6.

Cleaning verification card means a card developed and distributed, or otherwise approved, by EPA for the purpose of determining, through comparison of wet and dry disposable cleaning cloths with the card, whether post-renovation cleaning has been properly completed.

Component or building component means specific design or structural elements or fixtures of a building or residential dwelling that are distinguished from each other by form, function, and location. These include, but are not limited to, interior components such as: Ceilings, crown molding, walls, chair rails, doors, door trim, floors, fireplaces, radiators and other heating units, shelves, shelf supports, stair treads, stair risers, stair stringers, newel posts, railing caps, balustrades, windows and trim (including sashes, window heads, jambs, sills or stools and troughs), built in cabinets, columns, beams, bathroom vanities, counter tops, and air conditioners; and exterior components such as: Painted roofing, chimneys, flashing, gutters and downspouts, ceilings, soffits, fascias, rake boards, cornerboards, bulkheads, doors and door trim, fences, floors, joists, lattice work, railings and railing caps, siding, handrails, stair risers and treads, stair stringers, columns, balustrades, windowsills or stools and troughs, casings, sashes and wells, and air conditioners.

Dry disposable cleaning cloth means a commercially available dry, electrostatically charged, white disposable cloth designed to be used for cleaning hard surfaces such as uncarpeted floors or counter tops.

Firm means a company, partnership, corporation, sole proprietorship or individual doing business, association, or other business entity; a Federal, State, Tribal, or local government agency; or a nonprofit organization.

HEPA vacuum means a vacuum cleaner which has been designed with a high-efficiency particulate air (HEPA) filter as the last filtration stage. A HEPA filter is a filter that is capable of

capturing particles of 0.3 microns with 99.97% efficiency. The vacuum cleaner must be designed so that all the air drawn into the machine is expelled through the HEPA filter with none of the air leaking past it.

Interim controls means a set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards, including specialized cleaning, repairs, maintenance, painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs.

Minor repair and maintenance activities are activities, including minor heating, ventilation or air conditioning work, electrical work, and plumbing, that disrupt 6 square feet or less of painted surface per room for interior activities or 20 square feet or less of painted surface for exterior activities where none of the work practices prohibited or restricted by § 745.85(a)(3) are used and where the work does not involve window replacement or demolition of painted surface areas. When removing painted components, or portions of painted components, the entire surface area removed is the amount of painted surface disturbed. Jobs, other than emergency renovations, performed in the same room within the same 30 days must be considered the same job for the purpose of determining whether the job is a minor repair and maintenance activity.

Pamphlet means the EPA pamphlet titled *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools* developed under section 406(a) of TSCA for use in complying with section 406(b) of TSCA, or any State or Tribal pamphlet approved by EPA pursuant to 40 CFR 745.326 that is developed for the same purpose. This includes reproductions of the pamphlet when copied in full and without revision or deletion of material from the pamphlet (except for the addition or revision of State or local sources of information). Before December 22, 2008, the term ''pamphlet'' also means any pamphlet developed by EPA under section 406(a) of TSCA or any State or Tribal pamphlet approved by EPA pursuant to § 745.326.

* * * * *

Recognized test kit means a commercially available kit recognized by EPA under § 745.88 as being capable of allowing a user to determine the presence of lead at levels equal to or in excess of 1.0 milligrams per square centimeter, or more than 0.5% lead by weight, in a paint chip, paint powder, or painted surface.

Renovation means the modification of any existing structure, or portion thereof, that results in the disturbance of painted surfaces, unless that activity is performed as part of an abatement as defined by this part (40 CFR 745.223). The term renovation includes (but is not limited to): The removal, modification or repair of painted surfaces or painted components (e.g., modification of painted doors, surface restoration, window repair, surface preparation activity (such as sanding, scraping, or other such activities that may generate paint dust)); the removal of building components (e.g., walls, ceilings, plumbing, windows); weatherization projects (e.g., cutting holes in painted surfaces to install blown-in insulation or to gain access to attics, planing thresholds to install weather-stripping), and interim controls that disturb painted surfaces. A renovation performed for the purpose of converting a building, or part of a building, into target housing or a child-occupied facility is a renovation under this subpart. The term renovation does not include minor repair and maintenance activities.

Renovator means an individual who either performs or directs workers who perform renovations. A certified renovator is a renovator who has successfully completed a renovator course accredited by EPA or an EPA-authorized State or Tribal program.

Training hour means at least 50 minutes of actual learning, including, but not limited to, time devoted to lecture, learning activities, small group activities, demonstrations, evaluations, and hands-on experience.

Wet disposable cleaning cloth means a commercially available, pre-moistened white disposable cloth designed to be used for cleaning hard surfaces such as uncarpeted floors or counter tops.

Wet mopping system means a device with the following characteristics: A long handle, a mop head designed to be used with disposable absorbent cleaning pads, a reservoir for cleaning solution, and a built-in mechanism for distributing or spraying the cleaning solution onto a floor, or a method of equivalent efficacy.

Work area means the area that the certified renovator establishes to contain the dust and debris generated by a renovation.

§ 745.84 [Removed]

■ 6. Section 745.84 is removed.

§ 745.85 [Redesignated as § 745.84]

■ 7. Section 745.85 is redesignated as § 745.84.

■ 8. Newly designated § 745.84 is amended as follows:

■ a. Revise the introductory text of paragraph (a) and revise paragraph (a)(2)(i).

■ b. Revise the introductory text of paragraph (b) and revise paragraphs (b)(2) and (b)(4).

■ c. Redesignate paragraph (c) as paragraph (d).

■ d. Add a new paragraph (c).

■ e. Revise the introductory text of newly designated paragraph (d).

§ 745.84 Information distribution requirements.

(a) *Renovations in dwelling units*. No more than 60 days before beginning renovation activities in any residential dwelling unit of target housing, the firm performing the renovation must:

* * * * *

(2) * * *

(i) Obtain, from the adult occupant, a written acknowledgment that the occupant has received the pamphlet; or certify in writing that a pamphlet has been delivered to the dwelling and that the firm performing the renovation has been unsuccessful in obtaining a written acknowledgment from an adult occupant. Such certification must include the address of the unit undergoing renovation, the date and method of delivery of the pamphlet, names of the persons delivering the pamphlet, reason for lack of acknowledgment (e.g., occupant refuses to sign, no adult occupant available), the signature of a representative of the firm performing the renovation, and the date of signature.

* * * * *

(b) *Renovations in common areas*. No more than 60 days before beginning renovation activities in common areas of multi-unit target housing, the firm performing the renovation must:

* * * * *

(2) *Comply with one of the following*. (i) Notify in writing, or ensure written notification of, each affected unit and make the pamphlet available upon request prior to the start of renovation. Such notification shall be accomplished by distributing written notice to each affected unit. The notice shall describe the general nature and locations of the planned renovation activities; the expected starting and ending dates; and a statement of how the occupant can obtain the pamphlet, at no charge, from the firm performing the renovation, or

(ii) While the renovation is ongoing, post informational signs describing the

general nature and locations of the renovation and the anticipated completion date. These signs must be posted in areas where they are likely to be seen by the occupants of all of the affected units. The signs must be accompanied by a posted copy of the pamphlet or information on how interested occupants can review a copy of the pamphlet or obtain a copy from the renovation firm at no cost to occupants.

* * * * *

(4) If the scope, locations, or expected starting and ending dates of the planned renovation activities change after the initial notification, and the firm provided written initial notification to each affected unit, the firm performing the renovation must provide further written notification to the owners and occupants providing revised information on the ongoing or planned activities. This subsequent notification must be provided before the firm performing the renovation initiates work beyond that which was described in the original notice.

(c) *Renovations in child-occupied facilities.* No more than 60 days before beginning renovation activities in any child-occupied facility, the firm performing the renovation must:

(1)(i) Provide the owner of the building with the pamphlet, and comply with one of the following:

(A) Obtain, from the owner, a written acknowledgment that the owner has received the pamphlet.

(B) Obtain a certificate of mailing at least 7 days prior to the renovation.

(ii) If the child-occupied facility is not the owner of the building, provide an adult representative of the child-occupied facility with the pamphlet, and comply with one of the following:

(A) Obtain, from the adult representative, a written acknowledgment that the adult representative has received the pamphlet; or certify in writing that a pamphlet has been delivered to the facility and that the firm performing the renovation has been unsuccessful in obtaining a written acknowledgment from an adult representative. Such certification must include the address of the child-occupied facility undergoing renovation, the date and method of delivery of the pamphlet, names of the persons delivering the pamphlet, reason for lack of acknowledgment (e.g., representative refuses to sign), the signature of a representative of the firm performing the renovation, and the date of signature.

(B) Obtain a certificate of mailing at least 7 days prior to the renovation.

(2) Provide the parents and guardians of children using the child-occupied facility with the pamphlet and information describing the general nature and locations of the renovation and the anticipated completion date by complying with one of the following:

(i) Mail or hand-deliver the pamphlet and the renovation information to each parent or guardian of a child using the child-occupied facility.

(ii) While the renovation is ongoing, post informational signs describing the general nature and locations of the renovation and the anticipated completion date. These signs must be posted in areas where they can be seen by the parents or guardians of the children frequenting the child-occupied facility. The signs must be accompanied by a posted copy of the pamphlet or information on how interested parents or guardians can review a copy of the pamphlet or obtain a copy from the renovation firm at no cost to the parents or guardians.

(3) The renovation firm must prepare, sign, and date a statement describing the steps performed to notify all parents and guardians of the intended renovation activities and to provide the pamphlet.

(d) *Written acknowledgment.* The written acknowledgments required by paragraphs (a)(1)(i), (a)(2)(i), (b)(1)(i), (c)(1)(i)(A), and (c)(1)(ii)(A) of this section must:

* * * * *

■ 9. Section 745.85 is added to subpart E to read as follows:

§ 745.85 Work practice standards.

(a) *Standards for renovation activities.* Renovations must be performed by certified firms using certified renovators as directed in § 745.89. The responsibilities of certified firms are set forth in § 745.89(d) and the responsibilities of certified renovators are set forth in § 745.90(b).

(1) *Occupant protection.* Firms must post signs clearly defining the work area and warning occupants and other persons not involved in renovation activities to remain outside of the work area. To the extent practicable, these signs must be in the primary language of the occupants. These signs must be posted before beginning the renovation and must remain in place and readable until the renovation and the post-renovation cleaning verification have been completed. If warning signs have been posted in accordance with 24 CFR 35.1345(b)(2) or 29 CFR 1926.62(m), additional signs are not required by this section.

(2) *Containing the work area.* Before beginning the renovation, the firm must isolate the work area so that no dust or debris leaves the work area while the renovation is being performed. In addition, the firm must maintain the integrity of the containment by ensuring that any plastic or other impermeable materials are not torn or displaced, and taking any other steps necessary to ensure that no dust or debris leaves the work area while the renovation is being performed. The firm must also ensure that containment is installed in such a manner that it does not interfere with occupant and worker egress in an emergency.

(i) *Interior renovations.* The firm must:

(A) Remove all objects from the work area, including furniture, rugs, and window coverings, or cover them with plastic sheeting or other impermeable material with all seams and edges taped or otherwise sealed.

(B) Close and cover all ducts opening in the work area with taped-down plastic sheeting or other impermeable material.

(C) Close windows and doors in the work area. Doors must be covered with plastic sheeting or other impermeable material. Doors used as an entrance to the work area must be covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area.

(D) Cover the floor surface, including installed carpet, with taped-down plastic sheeting or other impermeable material in the work area 6 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater.

(E) Use precautions to ensure that all personnel, tools, and other items, including the exteriors of containers of waste, are free of dust and debris before leaving the work area.

(ii) *Exterior renovations.* The firm must:

(A) Close all doors and windows within 20 feet of the renovation. On multi-story buildings, close all doors and windows within 20 feet of the renovation on the same floor as the renovation, and close all doors and windows on all floors below that are the same horizontal distance from the renovation.

(B) Ensure that doors within the work area that will be used while the job is being performed are covered with plastic sheeting or other impermeable material in a manner that allows workers to pass through while confining dust and debris to the work area.

(C) Cover the ground with plastic sheeting or other disposable impermeable material extending 10 feet beyond the perimeter of surfaces

undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line prevents 10 feet of such ground covering.

(D) In certain situations, the renovation firm must take extra precautions in containing the work area to ensure that dust and debris from the renovation does not contaminate other buildings or other areas of the property or migrate to adjacent properties.

(3) *Prohibited and restricted practices.* The work practices listed below shall be prohibited or restricted during a renovation as follows:

(i) Open-flame burning or torching of lead-based paint is prohibited.

(ii) The use of machines that remove lead-based paint through high speed operation such as sanding, grinding, power planing, needle gun, abrasive blasting, or sandblasting, is prohibited unless such machines are used with HEPA exhaust control.

(iii) Operating a heat gun on lead-based paint is permitted only at temperatures below 1100 degrees Fahrenheit.

(4) *Waste from renovations*—(i) Waste from renovation activities must be contained to prevent releases of dust and debris before the waste is removed from the work area for storage or disposal. If a chute is used to remove waste from the work area, it must be covered.

(ii) At the conclusion of each work day and at the conclusion of the renovation, waste that has been collected from renovation activities must be stored under containment, in an enclosure, or behind a barrier that prevents release of dust and debris out of the work area and prevents access to dust and debris.

(iii) When the firm transports waste from renovation activities, the firm must contain the waste to prevent release of dust and debris.

(5) *Cleaning the work area.* After the renovation has been completed, the firm must clean the work area until no dust, debris or residue remains.

(i) *Interior and exterior renovations.* The firm must:

(A) Collect all paint chips and debris and, without dispersing any of it, seal this material in a heavy-duty bag.

(B) Remove the protective sheeting. Mist the sheeting before folding it, fold the dirty side inward, and either tape shut to seal or seal in heavy-duty bags. Sheeting used to isolate contaminated rooms from non-contaminated rooms must remain in place until after the cleaning and removal of other sheeting. Dispose of the sheeting as waste.

(ii) *Additional cleaning for interior renovations.* The firm must clean all objects and surfaces in the work area and within 2 feet of the work area in the following manner, cleaning from higher to lower:

(A) *Walls.* Clean walls starting at the ceiling and working down to the floor by either vacuuming with a HEPA vacuum or wiping with a damp cloth.

(B) *Remaining surfaces.* Thoroughly vacuum all remaining surfaces and objects in the work area, including furniture and fixtures, with a HEPA vacuum. The HEPA vacuum must be equipped with a beater bar when vacuuming carpets and rugs.

(C) Wipe all remaining surfaces and objects in the work area, except for carpeted or upholstered surfaces, with a damp cloth. Mop uncarpeted floors thoroughly, using a mopping method that keeps the wash water separate from the rinse water, such as the 2-bucket mopping method, or using a wet mopping system.

(b) *Standards for post-renovation cleaning verification*—(1) *Interiors.* (i) A certified renovator must perform a visual inspection to determine whether dust, debris or residue is still present. If dust, debris or residue is present, these conditions must be removed by re-cleaning and another visual inspection must be performed.

(ii) After a successful visual inspection, a certified renovator must:

(A) Verify that each windowsill in the work area has been adequately cleaned, using the following procedure.

(*1*) Wipe the windowsill with a wet disposable cleaning cloth that is damp to the touch. If the cloth matches or is lighter than the cleaning verification card, the windowsill has been adequately cleaned.

(*2*) If the cloth does not match and is darker than the cleaning verification card, re-clean the windowsill as directed in paragraphs (a)(5)(ii)(B) and (a)(5)(ii)(C) of this section, then either use a new cloth or fold the used cloth in such a way that an unused surface is exposed, and wipe the surface again. If the cloth matches or is lighter than the cleaning verification card, that windowsill has been adequately cleaned.

(*3*) If the cloth does not match and is darker than the cleaning verification card, wait for 1 hour or until the surface has dried completely, whichever is longer.

(*4*)After waiting for the windowsill to dry, wipe the windowsill with a dry disposable cleaning cloth. After this wipe, the windowsill has been adequately cleaned.

(B) Wipe uncarpeted floors and countertops within the work area with a wet disposable cleaning cloth. Floors must be wiped using anapplication device with a long handle and a head to which the cloth is attached. The cloth must remain damp at all times while it is being used to wipe the surface for post-renovation cleaning verification. If the surface within the work area is greater than 40 square feet, the surface within the work area must be divided into roughly equal sections that are each less than 40 square feet. Wipe each such section separately with a new wet disposable cleaning cloth. If the cloth used to wipe each section of the surface within the work area matches the cleaning verification card, the surface has been adequately cleaned.

(*1*) If the cloth used to wipe a particular surface section does not match the cleaning verification card, re-clean that section of the surface as directed in paragraphs (a)(5)(ii)(B) and (a)(5)(ii)(C) of this section, then use a new wet disposable cleaning cloth to wipe that section again. If the cloth matches the cleaning verification card, that section of the surface has been adequately cleaned.

(*2*) If the cloth used to wipe a particular surface section does not match the cleaning verification card after the surface has been re-cleaned, wait for 1 hour or until the entire surface within the work area has dried completely, whichever is longer.

(*3*) After waiting for the entire surface within the work area to dry, wipe each section of the surface that has not yet achieved post-renovation cleaning verification with a dry disposable cleaning cloth. After this wipe, that section of the surface has been adequately cleaned.

(iii) When the work area passes the post-renovation cleaning verification, remove the warning signs.

(2) *Exteriors.* A certified renovator must perform a visual inspection to determine whether dust, debris or residue is still present on surfaces in and below the work area, including windowsills and the ground. If dust, debris or residue is present, these conditions must be eliminated and another visual inspection must be performed. When the area passes the visual inspection, remove the warning signs.

(c) *Optional dust clearance testing.* Cleaning verification need not be performed if the contract between the renovation firm and the person contracting for the renovation or another Federal, State, Territorial, Tribal, or local law or regulation requires:

(1) The renovation firm to perform dust clearance sampling at the conclusion of a renovation covered by this subpart.

(2) The dust clearance samples are required to be collected by a certified inspector, risk assessor or dust sampling technician.

(3) The renovation firm is required to re-clean the work area until the dust clearance sample results are below the clearance standards in § 745.227(e)(8) or any applicable State, Territorial, Tribal, or local standard.

(d) *Activities conducted after post-renovation cleaning verification.* Activities that do not disturb paint, such as applying paint to walls that have already been prepared, are not regulated by this subpart if they are conducted after post-renovation cleaning verification has been performed.

■ 10. Section 745.86 is revised to read as follows:

§ 745.86 Recordkeeping and reporting requirements.

(a) Firms performing renovations must retain and, if requested, make available to EPA all records necessary to demonstrate compliance with this subpart for a period of 3 years following completion of the renovation. This 3–year retention requirement does not supersede longer obligations required by other provisions for retaining the same documentation, including any applicable State or Tribal laws or regulations.

(b) Records that must be retained pursuant to paragraph (a) of this section shall include (where applicable):

(1) Reports certifying that a determination had been made by an inspector (certified pursuant to either Federal regulations at § 745.226 or an EPA-authorized State or Tribal certification program) that lead-based paint is not present on the components affected by the renovation, as described in § 745.82(b)(1).

(2) Signed and dated acknowledgments of receipt as described in§ 745.84(a)(1)(i), (a)(2)(i), (b)(1)(i), (c)(1)(i)(A), and (c)(1)(ii)(A).

(3) Certifications of attempted delivery as described in § 745.84(a)(2)(i) and (c)(1)(ii)(A).

(4) Certificates of mailing as described in § 745.84(a)(1)(ii), (a)(2)(ii), (b)(1)(ii), (c)(1)(i)(B), and (c)(1)(ii)(B).

(5) Records of notification activities performed regarding common area renovations, as described in § 745.84(b)(3) and (b)(4), and renovations in child-occupied facilities, as described in § 745.84(c)(2).

(6) Any signed and dated statements received from owner-occupants documenting that the requirements of § 745.85 do not apply. These statements must include a declaration that the renovation will occur in the owner's residence, a declaration that no children under age 6 reside there, a declaration that no pregnant woman resides there, a declaration that the housing is not a child-occupied facility, the address of the unit undergoing renovation, the owner's name, an acknowledgment by the owner that the work practices to be used during the renovation will not necessarily include all of the lead-safe work practices contained in EPA's renovation, repair, and painting rule, the signature of the owner, and the date of signature. These statements must be written in the same language as the text of the renovation contract, if any.

(7) Documentation of compliance with the requirements of § 745.85, including documentation that a certified renovator was assigned to the project, that the certified renovator provided on-the-job training for workers used on the project, that the certified renovator performed or directed workers who performed all of the tasks described in § 745.85(a), and that the certified renovator performed the post-renovation cleaning verification described in § 745.85(b). If the renovation firm was unable to comply with all of the requirements of this rule due to an emergency as defined in § 745.82, the firm must document the nature of the emergency and the provisions of the rule that were not followed. This documentation must include a copy of the certified renovator's training certificate, and a certification by the certified renovator assigned to the project that:

(i) Training was provided to workers (topics must be identified for each worker).

(ii) Warning signs were posted at the entrances to the work area.

(iii) If test kits were used, that the specified brand of kits was used at the specified locations and that the results were as specified.

(iv) The work area was contained by:

(A) Removing or covering all objects in the work area (interiors).

(B) Closing and covering all HVAC ducts in the work area (interiors).

(C) Closing all windows in the work area (interiors) or closing all windows in and within 20 feet of the work area (exteriors).

(D) Closing and sealing all doors in the work area (interiors) or closing and sealing all doors in and within 20 feet of the work area (exteriors).

(E) Covering doors in the work area that were being used to allow passage but prevent spread of dust.

(F) Covering the floor surface, including installed carpet, with taped-down plastic sheeting or other impermeable material in the work area 6 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater (interiors) or covering the ground with plastic sheeting or other disposable impermeable material anchored to the building extending 10 feet beyond the perimeter of surfaces undergoing renovation or a sufficient distance to collect falling paint debris, whichever is greater, unless the property line prevents 10 feet of such ground covering, weighted down by heavy objects (exteriors).

(G) Installing (if necessary) vertical containment to prevent migration of dust and debris to adjacent property (exteriors).

(v) Waste was contained on-site and while being transported off-site.

(vi) The work area was properly cleaned after the renovation by:

(A) Picking up all chips and debris, misting protective sheeting, folding it dirty side inward, and taping it for removal.

(B) Cleaning the work area surfaces and objects using a HEPA vacuum and/or wet cloths or mops (interiors).

(vii) The certified renovator performed the post-renovation cleaning verification (the results of which must be briefly described, including the number of wet and dry cloths used).

(c) When test kits are used, the renovation firm must, within 30 days of the completion of the renovation, provide identifying information as to the manufacturer and model of the test kits used, a description of the components that were tested including their locations, and the test kit results to the person who contracted for the renovation.

(d) If dust clearance sampling is performed in lieu of cleaning verification as permitted by § 745.85(c), the renovation firm must provide, within 30 days of the completion of the renovation, a copy of the dust sampling report to the person who contracted for the renovation.

■ 11. Section 745.87 is amended by revising paragraph (e) to read as follows:

§ 745.87 Enforcement and inspections.

* * * * *

(e) Lead-based paint is assumed to be present at renovations covered by this subpart. EPA may conduct inspections and issue subpoenas pursuant to the provisions of TSCA section 11 (15 U.S.C. 2610) to ensure compliance with this subpart.

■ 12. Section 745.88 is revised to read as follows:

§ 745.88 Recognized test kits.

(a) Effective June 23, 2008, EPA recognizes the test kits that have been determined by National Institute of Standards and Technology research to meet the negative response criteria described in paragraph (c)(1) of this section. This recognition will last until EPA publicizes its recognition of the first test kit that meets both the negative response and positive response criteria in paragraph (c) of this section.

(b) No other test kits will be recognized until they are tested through EPA's Environmental Technology Verification Program or other equivalent EPA approved testing program.

(1) Effective September 1, 2008, to initiate the testing process, a test kit manufacturer must submit a sufficient number of kits, along with the instructions for using the kits, to EPA. The test kit manufacturer should first visit the following website for information on where to apply:*http://www.epa.gov/etv/howtoapply.html*.

(2) After the kit has been tested through the Environmental Technology Verification Program or other equivalent approved EPA testing program, EPA will review the report to determine whether the required criteria have been met.

(3) Before September 1, 2010, test kits must meet only the negative response criteria in paragraph (c)(1) of this section. The recognition of kits that meet only this criteria will last until EPA publicizes its recognition of the first test kits that meets both of the criteria in paragraph (c) of this section.

(4) After September 1, 2010, test kits must meet both of the criteria in paragraph (c) of this section.

(5) If the report demonstrates that the kit meets the required criteria, EPA will issue a notice of recognition to the kit manufacturer, provide them with the report, and post the information on EPA's website.

(6) If the report demonstrates that the kit does not meet the required criteria, EPA will notify the kit manufacturer and provide them with the report.

(c) *Response criteria*—(1) *Negative response criteria.* For paint containing lead at or above the regulated level, 1.0 mg/cm^2 or 0.5% by weight, a demonstrated probability (with 95% confidence) of a negative response less than or equal to 5% of the time.

(2) *Positive response criteria.* For paint containing lead below the regulated level, 1.0 mg/cm^2 or 0.5% by weight, a demonstrated probability (with 95% confidence) of a positive response less than or equal to 10% of the time.

■ 13. Section 745.89 is added to subpart E to read as follows:

§ 745.89 Firm certification.

(a) *Initial certification.* (1) Firms that perform renovations for compensation must apply to EPA for certification to perform renovations or dust sampling. To apply, a firm must submit to EPA a completed ''Application for Firms,'' signed by an authorized agent of the firm, and pay at least the correct amount of fees. If a firm pays more than the correct amount of fees, EPA will reimburse the firm for the excess amount.

(2) After EPA receives a firm's application, EPA will take one of the following actions within 90 days of the date the application is received:

(i) EPA will approve a firm's application if EPA determines that it is complete and that the environmental compliance history of the firm, its principals, or its key employees does not show an unwillingness or inability to maintain compliance with environmental statutes or regulations. An application is complete if it contains all of the information requested on the form and includes at least the correct amount of fees. When EPA approves a firm's application, EPA will issue the firm a certificate with an expiration date not more than 5 years from the date the application is approved. EPA certification allows the firm to perform renovations covered by this section in any State or Indian Tribal area that does not have a renovation program that is authorized under subpart Q of this part.

(ii) EPA will request a firm to supplement its application if EPA determines that the application is incomplete. If EPA requests a firm to supplement its application, the firm must submit the requested information or pay the additional fees within 30 days of the date of the request.

(iii) EPA will not approve a firm's application if the firm does not supplement its application in accordance with paragraph (a)(2)(ii) of this section or if EPA determines that the environmental compliance history of the firm, its principals, or its key employees demonstrates an unwillingness or inability to maintain compliance with environmental statutes or regulations. EPA will send the firm a letter giving the reason for not approving the application. EPA will not refund the application fees. A firm may reapply for certification at any time by filing a new, complete application that includes the correct amount of fees.

(b) *Re-certification.* To maintain its certification, a firm must be re-certified by EPA every 5 years.

(1) *Timely and complete application.* To be re-certified, a firm must submit a complete application for re-certification. A complete application for re-certification includes a completed ''Application for Firms'' which contains all of the information requested by the form and is signed by an authorized agent of the firm, noting on the form that it is submitted as a re-certification. A complete application must also include at least the correct amount of fees. If a firm pays more than the correct amount of fees, EPA will reimburse the firm for the excess amount.

(i) An application for re-certification is timely if it is postmarked 90 days or more before the date the firm's current certification expires. If the firm's application is complete and timely, the firm's current certification will remain in effect until its expiration date or until EPA has made a final decision to approve or disapprove the re-certification application, whichever is later.

(ii) If the firm submits a complete re-certification application less than 90 days before its current certification expires, and EPA does not approve the application before the expiration date, the firm's current certification will expire and the firm will not be able to conduct renovations until EPA approves its re-certification application.

(iii) If the firm fails to obtain recertification before the firm's current certification expires, the firm must not perform renovations or dust sampling until it is certified anew pursuant to paragraph (a) of this section.

(2) *EPA action on an application.* After EPA receives a firm's application for re-certification, EPA will review the application and take one of the following actions within 90 days of receipt:

(i) EPA will approve a firm's application if EPA determines that it is timely and complete and that the environmental compliance history of the firm, its principals, or its key employees does not show an unwillingness or inability to maintain compliance with environmental statutes or regulations. When EPA approves a firm's application for re-certification, EPA will issue the firm a new certificate with an expiration date 5 years from the date that the firm's current certification expires. EPA certification allows the firm to perform renovations or dust sampling covered by this section in any State or Indian Tribal area that does not have a renovation program that is authorized under subpart Q of this part.

(ii) EPA will request a firm to supplement its application if EPA determines that the application is incomplete.

(iii) EPA will not approve a firm's application if it is not received or is not complete as of the date that the firm's current certification expires, or if EPA determines that the environmental compliance history of the firm, its principals, or its key employees demonstrates an unwillingness or inability to maintain compliance with environmental statutes or regulations. EPA will send the firm a letter giving the reason for not approving the application. EPA will not refund the application fees. A firm may reapply for certification at any time by filing a new application and paying the correct amount of fees.

(c) *Amendment of certification.* A firm must amend its certification within 90 days of the date a change occurs to information included in the firm's most recent application. If the firm fails to amend its certification within 90 days of the date the change occurs, the firm may not perform renovations or dust sampling until its certification is amended.

(1) To amend a certification, a firm must submit a completed ''Application for Firms,'' signed by an authorized agent of the firm, noting on the form that it is submitted as an amendment and indicating the information that has changed. The firm must also pay at least the correct amount of fees.

(2) If additional information is needed to process the amendment, or the firm did not pay the correct amount of fees, EPA will request the firm to submit the necessary information or fees. The firm's certification is not amended until the firm complies with the request.

(3) Amending a certification does not affect the certification expiration date.

(d) *Firm responsibilities.* Firms performing renovations must ensure that:

(1) All individuals performing renovation activities on behalf of the firm are either certified renovators or have been trained by a certified renovator in accordance with § 745.90.

(2) A certified renovator is assigned to each renovation performed by the firm and discharges all of the certified renovator responsibilities identified in § 745.90.

(3) All renovations performed by the firm are performed in accordance with the work practice standards in § 745.85.

(4) The pre-renovation education requirements of § 745.84 have been performed.

(5) The recordkeeping requirements of § 745.86 are met.

■ 14. Section 745.90 is added to subpart E to read as follows:

§ 745.90 Renovator certification and dust sampling technician certification.

(a) *Renovator certification and dust sampling technician certification.* (1) To become a certified renovator or certified dust sampling technician, an individual must successfully complete the appropriate course accredited by EPA under § 745.225 or by a State or Tribal program that is authorized under subpart Q of this part. The course completion certificate serves as proof of certification. EPA renovator certification allows the certified individual to perform renovations covered by this section in any State or Indian Tribal area that does not have a renovation program that is authorized under subpart Q of this part. EPA dust sampling technician certification allows the certified individual to perform dust clearance sampling under § 745.85(c) in any State or Indian Tribal area that does not have a renovation program that is authorized under subpart Q of this part.

(2) Individuals who have successfully completed an accredited abatement worker or supervisor course, or individuals who have successfully completed an EPA, HUD, or EPA/HUD model renovation training course may take an accredited refresher renovator training course in lieu of the initial renovator training course to become a certified renovator.

(3) Individuals who have successfully completed an accredited lead-based paint inspector or risk assessor course may take an accredited refresher dust sampling technician course in lieu of the initial training to become a certified dust sampling technician.

(4) To maintain renovator certification or dust sampling technician certification, an individual must complete a renovator or dust sampling technician refresher course accredited by EPA under § 745.225 or by a State or Tribal program that is authorized under subpart Q of this part within 5 years of the date the individual completed the initial course described in paragraph (a)(1) of this section. If the individual does not complete a refresher course within this time, the individual must re-take the initial course to become certified again.

(b) *Renovator responsibilities.* Certified renovators are responsible for ensuring compliance with § 745.85 at all renovations to which they are assigned. A certified renovator:

(1) Must perform all of the tasks described in § 745.85(b) and must either perform or direct workers who perform all of the tasks described in § 745.85(a).

(2) Must provide training to workers on the work practices they will be using in performing their assigned tasks.

(3) Must be physically present at the work site when the signs required by § 745.85(a)(1) are posted, while the work area containment required by § 745.85(a)(2) is being established, and while the work area cleaning required by § 745.85(a)(5) is performed.

(4) Must regularly direct work being performed by other individuals to ensure that the work practices are being followed, including maintaining the integrity of the containment barriers and ensuring that dust or debris does not spread beyond the work area.

(5) Must be available, either on-site or by telephone, at all times that renovations are being conducted.

(6) When requested by the party contracting for renovation services, must use an acceptable test kit to determine whether components to be affected by the renovation contain lead-based paint.

(7) Must have with them at the work site copies of their initial course completion certificate and their most recent refresher course completion certificate.

(8) Must prepare the records required by § 745.86(b)(7).

(c) *Dust sampling technician responsibilities.* When performing optional dust clearance sampling under § 745.85(c), a certified dust sampling technician:

(1) Must collect dust samples in accordance with § 745.227(e)(8), must send the collected samples to a laboratory recognized by EPA under TSCA section 405(b), and must compare the results to the clearance levels in accordance with § 745.227(e)(8).

(2) Must have with them at the work site copies of their initial course completion certificate and their most recent refresher course completion certificate.

■ 15. Section 745.91 is added to subpart E to read as follows:

§ 745.91 Suspending, revoking, or modifying an individual's or firm's certification.

(a)(1) *Grounds for suspending, revoking, or modifying an individual's certification.* EPA may suspend, revoke, or modify an individual's certification if the individual fails to comply with Federal lead-based paint statutes or regulations. EPA may also suspend, revoke, or modify a certified renovator's certification if the renovator fails to ensure that all assigned renovations comply with § 745.85. In addition to an administrative or judicial finding of violation, execution of a consent

agreement in settlement of an enforcement action constitutes, for purposes of this section, evidence of a failure to comply with relevant statutes or regulations.

(2) *Grounds for suspending, revoking, or modifying a firm's certification.* EPA may suspend, revoke, or modify a firm's certification if the firm:

(i) Submits false or misleading information to EPA in its application for certification or re-certification.

(ii) Fails to maintain or falsifies records required in § 745.86.

(iii) Fails to comply, or an individual performing a renovation on behalf of the firm fails to comply, with Federal lead-based paint statutes or regulations. In addition to an administrative or judicial finding of violation, execution of a consent agreement in settlement of an enforcement action constitutes, for purposes of this section, evidence of a failure to comply with relevant statutes or regulations.

(b) *Process for suspending, revoking, or modifying certification.* (1) Prior to taking action to suspend, revoke, or modify an individual's or firm's certification, EPA will notify the affected entity in writing of the following:

(i) The legal and factual basis for the proposed suspension, revocation, or modification.

(ii) The anticipated commencement date and duration of the suspension, revocation, or modification.

(iii) Actions, if any, which the affected entity may take to avoid suspension, revocation, or modification, or to receive certification in the future.

(iv) The opportunity and method for requesting a hearing prior to final suspension, revocation, or modification.

(2) If an individual or firm requests a hearing, EPA will:

(i) Provide the affected entity an opportunity to offer written statements in response to EPA's assertions of the legal and factual basis for its proposed action.

(ii) Appoint an impartial official of EPA as Presiding Officer to conduct the hearing.

(3) The Presiding Officer will:

(i) Conduct a fair, orderly, and impartial hearing within 90 days of the request for a hearing.

(ii) Consider all relevant evidence, explanation, comment, and argument submitted.

(iii) Notify the affected entity in writing within 90 days of completion of the hearing of his or her decision and order. Such an order is a final agency action which may be subject to judicial review. The order must contain the commencement date and duration of the suspension, revocation, or modification.

(4) If EPA determines that the public health, interest, or welfare warrants immediate action to suspend the certification of any individual or firm prior to the opportunity for a hearing, it will:

(i) Notify the affected entity in accordance with paragraph (b)(1)(i) through (b)(1)(iii) of this section, explaining why it is necessary to suspend the entity's certification before an opportunity for a hearing.

(ii) Notify the affected entity of its right to request a hearing on the immediate suspension within 15 days of the suspension taking place and the procedures for the conduct of such a hearing.

(5) Any notice, decision, or order issued by EPA under this section, any transcript or other verbatim record of oral testimony, and any documents filed by a certified individual or firm in a hearing under this section will be available to the public, except as otherwise provided by section 14 of TSCA or by part 2 of this title. Any such hearing at which oral testimony is presented will be open to the public, except that the Presiding Officer may exclude the public to the extent necessary to allow presentation of information which may be entitled to confidential treatment under section 14 of TSCA or part 2 of this title.

(6) EPA will maintain a publicly available list of entities whose certification has been suspended, revoked, modified, or reinstated.

(7) Unless the decision and order issued under paragraph (b)(3)(iii) of this section specify otherwise:

(i) An individual whose certification has been suspended must take a refresher training course (renovator or dust sampling technician) in order to make his or her certification current.

(ii) An individual whose certification has been revoked must take an initial renovator or dust sampling technician course in order to become certified again.

(iii) A firm whose certification has been revoked must reapply for certification after the revocation ends in order to become certified again. If the firm's certification has been suspended and the suspension ends less than 5 years after the firm was initially certified or re-certified, the firm does not need to do anything to re-activate its certification.

■ 16. Section 745.220 is amended by revising paragraph (a) to read as follows:

§ 745.220 Scope and applicability.

(a) This subpart contains procedures and requirements for the accreditation of training programs for lead-based paint activities and renovations, procedures and requirements for the certification of individuals and firms engaged in lead-based paint activities, and work practice standards for performing such activities. This subpart also requires that, except as discussed below, all lead-based paint activities, as defined in this subpart, be performed by certified individuals and firms.

* * * * *

■ 17. Section 745.225 is amended as follows:

■ a. Revise paragraph (a).

■ b. Revise the introductory text of paragraph (b), revise paragraph (b)(1)(ii), and add paragraph (b)(1)(iv)(C).

■ c. Revise the introductory text of paragraph (c), add paragraphs (c)(6)(vi), (c)(6)(vii), (c)(8)(vi), and (c)(8)(vii), and revise paragraphs (c)(8)(iv) and (c)(10).

■ d. Remove the phrase ''lead-based paint activities'' and add in its place the phrase ''renovator, dust sampling technician, or lead-based paint activities'' wherever it appears in paragraph (c)(13).

■ e. Add paragraph (c)(14)(ii)(D)(*6*).

■ f. Add paragraphs (d)(6) and (d)(7).

■ g. Revise the introductory text of paragraph (e).

■ h. Remove the word ''activities'' wherever it appears in paragraph (e)(1).

■ i. Revise paragraph (e)(2).

§ 745.225 Accreditation of training programs; target housing and child-occupied facilities.

(a) *Scope.* (1) A training program may seek accreditation to offer courses in any of the following disciplines: Inspector, risk assessor, supervisor, project designer, abatement worker, renovator, and dust sampling technician. A training program may also seek accreditation to offer refresher courses for each of the above listed disciplines.

(2) Training programs may first apply to EPA for accreditation of their lead-based paint activities courses or refresher courses pursuant to this section on or after August 31, 1998. Training programs may first apply to EPA for accreditation of their renovator or dust sampling technician courses or refresher courses pursuant to this section on or after April 22, 2009.

(3) A training program must not provide, offer, or claim to provide EPA-accredited lead-based paint activities courses without applying for and receiving accreditation from EPA as required under paragraph (b) of this section on or after March 1, 1999. A training program must not provide, offer, or claim to provide EPA-accredited renovator or dust sampling technician courses without applying for

and receiving accreditation from EPA as required under paragraph (b) of this section on or after June 23, 2008.

(b) *Application process.* The following are procedures a training program must follow to receive EPA accreditation to offer lead-based paint activities courses, renovator courses, or dust sampling technician courses:

(1) * * *

(ii) A list of courses for which it is applying for accreditation. For the purposes of this section, courses taught in different languages are considered different courses, and each must independently meet the accreditation requirements.

* * * * *

(iv) * * *

(C) When applying for accreditation of a course in a language other than English, a signed statement from a qualified, independent translator that they had compared the course to the English language version and found the translation to be accurate.

* * * * *

(c) *Requirements for the accreditation of training programs.* For a training program to obtain accreditation from EPA to offer lead-based paint activities courses, renovator courses, or dust sampling technician courses, the program must meet the following requirements:

* * * * *

(6) * * *

(vi) The renovator course must last a minimum of 8 training hours, with a minimum of 2 hours devoted to hands-on training activities. The minimum curriculum requirements for the renovator course are contained in paragraph (d)(6) of this section. Hands-on training activities must cover renovation methods that minimize the creation of dust and lead-based paint hazards, interior and exterior containment and cleanup methods, and post-renovation cleaning verification.

(vii) The dust sampling technician course must last a minimum of 8 training hours, with a minimum of 2 hours devoted to hands-on training activities. The minimum curriculum requirements for the dust sampling technician course are contained in paragraph (d)(7) of this section. Hands-on training activities must cover dust sampling methodologies.

* * * * *

(8) * * *

(iv) For initial inspector, risk assessor, project designer, supervisor, or abatement worker course completion certificates, the expiration date of interim certification, which is 6 months from the date of course completion.

* * * * *

(vi) The language in which the course was taught.

(vii) For renovator and dust sampling technician course completion certificates, a photograph of the individual.

* * * * *

(10) Courses offered by the training program must teach the work practice standards contained in § 745.85 or § 745.227, as applicable, in such a manner that trainees are provided with the knowledge needed to perform the renovations or lead-based paint activities they will be responsible for conducting.

* * * * *

(14) * * *

(ii) * * *

(D) * * *

(*6*) A digital photograph of the student.

(d) * * *

(6) *Renovator.* (i) Role and responsibility of a renovator.

(ii) Background information on lead and its adverse health effects.

(iii) Background information on EPA, HUD, OSHA, and other Federal, State, and local regulations and guidance that pertains to lead-based paint and renovation activities.

(iv) Procedures for using acceptable test kits to determine whether paint is lead-based paint.

(v) Renovation methods to minimize the creation of dust and lead-based paint hazards.

(vi) Interior and exterior containment and cleanup methods.

(vii) Methods to ensure that the renovation has been properly completed, including cleaning verification, and clearance testing.

(viii) Waste handling and disposal.

(ix) Providing on-the-job training to other workers.

(x) Record preparation.

(7) *Dust sampling technician.* (i) Role and responsibility of a dust sampling technician.

(ii) Background information on lead and its adverse health effects.

(iii) Background information on Federal, State, and local regulations and guidance that pertains to lead-based paint and renovation activities.

(iv) Dust sampling methodologies.

(v) Clearance standards and testing.

(vi) Report preparation.

* * * * *

(e) *Requirements for the accreditation of refresher training programs.* A training program may seek accreditation to offer refresher training courses in any of the following disciplines: Inspector, risk assessor, supervisor, project designer, abatement worker, renovator, and dust sampling technician. To obtain EPA accreditation to offer refresher training, a training program must meet the following minimum requirements:

* * * * *

(2) Refresher courses for inspector, risk assessor, supervisor, and abatement worker must last a minimum of 8 training hours. Refresher courses for project designer, renovator, and dust sampling technician must last a minimum of 4 training hours.

* * * * *

■ 18. Section 745.320 is amended by revising paragraph (c) to read as follows:

§ 745.320 Scope and purpose.

* * * * *

(c) A State or Indian Tribe may seek authorization to administer and enforce all of the provisions of subpart E of this part, just the pre-renovation education provisions of subpart E of this part, or just the training, certification, accreditation, and work practice provisions of subpart E of this part. The provisions of §§ 745.324 and 745.326 apply for the purposes of such program authorizations.

* * * * *

■ 19. Section 745.324 is amended as follows:

■ a. Revise paragraph (a)(1).

■ b. Remove the phrase ''lead-based paint training accreditation and certification'' from the second sentence of paragraph (b)(1)(iii).

■ c. Revise paragraph (b)(2)(ii).

■ d. Revise paragraphs (e)(2)(i) and (e)(4).

■ e. Revise paragraph (f)(2).

■ f. Revise paragraph (i)(8).

§ 745.324 Authorization of State or Tribal programs.

(a) *Application content and procedures.* (1) Any State or Indian Tribe that seeks authorization from EPA to administer and enforce the provisions of subpart E or subpart L of this part must submit an application to the Administrator in accordance with this paragraph.

* * * * *

(b) * * *

(2) * * *

(ii) An analysis of the State or Tribal program that compares the program to the Federal program in subpart E or subpart L of this part, or both. This analysis must demonstrate how the program is, in the State's or Indian Tribe's assessment, at least as protective as the elements in the Federal program at subpart E or subpart L of this part, or

both. EPA will use this analysis to evaluate the protectiveness of the State or Tribal program in making its determination pursuant to paragraph (e)(2)(i) of this section.

* * * * *

(e) * * *

(2) * * *

(i) The State or Tribal program is at least as protective of human health and the environment as the corresponding Federal program under subpart E or subpart L of this part, or both; and

* * * * *

(4) If the State or Indian Tribe applies for authorization of State or Tribal programs under both subpart E and subpart L, EPA may, as appropriate, authorize one program and disapprove the other.

* * * * *

(f) * * *

(2) If a State or Indian Tribe does not have an authorized program to administer and enforce the pre-renovation education requirements of subpart E of this part by August 31, 1998, the Administrator will, by such date, enforce those provisions of subpart E of this part as the Federal program for that State or Indian Country. If a State or Indian Tribe does not have an authorized program to administer and enforce the training, certification and accreditation requirements and work practice standards of subpart E of this part by April 22, 2009, the Administrator will, by such date, enforce those provisions of subpart E of this part as the Federal program for that State or Indian Country.

* * * * *

(i) * * *

(8) By the date of such order, the Administrator will establish and enforce the provisions of subpart E or subpart L of this part, or both, as the Federal program for that State or Indian Country.

■ 20. Section 745.326 is revised to read as follows:

§ 745.326 Renovation: State and Tribal program requirements.

(a) *Program elements*. To receive authorization from EPA, a State or Tribal program must contain the following program elements:

(1) For pre-renovation education programs, procedures and requirements for the distribution of lead hazard information to owners and occupants of target housing and child-occupied facilities before renovations for compensation.

(2) For renovation training, certification, accreditation, and work practice standards programs:

(i) Procedures and requirements for the accreditation of renovation and dust sampling technician training programs.

(ii) Procedures and requirements for the certification of renovators and dust sampling technicians.

(iii) Procedures and requirements for the certification of individuals and/or firms.

(iv) Requirements that all renovations be conducted by appropriately certified individuals and/or firms.

(v) Work practice standards for the conduct of renovations.

(3) For all renovation programs, development of the appropriate infrastructure or government capacity to effectively carry out a State or Tribal program.

(b) *Pre-renovation education*. To be considered at least as protective as the Federal program, the State or Tribal program must:

(1) Establish clear standards for identifying renovation activities that trigger the information distribution requirements.

(2) Establish procedures for distributing the lead hazard information to owners and occupants of housing and child-occupied facilities prior to renovation activities.

(3) Require that the information to be distributed include either the pamphlet titled *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools,* developed by EPA under section 406(a) of TSCA, or an alternate pamphlet or package of lead hazard information that has been submitted by the State or Tribe, reviewed by EPA, and approved by EPA for that State or Tribe. Such information must contain renovation-specific information similar to that in *Renovate Right: Important Lead Hazard Information for Families, Child Care Providers and Schools,* must meet the content requirements prescribed by section 406(a) of TSCA, and must be in a format that is readable to the diverse audience of housing and child-occupied facility owners and occupants in that State or Tribe.

(i) A State or Tribe with a pre-renovation education program approved before June 23, 2008, must demonstrate that it meets the requirements of this section no later than the first report that it submits pursuant to § 745.324(h) on or after April 22, 2009.

(ii) A State or Tribe with an application for approval of a pre-renovation education program submitted but not approved before June 23, 2008, must demonstrate that it meets the requirements of this section either by amending its application or in the first report that it submits pursuant to§ 745.324(h) of this part on or after April 22, 2009.

(iii) A State or Indian Tribe submitting its application for approval of a pre-renovation education program on or after June 23, 2008, must demonstrate in its application that it meets the requirements of this section.

(c) *Accreditation of training programs*. To be considered at least as protective as the Federal program, the State or Tribal program must meet the requirements of either paragraph (c)(1) or (c)(2) of this section:

(1) The State or Tribal program must establish accreditation procedures and requirements, including:

(i) Procedures and requirements for the accreditation of training programs, including, but not limited to:

(A) Training curriculum requirements.

(B) Training hour requirements.

(C) Hands-on training requirements.

(D) Trainee competency and proficiency requirements.

(E) Requirements for training program quality control.

(ii) Procedures and requirements for the re-accreditation of training programs.

(iii) Procedures for the oversight of training programs.

(iv) Procedures and standards for the suspension, revocation, or modification of training program accreditations; or

(2) The State or Tribal program must establish procedures and requirements for the acceptance of renovation training offered by training providers accredited by EPA or a State or Tribal program authorized by EPA under this subpart.

(d) *Certification of renovator*s. To be considered at least as protective as the Federal program, the State or Tribal program must:

(1) Establish procedures and requirements for individual certification that ensure that certified renovators are trained by an accredited training program.

(2) Establish procedures and requirements for re-certification.

(3) Establish procedures for the suspension, revocation, or modification of certifications.

(e) *Work practice standards for renovations*. To be considered at least as protective as the Federal program, the State or Tribal program must establish standards that ensure that renovations are conducted reliably, effectively, and safely. At a minimum, the State or Tribal program must contain the following requirements:

(1) Renovations must be conducted only by certified contractors.

(2) Renovations are conducted using lead-safe work practices that are at least

as protective to occupants as the requirements in § 745.85.

(3) Certified contractors must retain appropriate records.

■ 21. Section 745.327 is amended by revising paragraphs (b)(1)(iv) and (b)(2)(ii) to read as follows:

§ 745.327 State or Indian Tribal lead-based paint compliance and enforcement programs.

* * * * *

(b) * * *

(1) * * *

(iv) Requirements that regulate the conduct of renovation activities as described at § 745.326.

(2) * * *

(ii) For the purposes of enforcing a renovation program, State or Tribal officials must be able to enter a firm's place of business or work site.

* * * * *

■ 22. Section 745.339 is revised to read as follows:

§ 745.339 Effective date.

States and Indian Tribes may seek authorization to administer and enforce subpart L of this part pursuant to this subpart at any time. States and Indian Tribes may seek authorization to administer and enforce the pre-renovation education provisions of subpart E of this part pursuant to this subpart at any time. States and Indian Tribes may seek authorization to administer and enforce all of subpart E of this part pursuant to this subpart effective June 23, 2008.

[FR Doc. E8–8141 Filed 4–21–08; 8:45 am]

BILLING CODE 6560-50-S

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 745

[EPA–HQ–OPPT–2004–0126; FRL–8358–6]

Lead Hazard Information Pamphlet; Notice of Availability

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of availability.

SUMMARY: This notice announces the availability of EPA's new lead hazard information pamphlet for renovation activities, *Renovate Right: Lead Hazard Information for Families, Child Care Providers and Schools (Renovate Right).* There is an increased risk of exposure to lead-based paint hazards during renovation activities, particularly for children under 6 years of age. To better inform families, child care providers, and schools about the risks and to encourage greater public health and safety during renovation activities in target housing and child-occupied facilities, EPA has developed a renovation-specific information pamphlet. This new pamphlet gives information on lead-based paint hazards, lead testing, how to select a contractor, what precautions to take during the renovation, and proper cleanup activities.

DATES: After June 23, 2008, the new pamphlet or *Protect Your Family From Lead in Your Home* may be used for compliance with the Pre-Renovation Education Rule under TSCA section 406(b). After December 22, 2008, the new pamphlet must be used exclusively.

FOR FURTHER INFORMATION CONTACT: *For general information contact*: Colby Lintner, Regulatory Coordinator, Environmental Assistance Division (7408M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460–0001; telephone number: (202) 554–1404; e-mail address: *TSCA-Hotline@epa.gov*.

For technical information contact: Mike Wilson, National Program Chemicals Division, Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460–0001; telephone number (201) 566–0521; e-mail address: *wilson.mike@epa.gov*.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

You may be potentially affected by this action if you perform renovations of target housing or child-occupied facilities for compensation. ''Target housing'' is defined in section 401 of TSCA as any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any child under age 6 resides or is expected to reside in such housing) or any 0-bedroom dwelling. EPA's Renovation, Repair, and Painting rule defines a child-occupied facility as a building, or a portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least 2 different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may be located in public or commercial buildings or in target housing. Potentially affected entities may include, but are not limited to:

- Building construction (NAICS code 236), e.g., single family housing construction, multi-family housing construction, residential remodelers.
- Specialty trade contractors (NAICS code 238), e.g., plumbing, heating, and air-conditioning contractors, painting and wall covering contractors, electrical contractors, finish carpentry contractors, drywall and insulation contractors, siding contractors, tile and terrazzo contractors, glass and glazing contractors.
- Real estate (NAICS code 531), e.g., lessors of residential buildings and dwellings, residential property managers.
- Child day care services (NAICS code 624410).
- Elementary and secondary schools (NAICS code 611110), e.g., elementary schools with kindergarten classrooms.

This listing is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in this unit could also be affected. The North American Industrial Classification System (NAICS) codes have been provided to assist you and others in determining whether this action might apply to certain entities. To determine whether you or your business may be affected by this action, you should carefully examine the applicability provisions in 40 CFR 745.82. If you have any questions regarding the applicability of this action to a particular entity, consult the technical person listed under **FOR FURTHER INFORMATION CONTACT**.

B. How Can I Get Copies of the Pamphlet and Other Related Information?

1. *The pamphlet*. Single copies of the pamphlet may be obtained by calling the National Lead Information Clearinghouse (NLIC) at 1–800–424–LEAD or TDD: 1–800–526–5456, or the EPA Public Information Center at (202) 260–2080. Multiple copies are available through the Government Printing Office (GPO). The public may order by calling the GPO Order Desk at (202) 512–1800, faxing (202) 512–2233, or writing to Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250–7954. Request the publication by title, *Renovate Right: Lead Hazard Information for Families, Child Care Providers and Schools*. The pamphlet is also available on EPA's website at *http://www.epa.gov/lead*. The pamphlet may be reproduced by an individual or corporation without permission from EPA.

Idaho Weatherization Assistance Program Refrigerator Replacement Program

Refrigerators being considered for replacement under the Refrigerator Replacement Program must be of the same type and size as the existing unit. Top freezer type refrigerators will be used as replacements. Refrigerators will be in the 15 to 21 cubic foot size, as determined by the number of household members.

If you purchased the old refrigerator, then the new refrigerator is also yours. If your dwelling is a rental unit and came with a working refrigerator, the new refrigerator must remain with the unit in the event you move out. Your landlord will be notified when the old refrigerator is replaced. Your landlord will **not** be able to keep the old refrigerator.

The contractors supplying the refrigerator will remove all refrigerators replaced from the participant dwelling. There are **no exceptions; all old refrigerators must be removed.**

The contractor that supplies the refrigerator will be the contact for any warranty repairs, should they become necessary.

For the smoothest installation:

- You will be notified when your new refrigerator will be installed. An adult must be present for delivery. If you cannot keep the delivery appointment, please notify the agency 24 hours in advance.
- Let the installation contractor know what side the refrigerator door should hinge.
- Make sure the old refrigerator is cleaned out prior to the installation of the new refrigerator. If possible, don't shop for foods requiring refrigeration the night before your installation appointment.
- Be prepared to clean behind the old refrigerator before the new refrigerator is installed.

To get the most from your new refrigerator:

- Unplug or recycle second refrigerators.
- Set thermostat controls to avoid overcooling food and beverages. Recommended settings for fresh food compartments are 34° - 40° Fahrenheit and -2° - 5° Fahrenheit in the freezer.
- Understand and use the energy/power saver switch feature. It keeps moisture from condensing on outside surfaces.
- Cover food containers tightly to reduce evaporation which keeps food moist and fresh.

All items above must be agreed upon prior to being considered for the Refrigerator Replacement Program.

_____ _____

Signature of Participant Date

_____ _____

Signature of Participant Date

Idaho Weatherization Assistance Program Refrigerator Replacement Program

Memorandum of Understanding

By signature on this memorandum, the dealer indicated agrees to the conditions set forth below:

Dealer/Business Name: _____

Dealer Contact Person: _____

Telephone Number: _____

Mailing Address: _____

General Conditions:

1. Dealer will deliver to Weatherization Assistance Program participant's home the appliance ordered by _____.
2. Dealer certified the appliance is an Energy Star-qualified appliance.
3. Dealer will remove the existing appliance and will perform appropriate disposal of the existing appliance (including removal and recycling of Freon) and assuring future use is prevented.
4. Dealer will provide normal back-up service after the sale in accordance with applicable warranty.
5. Dealer agrees to make the same models available to the public.

_____ _____

Signature of Authorized Representative Date

_____ _____

Signature of Direct Service Provider Representative Date

CORE COMPETENCIES FOR THE WEATHERIZATION ASSISTANCE PROGRAM

DEVELOPED BY:

THE WEATHERIZATION TRAINERS CONSORTIUM

FOR:

U.S. DEPARTMENT OF ENERGY
WEATHERIZATION ASSISTANCE PROGRAM

MARCH 26, 2007

OVERVIEW

The Weatherization Trainers Consortium developed this document for the U.S. Department of Energy's (DOE's) Weatherization Assistance Program for Low-Income Persons. The Weatherization Trainers Consortium represents weatherization training centers, independent trainers, state program managers, and state monitors from across the country.

The Weatherization *Plus* Committee is a group the weatherization stakeholders charged with helping DOE to strategically plan the evolution of the Weatherization Assistance Program. A Weatherization Plus subcommittee organized a conference call among a group of weatherization trainers to obtain their input on a Weatherization *Plus* initiative to ensure the consistent delivery of high-quality weatherization services nationwide. The trainers saw the benefit of regular communication to network and share training resources. An initial face-to-face meeting of weatherization trainers was organized at the 2005 National Weatherization Technical Training Conference in Atlanta, Georgia, and monthly conference calls have been conducted ever since.

From these conversations, the Weatherization Trainers Consortium was formalized and the need identified for a set of core competencies for the various staff positions that implement the Weatherization Program. The Consortium believes this working document can:

- Increase awareness of the specialized skills and knowledge that are required to run an effective weatherization program;
- Help state and local weatherization agencies hire staff with a strong potential to perform well and prosper in the program;
- Serve as a foundation in establishing standardized curricula to ensure the consistent delivery of high-quality weatherization services nationwide; and
- Put upward pressure on salaries to reduce staff turnover.

As a working document, suggestions for improvement are continually sought. Please forward suggestions to:

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D&R International, Ltd.
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Silver Spring, MD 20910
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CORE COMPETENCIES FOR THE WEATHERIZATION ASSISTANCE PROGRAM

INTRODUCTION

Specialized knowledge and skills are required at the local, state, and federal level to run an effective Weatherization Program. While there is a general understanding of the competencies required, these have not been articulated on a national scale.

As part of the Weatherization *Plus* effort to plan the continued evolution of the Weatherization Program, a subcommittee was formed to increase the consistency of quality weatherization services delivered to low-income homes across the country. The goal is that every house that is weatherized receives all appropriate, cost-effective measures installed properly to provide long-term savings.

As a first step, this means recognizing the varying approaches states use to train staff.

- Some states require technical staff at local agencies to obtain certification from an organization such as the Building Performance Institute, while other states have developed their own certification criteria.
- Many states do not have formal certification requirements, but instead require local weatherization staff to attend standardized training courses offered on a regular basis.
- Others have no standardized certification or training requirements, but offer training periodically as the need is perceived and funds allow.

Technical weatherization training for auditors, technicians, and monitors is available from many training centers and independent trainers across the country. Only a few states have developed administrative training for weatherization program managers at the local level. In-depth administrative training for state weatherization staff is even harder to find outside National Association for State Community Services Programs (NASCSP) conference "newcomer" sessions.

The Weatherization *Plus* subcommittee and the Weatherization Trainers Consortium believe that publishing a set of core competencies will increase awareness and raise expectations. Not all the competencies will be appropriate for every state. Workers repairing or replacing heating and cooling systems often require certification or licensing from the state. Therefore, this work may be subcontracted to licensed contractors outside the Weatherization Program. However, just because a heating, ventilation, and air conditioning (HVAC) contractor is licensed by the state does not mean they possess the HVAC competencies required by the Weatherization Program. Someone at the local agency must be competent to specify what work the contractor is to do and to verify that the completed work complies with state and local codes as well as the technical standards of the Weatherization Program.

The competencies that a weatherization worker should possess depend on their position. For example, an auditor needs to conduct diagnostic testing that may not be required of an installer. The point of entry also dictates which core competencies are required. An

entry-level installer requires a minimum set of competencies. This installer must acquire additional skills to become a crew chief, and still more to become an auditor. A new auditor hired off the street must already possess auditor-level competencies as a condition of hire. These increasing levels of competency also provide a career or development path for agency and contractor personnel.

The following core competencies were compiled from course offerings of several weatherization training centers and from the technical program standards of a handful of states. Core competencies for the following topical areas are listed:

- Basic competencies,
- Safe work practices,
- Building evaluation,
- Measure installation,
- Final inspection,
- Consumer education,
- Monitoring,
- Program management, and
- Training.

Definitions

- ***Competency*** means the possession of a minimum level of knowledge and proficiency required to collect appropriate information, make informed decisions, and physically take the needed actions to deliver the high-quality weatherization service in question.
- ***Possess a working knowledge of*** means to:
  - Know how a particular topic impacts the weatherization process;
  - Have the relevant information committed to memory or be able to locate it in readily available sources; and
  - Use the knowledge to make informed decisions and guide weatherization work.
- ***Demonstrate the ability to*** means to:
  - Physically conduct a test, procedure, or technique on an actual house, a prop, or in a training lab in the presence of someone qualified to assess the particular competency.

BASIC COMPETENCIES

All weatherization workers must possess the following Basic Competencies:

- Ability to read and write legibly;
- Basic verbal and written communication skills;
- Basic construction knowledge;
- Basic math skills (see appendix for a test to verify basic math skills); and
- Basic computer skills (see appendix for a test to verify basic computer skills).

Depending on the position of the weatherization worker, the following Core Competencies help ensure the delivery of effective weatherization services.

SAFE WORK PRACTICES

All field workers must exhibit safe work practices by possess the following competencies.

- Possess a working knowledge of:
  - U.S. Department of Energy (DOE) program regulations/policy and Environmental Protection Agency (EPA) guidelines for asbestos, lead, mold, and other health hazards;
  - Material Safety Data Sheets; and
  - Occupational Safety and Health Act (OSHA) standards:
    - Ladder safety;
    - Fall protection;
    - Personal protective equipment;
    - Respiratory protection;
    - Motor vehicles;
    - Power-operated hand tools;
    - Fire prevention;
    - Permit-required confined spaces;
    - Other worker-related OSHA standards.
- Demonstrate the ability to:
  - Select, fit, and use the appropriate Personal Protection Equipment for a particular task;
  - Safely use basic hand and power tools;
  - Use a basic first aid kit to treat common job-site injuries;
  - Work lead safe;
  - Identify serious mold conditions; and
  - Assess work area safety hazards.

INSTALLER

The following competencies are required by workers that install weatherization measures.

- ***Prerequisites***
  - Possess *Safe Work Practices* competencies
- ***Air Sealing***
  - Possess a working knowledge of:
    - Proper materials selection based on location of leakage areas
    - Minimum ventilation rates.
  - Demonstrate the ability to:
    - Use the blower door to locate leakage sites within the building
    - Seal attic and floor bypasses at penetrations for plumbing, electrical wiring, flue vents, ducts; dropped soffits, and balloon-framed walls;
    - Seal typical bypasses in kneewalls and finished attic spaces;
    - Seal basement band joists;
    - Properly apply caulk and spray foam insulation;

        - Identify, select, and install weatherstripping on doors, windows, and attic hatches;
        - Cut glass, replace broken window panes, and apply glazing compound;
        - Repair plaster and sheetrock (drywall); and
        - Modify or install mechanical ventilation to ensure acceptable indoor air quality for post-air-sealing conditions.
- ***Duct Sealing***
    - Demonstrate the ability to:
        - Properly seal duct connections with mastic and fiberglass mesh tape or other approved material; and
        - Repair or modify duct systems as specified in a work order.
- ***Insulation***
    - Possess a working knowledge of:
        - Properties and appropriate application of different insulation materials; and
        - Potential hazards of insulating around knob-and-tube wiring.
    - Demonstrate the ability to:
        - Install blown and batt attic insulation;
        - Access closed wall cavities and properly install dense-packed cellulose wall insulation including removing and replacing siding;
        - Install blown insulation and batt insulation in a floor;
        - Install water heater installation blankets;
        - Install insulation on ducts, hydronic distribution pipes, and domestic hot water pipes; and
        - Safely operate and properly maintain insulation blowing machines and generators.
- ***Base-Load Measures***
    - Demonstrate the ability to:
        - Replace incandescent light bulbs with compact fluorescent lamps while maintaining or improving lighting levels; and
        - Install low-flow showerheads and faucet aerators;
            - Assess the existing condition of plumbing pipes and faucets that may prohibit these measures.

CREW CHIEF

Personnel that supervise field workers such as *Installers* must possess the following competencies.

- ***Prerequisites***
    - Possess *Safe Work Practices* and *Installer* competencies.
    - Possess a working knowledge of building science principles.
- ***Project Management***
    - Demonstrate the ability to:
        - Manage a crew of *Installers* so weatherization work is conducted safely, effectively, and efficiently;
        - Ensure that the job site and *Installers* comply with the *Safe Work Practices* described previously;

        - Maintain quality control of weatherization work and ensure it meets program stands;
        - Understand a work order;
        - Order and obtain materials, supplies, and equipment in time to avoid delays and wasted time on the job site; and
        - Warehouse materials as necessary to avoid delays in completing weatherization work.
- ***Inspection and Measurement***
    - Possess a working knowledge of:
        - Air and heat flow in buildings;
        - Factors that affect building heat loss;
        - Construction features and critical junction points of common housing types;
        - Insulation R-values;
        - Different insulation materials and installation techniques;
        - Various air-sealing techniques and appropriate materials;
        - Causes of and remedies for existing and potential moisture problems;
        - Causes of and remedies for other existing and potential indoor air quality problems;
        - Residential mechanical ventilation systems;
        - Minimum ventilation rates/building tightness limits based on the appropriate ASHRAE 62 standard; and
        - Electric base-load usage.
    - Demonstrate the ability to:
        - Measure the dimensions of floors, walls, ceilings, windows, and doors, and compute surface areas;
        - Compute the volume of conditioned space of a building;
        - Define the thermal envelope of a building; and
        - Assess the effectiveness of existing insulation and the effective R-values.
- ***Diagnostic Testing***
    - Blower door
        - Possess a working knowledge of:
            - Principles of air movement and how they relate to building heat loss;
            - Typical air leakage problems in common housing types; and
            - Minimum ventilation rates.
        - Demonstrate the ability to:
            - Set up a blower door;
            - Prepare a building for a blower door test; and
            - Take blower door reading and interpret results.
    - Zone pressure diagnostics
        - Possess a working knowledge of:
            - The air barrier of a building and the importance of aligning it with the thermal barrier; and
            - Primary and intermediate zones of a house.
        - Demonstrate the ability to:
            - Conduct zone pressure diagnostics and interpret results; and
            - Determine the location and effectiveness of the air barrier of a house.

- Duct testing
  - Possess a working knowledge of:
    - Problems associated with different types of duct leakage.
  - Demonstrate the ability to:
    - Determine dominant duct leakage;
    - Determine the amount of duct leakage or least the existence of significant duct leakage by conducting pressure pan, duct blaster, or delta Q tests.
    - Measure room pressure imbalances in houses with forced-air systems.
    - Resolve room pressure imbalances.

- ***Combustion Appliance Safety***
  - Possess a working knowledge of:
    - CO action levels;
    - Common code requirements related to:
      - Vent system sizing, materials, clearances, and installation;
      - Safety shut-off devices;
      - Gas line sizing; and
      - Combustion air;
    - Causes of and remedies to common vent system problems.
  - Demonstrate the ability to:
    - Measure the CO level in ambient air;
    - Measure the CO level of vented and unvented combustion appliances;
    - Measure the CO levels of gas- or propane-fired cook stoves (oven and burners) and remedy high CO levels through basic cleaning and adjustments;
    - Understand the difference between as-measured and air-free CO readings;
    - Detect gas, propane, and fuel oil leaks; and
    - Conduct a worst-case draft test of a combustion appliance zone; and
    - Measure the steady-state efficiency of a vented combustion appliance.

- ***Insulation***
  - In addition to the insulation-related *Installer* competencies, possess a working knowledge of:
    - Local codes relating to attic ventilation.

- ***Training***
  - Possess a working knowledge of:
    - Adult learning concepts; and
    - Benefits of cross training on-site personnel.
  - Demonstrate the ability to:
    - Provide on-site training to *Installers* in a positive environment to strengthen competency in existing skills and increase the number of skill areas.

AUDITOR

- ***Prerequisites***
  - Possess *Safe Work Practices, Installer,* and *Crew Chief* competencies.
  - Possess a working knowledge of building science principles.
- ***Inspection and Measurement***
  - Possess a working knowledge of:
    - Air and heat flow in buildings;
    - Factors that affect building heat loss;
    - Construction features and critical junction points of common housing types;
    - Insulation R-values;
    - Different insulation materials and installation techniques;
    - Various air-sealing techniques and appropriate materials;
    - Causes of and remedies for existing and potential moisture problems;
    - Causes of and remedies for other existing and potential indoor air quality problems;
    - Residential mechanical ventilation systems;
    - Minimum ventilation rates/building tightness limits based on the appropriate ASHRAE 62 standard; and
    - Electric base-load usage.
  - Demonstrate the ability to:
    - Measure the dimensions of floors, walls, ceilings, windows, and doors, and compute surface areas;
    - Compute the volume of conditioned space of a building;
    - Define the thermal envelope of a building;
    - Assess the effectiveness of existing insulation and the effective R-values; and
    - Analyze utility bills including breaking out base-load usage from heating and cooling usage.
- ***Diagnostic Testing***
  - Blower door
    - Possess a working knowledge of:
      - Principles of air movement and how they relate to building heat loss;
      - Typical air leakage problems in common housing types; and
      - Minimum ventilation rates.
    - Demonstrate the ability to:
      - Set up a blower door;
      - Prepare a building for a blower door test; and
      - Take blower door reading and interpret results.
  - Zone pressure diagnostics
    - Possess a working knowledge of:
      - The air barrier of a building and the importance of aligning it with the thermal barrier; and
      - Primary and intermediate zones of a house.
    - Demonstrate the ability to:
      - Conduct zone pressure diagnostics and interpret results;
      - Determine the location and effectiveness of the air barrier of a house; and
  - Duct testing

        - Possess a working knowledge of:
            - Problems associated with different types of duct leakage.
        - Demonstrate the ability to:
            - Determine dominant duct leakage; and
            - Conduct pressure tests. Potential tests include:
                - Pressure pan
                - Duct Blaster
                - Delta-Q
            - Seal duct leaks with appropriate materials and good workmanship.
            - Measure room pressure imbalances in houses with forced-air systems.
    - Steam and hot water distribution system testing
        - Possess a working knowledge of:
            - The components of typical steam and hot water distribution systems and the characteristics of their proper operation.
        - Demonstrate the ability to:
            - Test air vents, steam traps, thermostatic radiator valves, and hot water zone valves; and
            - Estimate the energy impacts of existing overheating problems.
    - Base-load systems
        - Demonstrate the ability to:
            - Meter electrical devices to determine their annual energy consumption.
- ***Combustion Appliance Safety***
    - Possess a working knowledge of:
        - CO action levels;
        - Common code requirements related to:
            - Vent system sizing, materials, clearances, and installation;
            - Safety shut-off devices;
            - Gas line sizing; and
            - Combustion air;
        - Causes of and remedies to common vent system problems.
    - Demonstrate the ability to:
        - Measure the CO level in ambient air;
        - Measure the CO level of vented and unvented combustion appliances;
        - Measure the CO levels of gas- or propane-fired cook stoves (oven and burners);
        - Understand the difference between as-measured and air-free CO readings;
        - Detect and natural gas, propane, and fuel oil leaks;
        - Conduct a worst-case draft test of a combustion appliance zone;
        - Measure the CAZ to assure sufficient volume for combustion air;
        - Clock a gas meter to determine the actual input of a gas-fired combustion appliance;
        - Conduct basic temperature-rise and static-pressure-drop tests on forced-air furnaces;
        - Measure the steady-state efficiency of a vented combustion appliance; and
        - Assess the potential inadequacy of supply and return plenum and duct sizes for forced-air systems.

- ***Measure Selection***
  - Possess a working knowledge of:
    - What materials are allowed to be installed based on 10 CFR 440 Appendix A;
    - The regulatory and policy requirements for selecting weatherization measures using DOE-approved energy audit software or priority lists; and
    - The interaction between typical weatherization measures (e.g., the impact of air-sealing and insulation measures on the potential savings of heating efficiency improvements).
  - Demonstrate the ability to:
    - Use a DOE-approved energy audit to input accurate building data and recommend appropriate, cost-effective weatherization measures;
    - If required, use a DOE-approved priority list to select appropriate, cost-effective weatherization measures;
    - Prioritize air-sealing efforts;
    - Estimate the heating and/or cooling load of a dwelling to ensure proper equipment sizing if the heating or cooling system is to be replaced;
    - Select the proper CFL to replace an incandescent lamp while maintaining or improving lighting levels; and
    - Meter an existing refrigerator or locate its DOE tested usage in a database to estimate annual energy consumption.
- ***Work Scope Development***
  - Demonstrate the ability to:
    - Accurately estimate the type and quantity of materials required to cost-effectively weatherize an eligible dwelling unit; and
    - Prepare clearly written work orders for work crews or contractors.

CONTRACTOR

Contractors hired by local weatherization agencies to perform weatherization work must possess the following competencies. See *HVAC Installer/Contractor* for the competencies required of these specialty contractors.

- ***Prerequisites***
  - Possess *Safe Work Practices, Installer, and Crew Chief* competencies.
  - Possess a working knowledge of building science principles.
- ***Business Management***
  - Demonstrate the ability to:
    - Maintain the licenses required by the state and local jurisdiction for the type of work the *Contractor* is hired to perform;
    - Possess adequate insurance;
    - Employ U.S. citizens or properly documented aliens; and
    - Bid, negotiate, and sign contracts, as necessary.

- ***Project Management***
  - Demonstrate the ability to:
    - Manage a crew of *Contractor*-employed *Installers* so weatherization work is conducted safely, effectively, and efficiently;
    - Ensure that the job site and *Contractor*-employed *Installers* comply with the *Safe Work Practices* described previously;
    - Understand a work order;
    - Maintain quality control of weatherization work and ensure it meets program standards;
    - Order and obtain materials, supplies, and equipment in time to avoid delays and wasted time on the job site; and
    - Warehouse materials as necessary to avoid delays in completing weatherization work.

Depending on the type of work the *Contractor* is hired to perform, the following inspection, diagnostic testing, combustion appliance safety, and/or insulation competencies may be required.

- ***Inspection and Measurement***
  - Possess a working knowledge of:
    - Air and heat flow in buildings;
    - Factors that affect building heat loss;
    - Construction features and critical junction points of common housing types;
    - Insulation R-values;
    - Different insulation materials and installation techniques;
    - Various air-sealing techniques and appropriate materials;
    - Causes of and remedies for existing and potential moisture problems;
    - Causes of and remedies for other existing and potential indoor air quality problems;
    - Residential mechanical ventilation systems;
    - Minimum ventilation rates/building tightness limits based on the appropriate ASHRAE 62 standard; and
    - Electric base-load usage.
  - Demonstrate the ability to:
    - Measure the dimensions of floors, walls, ceilings, windows, and doors, and compute surface areas;
    - Compute the volume of conditioned space of a building;
    - Define the thermal envelope of a building; and
    - Assess the effectiveness of existing insulation and the effective R-values.
- ***Diagnostic Testing***
  - Blower door
    - Possess a working knowledge of:
      - Principles of air movement and how they relate to building heat loss;
      - Typical air leakage problems in common housing types; and
      - Minimum ventilation rates.
    - Demonstrate the ability to:
      - Set up a blower door;
      - Prepare a building for a blower door test; and

        - Take blower door reading and interpret results.
    - Zone pressure diagnostics
        - Possess a working knowledge of:
            - The air barrier of a building and the importance of aligning it with the thermal barrier; and
            - Primary and intermediate zones of a house.
        - Demonstrate the ability to:
            - Conduct zone pressure diagnostics and interpret results; and
            - Determine the location and effectiveness of the air barrier of a house.
    - Duct testing
        - Possess a working knowledge of:
            - Problems associated with different types of duct leakage.
        - Demonstrate the ability to:
            - Determine dominant duct leakage;
            - Determine the amount of duct leakage or least the existence of significant duct leakage by conducting pressure pan, duct blaster, or delta Q tests;
            - Measure room pressure imbalances in houses with forced-air systems; and
            - Resolve room pressure imbalances.
- ***Combustion Appliance Safety***
    - Possess a working knowledge of:
        - CO action levels;
        - Common code requirements related to:
            - Vent system sizing, materials, clearances, and installation;
            - Safety shut-off devices;
            - Gas line sizing; and
            - Combustion air;
        - Causes of and remedies to common vent system problems.
    - Demonstrate the ability to:
        - Measure the CO level in ambient air;
        - Measure the CO level of vented and unvented combustion appliances;
        - Measure the CO levels of gas- or propane-fired cook stoves (oven and burners) and remedy high CO levels through basic cleaning and adjustments;
        - Understand the difference between as-measured and air-free CO readings;
        - Detect gas, propane, and fuel oil leaks; and
        - Conduct a worst-case draft test of a combustion appliance zone; and
        - Measure the steady-state efficiency of a vented combustion appliance.
- ***Insulation***
    - In addition to the insulation-related *Installer* competencies, possess a working knowledge of:
        - Local codes relating to attic ventilation.

HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) INSTALLER/CONTRACTOR

- ***Heating and Cooling Equipment***
  - Prerequisites:
    - Possess *Auditor/Combustion Appliance Safety* and *Safe Work Practices* competencies; and
    - Possess the HVAC certifications and licenses required by the state and local jurisdiction.
  - Possess a working knowledge of:
    - The components of typical steam and hot water distribution systems and the characteristics of their proper operation.
  - Demonstrate the ability to:
    - Maintain quality control of weatherization work and ensure it meets program standards;
    - Repair or replace heating and cooling equipment in a code-compliant manner;
    - Estimate the heating and/or cooling load of a dwelling per Manual J to ensure proper sizing of replacement heating or cooling systems;
    - Repair or replace vent systems of combustion appliances in a code-compliant manner;
    - Repair or replace a water heater in a code-compliant manner (some states may require a licensed plumber to replace a water heater);
    - Ensure proper sizing of gas lines;
    - Assess the adequacy of supply and return plenum and duct sizes for forced-air systems;
    - Add return and supply plenums and ducts as required;
    - Determine dominate duct leakage;
    - Conduct duct pressure tests, which could include:
      - Pressure pan;
      - Duct Blaster; and
      - Delta-Q;
    - Measure and solve room pressure imbalances is houses with forced-air systems;
    - Test air vents, steam traps, thermostatic radiator valves, and hot water zone valves;
    - Bleed unwanted air from a hot water distribution system;
    - Estimate the energy impacts of existing overheating problems in steam and hot water heating systems;
    - Warehouse materials as necessary to avoid delays in completing weatherization work; and
    - Test out to assure system is operating properly and safely.

INSPECTOR

- Prerequisites:
  - Inspectors should possess *Safe Work Practices*, *Installer*, and *Auditor* competencies.
- Possess a working knowledge of:
  - Relevant DOE Weatherization Program regulations and policy;
  - Building science principles; and
  - Relevant local codes.
- Demonstrate the ability to:
  - Verify that the weatherized house is safe by conducting all appropriate combustion appliance safety tests;
  - Evaluate the allowability and appropriateness of the installed weatherization measures taking into consideration program regulations, policy, energy audit results, and/or priority lists;
  - Assess whether the measures were installed with good workmanship, proper materials, and in such a manner to comply with local code and ensure long-term energy savings over the life of the measures;
  - Ensure that all measures charged to the job were actually installed; and
  - Verify the effectiveness of air-sealing efforts by conducting a blower door test and zone pressure diagnostics.

CONSUMER EDUCATION

- Competency
  - Principles of adult education
- Possess a working knowledge of:
  - What actions can be taken to reduce energy use in the home;
  - The basic steps in the Weatherization process from auditing, testing, installation, inspection, and monitoring;
  - The purpose of the basic equipment involved in weatherizing a house, including a blower door, pressure pan, combustion analyzer, gas leak detector, insulation blowing machine, and generator; and
  - What actions need to be taken to maintain a healthful indoor environment.
- Demonstrate the ability to:
  - Estimate the economic impacts of suggested actions to bolster customer commitment to change.

MONITOR (TECHNICAL)

- Prerequisites:
  - Monitors should possess all *Safe Work Practices*, *Auditor*, and *Inspector* competencies.
  - Monitors should be knowledgeable of *Installer* competencies.
- Possess a working knowledge of:
  - Principles of building science; and
  - Principles of adult education.
- Demonstrate the ability to:
  - Produce written reports that clearly identify weaknesses and provide sound solutions;
  - Provide on-site training and technical assistance; and
  - Solve complex technical problems.

MONITOR (ADMINISTRATIVE)

- Possess a working knowledge of:
  - Principles of adult education;
  - Enabling legislation governing the U.S. Department of Energy's (DOE's) Weatherization Assistance Program;
  - DOE program regulations 10 C.F.R. 440;
  - DOE program guidance and policy issued via Weatherization Program Notice or memoranda;
  - Federal, state, and local budget processes;
  - Federal financial assistance regulations 10 C.F.R. 600 and relevant OMB circulars;
  - Applicable state procurement regulations; and
  - State and local approaches to monitoring, training, and technical assistance.
- Demonstrate the ability to:
  - Produce written reports that can clearly identify weaknesses and provide sound solutions; and
  - Provide on-site training and technical assistance;

PROGRAM MANAGER

- Possess a working knowledge of:
  - Enabling legislation governing the U.S. Department of Energy's (DOE's) Weatherization Assistance Program;
  - DOE program regulations 10 C.F.R. 440;
  - DOE program guidance and policy issued via Weatherization Program Notice or memoranda;
  - Federal, state, and local budget process;
  - Federal financial assistance regulations 10 C.F.R. 600 and relevant OMB circulars;
  - Applicable state procurement regulations;
  - State and local approaches to monitoring, training, and technical assistance;

    - Applicable computer databases and tracking systems and the importance that they remain up-to-date, are secured and backed-up, and are used effectively to manage the program; and
    - Building science principles.
- For state staff:
    - Demonstrate the ability to:
        - Prepare an annual state plan;
        - Prepare an annual weatherization grant application;
        - Submit accurate financial and production reports in a timely manner;
        - Develop, maintain, and enforce state technical program standards;
        - Provide adequate technical and administrative training for coordinators, auditors, technicians, and inspectors directly employed by local agencies, and ensure that subcontractors receive appropriate technical training;
        - Develop and manage an effective monitoring program;
        - Coordinate resources;
        - Develop and implement innovative leveraging strategies; and
        - Process reimbursement requests in a timely manner.
- For local agency weatherization coordinators:
    - Demonstrate the ability to:
        - Effectively communicate and manage weatherization staff and subcontractors;
        - Prepare and track a budget for implementing a local weatherization program;
        - Maintain a purchase order system to track contracted services and materials and tool requisitions;
        - Maintain a coding system to assure expenditures are charged to the correct budget category;
        - Maintain inventory tracking system for materials, tools, and equipment;
        - Submit accurate financial and production reports in a timely manner;
        - Comply with federal limits on administrative expenses;
        - Manage a small construction/production-focused operation;
        - Ensure rigorous, unbiased, and accurate final inspection of all completed units;
        - Provide adequate technical training for auditors, technicians, and inspectors directly employed by the local agency, and ensure that subcontractors receive appropriate technical training;
        - Ensure that weatherization work complies with state technical program standards;
        - Coordinate resources; and
        - Develop and implement innovative leveraging strategies.

TRAINER

- Prerequisites:
  - Trainers should possess *Safe Work Practices*, *Auditor*, and *Inspector* competencies;
  - Trainers should be knowledgeable of *Installer* competencies;
  - Completion of adult education training program; and
  - Certification in subject areas of presented training.
- Possess a working knowledge of:
  - Principles of building science;
  - Principles of adult education;
  - Benefits of cross-training;
  - Building codes, especially energy and health/safety-related codes;
  - Allowable activities at the location of training (e.g., knob-and-tube wiring requirements); and
  - Available resources to aid students in future understanding and application.
- Demonstrate the ability to:
  - Develop curriculum based on student needs;
  - Tailor each class to the experience and needs of the students;
  - Motivate students through inspirational presentations;
  - Provide hands-on training;
  - Use technology to enhance the learning experience, especially as related to adult education principles; and
  - Direct students to other resources to get answers beyond the capacity of the trainer to provide.

Appendix A: Math Pre-Test

You may use a calculator to solve the following questions. Answers may be expressed in decimal or fraction form. (15-minute time limit)

You must score 73% or higher, (answer at least eleven (11) out of fifteen (15) correct). Failure to do so will require additional basic math skills before attending the Initial Inspection course at the OWTC.

1. 8 1/2”
   17 3/4”
   + 23 3/8”

2. 23 1/4”
   - 7 1/8”

3. 23.25
   x 12.75

4. 350/40 = _____

5. 3/8 x 120 = _____

6. How many inches are in 5 feet? _____

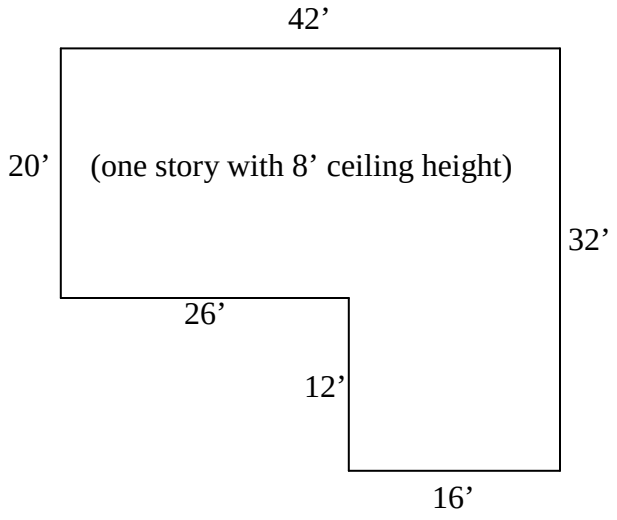
7. One square foot equals how many square inches? _____

8. What is the perimeter of the house diagramed below? _____feet.

9. What is the area of the house diagramed below? _____square feet.

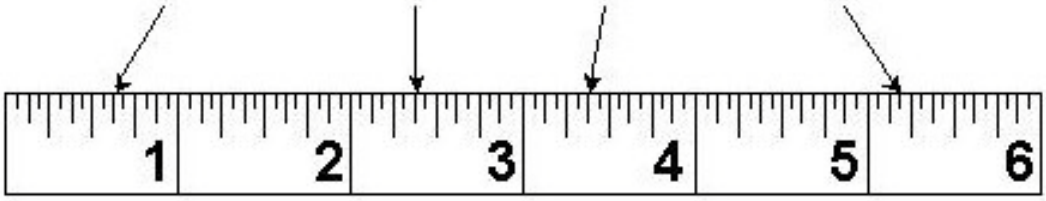
10. What is the volume of the house diagramed below? _____cubic feet.

11. What is 75% of 2400? _____.



12-15. Write in the measurement indicated by the arrow pointing at the tape measure.

12._____ 13._____ 14._____ 15._____



Appendix B: Computer Skills Pre-Test

Basic Computer Skills Survey

1. Have you used a computer before? ____Yes ____No

2. Do you own a computer? ____Yes ____No

3. How well can you type? ____Good ____OK ____Not Good

4. What software programs have you used?

   a. Microsoft Word or other word processor? ____Yes ____No
   b. Excel or other spreadsheet program? ____Yes ____No
   c. Outlook or other email program? ____Yes ____No
   d. Internet Explorer or other Internet browser? ____Yes ____No
   e. NEAT, MHEA, or other energy audit software? ____Yes ____No

Windows Basics Test

Perform the following tasks on the computer.

1. Open three different software programs, resize and position the windows so you can see all three applications on the screen at once.

2. Minimize all three programs and create a new folder on the desktop.

3. Create a word-processing file and save it on the desktop

4. Move this new file into the new folder using drag and drop.

5. Open the folder and confirm you successfully moved the file.

6. Using the Windows Help menus locate instructions for cut and paste and drag and drop. Point to what tutorials come with windows for learning file management. (copy, delete, move, rename, view properties)

File Management Basics Test

Nearly everything you'll do with computers revolves around creating content in the form of different types of files using different software programs. You'll need to be comfortable with creating, saving, opening, and editing files. Then you'll need to understand storing, organizing, renaming, moving, copying, deleting and backing up your important files. Plan on learning by doing. Mistakes are considered positive learning experiences and are an essential part of using and learning computers. Trouble-shooting gets easier with practice.

Begin by drafting a personal list of the computer skills you have and the skills you want to learn. Then complete the following tests.

1. Create a new folder on the desktop named “Test Folder #1” and save a simple word processing document to this folder.

2. Create a folder named “Test Folder #2” within “Test Folder #1” and move the word processing file into this new folder.

3. Put a copy of this file into the first folder you created.

4. Rename this file.

5. Create another new folder on the desktop named “Test Folder #3” and move Test Folder #2 into this folder.

6. Delete all these folders and files.

Copy and Paste Basics Test
Perform the following tasks on the computer.

1. Highlight a section of text in a document and copy it to another location.

2. Highlight a section of text in a document and move it to a new location.

3. Highlight an image in a document and copy it to another location. Then, move the image to new location.

Spreadsheet Basics Test
Circle the letter of the best answer.

1. Spreadsheets:
   a. Are large amounts of information
   b. Organize text and numbers into columns and rows
   c. Are usually graphics

2. Columns are:
   a. Labeled with numbers
   b. Not labeled
   c. Labeled with letters

3. Rows are:
   a. Labeled with numbers
   b. Not labeled
   c. Labeled with letters

4. What are the intersection of a column and a row?
   a. Formulas
   b. Entries
   c. Cells

5. The column and row label combined at the point of intersection is known as the:
   a. Active cell
   b. Cell name
   c. Formula

6. What are the sets of instructions that produce a value for a cell?
   a. Addresses
   b. Spreadsheets
   c. Formulas

7. What character should start any formula?
   a. Plus sign (+)
   b. Any operator (+,-,*,/)
   c. Equals sign (=)

8. Which formula will produce the total cost of all weatherization measures?

	A	**B**	**C**	**D**	**E**	**F**
1	**Measure**	**Hours**	**Rate**	**Labor**	**Materials**	**Total**
2	Air sealing	4	$30	$120	$200	$320
3	Attic insulation	3	$30	$90	$324	$414
4	Sidewall insulation	8	$30	$240	$312	$552
5	Water heater wrap	0.5	$30	$15	$14	$29

   a. =SUM(F2:F5)
   b. =F2+F3+F4+F5
   c. =SUM(B5:F5)
   d. Both a and b

Appendix C: Glossary

Air Barrier – The air barrier of a dwelling, also known as the pressure boundary, is the building shell surface that limits airflow between inside and outside. For maximum energy efficiency and comfort, the air barrier and thermal barrier should be continuous and in contact with each other.

ASHRAE – American Society of Heating, Refrigeration, and Air Conditioning Engineers

ASHRAE 62 – ASHRAE 62 is a group of ASHRAE standards for minimum building ventilation requirements. ASHRAE 62.1-2004, entitled Ventilation for Acceptable Indoor Air Quality, cover general topics and requirements for commercial and high-rise residential buildings. ASHRAE 62.2-2004, Ventilation for Acceptable Indoor Air Quality in Low-Rise Residential Buildings, has a self-explanatory title.

Attic Ventilation – Building codes require attic openings to outside to induce airflow that cools the attic in summer and exhausts moisture. There is a growing consensus that unvented attics have energy benefits and that in hot, humid climates attic ventilation brings in more moisture from outside than it purges.

Auditor – An auditor is a weatherization worker that assesses an eligible dwelling for potential weatherization services. Auditors visually inspect the building shell and mechanical systems; conduct diagnostic, health, and safety tests; record the location, condition, and dimensions of walls, ceilings, floors, windows, doors, and mechanical systems; enter data into computerized energy audit or use a priority list to select cost-effective measures; and prepare clear and accurate work orders to ensure the most appropriate measures are installed properly.

Balloon-Framed Walls – Balloon-framed walls are built without top or bottom plates. This type of framing often provides an air channel from the basement or crawlspace to the attic that allows outside air to flow through the walls resulting in excessive heat loss/gain.

Band Joist – Band joists are the floor joists that run around the perimeter of the house. There are two types of band joists - header joists that run perpendicular to the floor joists and rim joists that run parallel. A typical weatherization measure involves insulating the header joist spaces between floor joists and along the rim joists.

Base Load – Base loads are energy loads from appliances that are on most of the time and do not vary with changing climate. Base loads include refrigerators, water heaters, and lights. Base loads are often thought to be primarily electric loads, but can be fueled by other energy sources.

Batt Insulation – Batts are fiberglass insulation manufactured in rolls precut to standard widths to fit snugly between framing (joists, rafters, or studs) on 16-inch or 24-inch centers in ceilings, floor, and walls. While often made with a “Kraft” paper facing

designed to retard vapor transmission, batt insulation is also available without the paper facing (unfaced batts).

Blower Door – A blower door is a device for testing the airtightness of a building. A blower door consists of a calibrated fan for measuring an air flow rate and a pressure sensing device to measure the pressure created by the fan flow. The combination of pressure and flow can be used to estimate the airtightness.

Building Performance Institute (BPI) – BPI is an organization that supports the development of a professional building performance industry through individual and organizational credentialing and a quality assurance program. BPI offers certification of individuals in evaluation, mechanical, envelope, mobile home, and multi-family designations, as well as accreditation of organizations committed to using a quality management system.

Building Science – Building science is the collection of scientific knowledge that focuses on the analysis and control of the physical phenomena affecting buildings. This includes the detailed analysis of building materials and building envelope systems.

Building Tightness Limit – Also known as the minimum ventilation rate, the building tightness limit is the least amount of fresh air that must be drawn through a house (by either natural or mechanical means) to ensure acceptable indoor air quality.

Bypass – A bypass is a hole between conditioned and unconditioned space that allows air leakage through the pressure boundary, or air barrier, of a dwelling.

CAZ – A combustion appliance zone, or CAZ, is any zone containing a combustion appliance.

CO – Carbon monoxide

Combustion Air – Complete combustion of fossil fuels such as natural gas, propane, and fuel oil requires an adequate supply of air. Inadequate combustion air causes incomplete combustion, which generates carbon monoxide.

Combustion Appliance – A combustion appliance is a furnace, boiler, space heater, wood stove, water heater, cook stove, or other device that burns wood or fossil fuel such as natural gas, propane, or fuel oil.

Compact Fluorescent Lamp – A compact fluorescent lamp (CFL) is a type of fluorescent lamp that screws into a regular light bulb socket or plugs into a small lighting fixture. In comparison to incandescent light bulbs, CFLs have a longer rated life and use less electricity.

Competency – Competency means the possession of a minimum level of knowledge and proficiency required to collect appropriate information, make informed decisions, and

physically takes the needed actions to deliver the high-quality weatherization service in question.

Consumer/Client Education – Consumer or client education includes discussion, instruction, brochures, and pamphlets that explain the weatherization process, the measures installed in the client's house, how to use certain measures (such as programmable thermostats), and low-cost/no-cost ways to save energy and reduce energy costs.

Crew Chief – A crew chief is a weatherization worker that supervises a crew of installers and directs their efforts to weatherize eligible dwellings.

Critical Junction Point – Critical junction points are areas in building construction that typically exhibit air leaks or are inadequately insulated. Critical junction points include the intersection of ceilings and walls, cantilevers, and finished-attic kneewalls.

Cross Training – Training every member of a crew to be able to do every job is known as cross training. While certain crew members may specialize in specific tasks, a cross-trained crew understands how their specialty impacts all others and can adjust to staff turnover.

Delta Q – Delta Q is a testing protocol to measure duct leaks to the outside under actual operating conditions.

Demonstrated Ability – A demonstrated ability is the physical performance of a test, procedure, or technique on an actual house, a prop, or in a training lab in the presence of someone qualified to assess the particular competency.

Dense-Packed Cellulose Insulation – Loose cellulose insulation is blown into closed building cavities (usually walls, but also roof/ceiling cavities) to a density of 3½ pounds per cubic inch to air seal as well as insulate.

DOE – U.S. Department of Energy

Dropped Soffit – A dropped soffit (or simply drop soffit) is built from framing and drywall over kitchen cabinets to give a more finished appearance than just hanging wall cabinets with a foot or so gap between the top of the cabinet and the ceiling. From the attic, a dropped soffit looks like a big hole in the floor and often causes breaks in the attic thermal and air barriers.

Duct Blaster – A Duct Blaster is a calibrated airflow measurement system designed to test and document the air tightness of forced-air duct systems. Duct Blaster is the trade name of the device manufactured by the Energy Conservatory of Minneapolis, Minnesota. Other competing companies such as Infiltec and Retrotec manufacture similar systems.

EPA – U.S. Environmental Protection Agency

HVAC – Heating, ventilation, and air conditioning

HVAC Installer/Contractor – A HVAC installer/contractor is a crew member or contractor trained and licensed to repair and replace furnaces, boilers, air conditioners, and related equipment.

Hydronic Distribution Pipes – Hydronic distribution pipes deliver hot water or steam from a water heater or boiler to baseboard convectors or radiators located throughout a house.

Inspector – An inspector verifies the proper selection, installation, and effectiveness of weatherization measures installed in eligible dwellings through review of documentation, visual inspection, and performance of diagnostic, health, and safety testing.

Installer – An installer is a crew member or contractor that installs weatherization measures in eligible dwellings.

Knob-and-Tube Wiring – Older homes may have "knob-and-tube" electrical wiring, where two separate wires run through ceramic posts (knobs) attached to the top of ceiling joists or through ceramic tubes inserted into holes drilled in the wall or roof framing. Since this type of wiring was designed to dissipate heat to the attic air, insulating over knob-and-tube wiring can cause dangerous overheating.

Lead-Safe Work Practices – Lead-safe work practices are the use of specific precautions in the conduct of weatherization activities designed to avoid contaminating homes with lead-based paint dust and debris, and to avoid exposing the clients, weatherization workers, and their families to this hazard.

Mastic – Mastic is a material used to seal duct leaks. It is the consistency of drywall joint compound when applied, but dries to a hard, durable finish. To seal duct leaks larger than ¼ inch, mastic is applied over a specially made fiberglass mesh tape.

Material Safety Data Sheet (MSDS) – A material safety data sheet or MSDS describes the properties of a particular substance (e.g., caulk, mastic, sealant). An important component of workplace safety, it is intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner.

Mechanical Ventilation – Mechanical ventilation is the controlled exhaust of indoor air, intake of fresh outdoor air, or a combination of both through the use of fans, controls, passive air intakes, and sometimes ducts, registers, and air-to-air heat exchangers.

Minimum Ventilation Rate – Also known as the building tightness limit, the minimum ventilation rate is the least amount of fresh air that must be drawn through a house (by either natural or mechanical means) to ensure acceptable indoor air quality.

Monitor (Administrative) – An administrative monitor is someone employed or contracted by a state to review the administrative and programmatic activities of local weatherization agencies (subgrantees) to ensure compliance with applicable laws and programmatic and financial regulations.

Monitor (Technical) – A technical monitor is someone employed or contracted by a state to review the technical and field activities of local weatherization agencies (subgrantees) to ensure compliance with the enacting federal legislation, federal program regulations, and state technical program standards.

NASCSP – National Association for State Community Services Programs is a national association charged with advocating and enhancing the leadership role of states in preventing and reducing poverty. NASCSP's members are state administrators of the U.S. Department of Health and Human Services' Community Services Block Grant (CSBG) and the U.S. Department of Energy's Weatherization Assistance Program. NASCSP keeps its members, the federal government, and other interested parties informed about issues related to CSBG and the Weatherization Program through its publications and training.

OSHA – The Occupational Safety and Health Administration's mission is to assure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health.

Personal Protective Equipment – Equipment such as respirators, safety goggles, disposable coveralls, and hard hats worn by weatherization workers to protect them from jobsite hazards.

Plenum – A plenum is the initial duct on the supply and return side of an air handler.

Pressure Pan – A pressure pan resembles a cake pan and is used to locate duct leakage with a digital manometer while a blower door is running.

Priority List – A priority list is a list of weatherization measures appropriate for typical housing stock ordered by descending cost effectiveness. DOE-approved energy audit software is used to verify the cost effectiveness of the measures and account for the interaction between measures.

R-Value – R-value is a measure of resistance to heat flow. Insulation with an R-value of R-38 resists heat loss better than R-19 insulation.

Room Pressure Imbalances – Pressure imbalances happen when the conditioned air supplied to a room does not equal the airflow returned to the furnace or air conditioner. In dwellings with forced-air distribution and a central return system, closing bedroom doors can cause the bedrooms to experience a positive pressure and rooms that are open

to the return grille see a negative pressure. Atmospherically vented combustion appliances can backdraft if they are located in a zone with negative pressure.

Steam Trap – Steam traps are automatic valves used in steam heating systems to remove condensed steam (hot water) from the steam pipes and return it to the boiler.

Temperature-Rise Test – A temperature-rise test is conducted on a furnace by measuring the temperature of air entering the furnace and of the air exiting the furnace. The difference between these two temperatures is known as the temperature rise and is compared to the normal range indicated on the nameplate to verify proper operation of the furnace.

Thermal Barrier – The thermal barrier of a dwelling is the building shell surface that limits heat flow. For maximum energy efficiency and comfort, the air barrier and thermal barrier should be continuous and in contact with each other.

Unvented Combustion Appliance – An unvented combustion appliance vents combustion gases to the living space instead of outside as does a vented appliance.

Weatherization *Plus* – The U.S. Department of Energy's effort to plan the continued evolution of the Weatherization Program for the next five years through activities designed to expand resources (leveraging and partnerships), share relevant information with the weatherization network, and increase the consistent delivery of high-quality weatherization services nationwide.

Work Order – A work order describes what weatherization measures are to be installed in an eligible dwelling and includes a list of the type and quantity of materials that are required to complete the job.

Working Knowledge – Working knowledge of means to:

- Knowing how a particular topic impacts the weatherization process;
- Having the relevant information committed to memory or being able to locate it in readily available sources; and
- Using the knowledge to make informed decisions and guide weatherization work.

Worst-Case Draft Test – A worst-case draft test is procedure used to verify the ability of a combustion appliance to safely exhaust combustion gases outside even when exhaust fans, pressure imbalances, and the stack effect are fighting its ability to properly draft.

Zone Pressure Diagnostics – Test procedures used with the blower door to locate air leakage are known as zone pressure diagnostics.