Report of the Small Business Advocacy Review Panel

on

The Lead-based Paint; Certification and Training; Renovation and Remodeling Requirements

March 3 , 2000

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Report of the Small Business Advocacy Review Panel on Lead-based Paint; Certification and Training; Renovation and Remodeling Requirements

1. INTRODUCTION

This report is presented by the Small Business Advocacy Review Panel (SBAR Panel or Panel) convened for the proposed rulemaking on the Lead-based Paint; Certification and Training; Renovation and Remodeling Requirements, currently being developed by the Environmental Protection Agency (EPA). On November 23, 1999, EPA's Small Business Advocacy Chairperson convened this Panel under section 609(b) of the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA). Section 609(b) requires convening a review Panel prior to publication of the initial regulatory flexibility analysis that an agency may be required to prepare under the RFA. In addition to its chairperson, the Panel consists of the Office Director of the Office of Pollution Prevention and Toxics, the Administrator of the Office of Information and Regulatory Affairs within the Office of Management and Budget, and the Chief Counsel for Advocacy of the Small Business Administration.

This report includes the following:

- Background information on the proposed rule being developed;
- Information on the types of small entities that would be subject to the proposed rule;
- A description of efforts made to obtain the advice and recommendations of representatives of those small entities; and
- A summary of the comments that have been received to date from those representatives.

Section 609(b) of the RFA directs the Panel to report on the comments of small entity representatives and make findings on issues related to identified elements of initial regulatory flexibility analysis (IRFA) under section 603 of the RFA. Those elements of an IRFA are:

- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- A description of projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements and the type of professional skills necessary for preparation of the report or record;

- An identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule; and

- A description of any significant alternative to the proposed rule which accomplishes the stated objectives of applicable statutes and which minimizes any significant economic impact of the proposed rule on small entities.

Once completed, the Panel report is provided to the agency issuing the proposed rule and included in the rulemaking record. In light of the Panel report, and where appropriate, the agency is to make changes to the draft proposed rule, the IRFA for the proposed rule, or the decision on whether an IRFA is required.

It is important to note that the Panel's findings and discussion are based on the information available at the time the final Panel report is drafted. EPA will continue to conduct analyses relevant to the proposed rule, and additional information may be developed or obtained during the remainder of the rule development process. The Panel makes its report at a preliminary stage of rule development and its report should be considered in that light. At the same time, the report provides the Panel and the Agency with an opportunity to identify and explore potential ways of shaping the proposed rule to minimize the burden of the rule on small entities while achieving the rule's purposes. Any options identified by the Panel for reducing the rule's potential regulatory impact on small entities may require further analysis and/or data collection to ensure that the options are practicable, enforceable, environmentally sound, and consistent with the statute authorizing the proposal.

2. BACKGROUND

2.1 Statutory and Regulatory Background

In 1992, Congress passed the Residential Lead-Based Paint Hazard Reduction Act (Title X). This law directs EPA to develop regulations under the Toxic Substances Control Act (TSCA) and create standards for conducting lead-based paint activities that include abatement. EPA has already promulgated final regulations for lead-based paint activities in target housing and child-occupied facilities (40 CFR Part 745 Subpart L). Definitions of target housing and child-occupied facilities are presented in section 3 of this report. These regulations require that individuals conducting lead-based paint inspections, risk assessments, and abatements be certified and that the work be performed in accordance with specified work practice standards.

EPA's regulations also establish a process for States and Indian Tribes to seek authorization to administer such a lead program. The Agency is administering lead-based paint training and certification programs and enforcing work practices in the States or Indian Tribes that have not been authorized.

TSCA Section 402(c) directs EPA to address renovation and remodeling activities by first

conducting a study (see accompanying *Summary of EPA Renovation and Remodeling (R&R) Study*) of the extent to which persons engaged in various types of renovation and remodeling activities are exposed to lead in the conduct of such activities or disturb lead and create a lead-based paint hazard on a regular or occasional basis. Section 402(c) further directs the Agency to revise the lead-based paint activities regulations (40 CFR Part 745 Subpart L) to include renovation or remodeling activities that create lead-based paint hazards. In order to determine which contractors are engaged in such activities the Agency is directed to utilize the results of the study and consult with the representatives of labor organizations, lead-based paint activities contractors, persons engaged in remodeling and renovation, experts in lead health effects, and others.

2.2 Renovation and Remodeling Studies

TSCA Section 402 (c)(2) calls for the Agency to conduct a study of renovation and remodeling activities to determine the risk of exposure to lead. The study objectives were to identify renovation and remodeling (R&R) work activities which may create a lead exposure hazard to (1) R&R professionals performing the work or (2) building occupants (especially young children) who live or visit the buildings where the work is being done. EPA conducted four distinct phases of the R&R study, the final phase being completed in March 1999. The study approach and conclusions for each phase are briefly summarized below.

The approach taken for Phase I, the Environmental Field Sampling Study (EFSS), involved a series of case studies. These case studies focused on R&R "target" work activities, such as, carpet removal, window replacement, HVAC (heating, ventilation, and air conditioning) removal/modification/replacement, demolition/removal of architectural components, and generic carpentry in buildings where lead-based paint is observed in concentrations above 1 mg/cm^2. We collected two types of samples for each work activity. The first was worker air-monitoring samples which indicated the degree of worker inhalation exposure. The second was settled-dust samples which indicated potential for exposure to building occupants.

Phase I conclusions from the personal air-monitoring samples show that some R&R work activities can result in worker exposure above the Occupational Safety and Health Administration's Permissible Exposure Limit (OSHA PEL; 8-hr TWA). The settled dust samples from Phase I showed that large amounts of lead-dust can be generated by most R&R work activities (window replacement, interior demolition, HVAC work, sanding of painted surfaces, sawing of painted surfaces, etc.). When lead-based paint is disturbed or dust containing lead released, these work activities produced lead loadings (in settled dust) that ranged from approximately 300 ug/ft^2 to over 40,000 ug/ft^2. The effectiveness of cleanup for removing settled lead-dust was examined using two popular cleanup methods: broom sweeping and shop-vacuuming. Data from R&R Phase I show that standard broom sweeping or shop-vacuuming cleanup can remove a high percentage of the lead-dust (99%), but lead levels still remain consistently above 100 ug/ft^2. In addition, the data show that standard cleanup techniques sometime disperse lead-dust throughout the work-site, thereby increasing lead levels in areas

more distant from the work site.

The approach for Phase II, Worker Characterization and Blood-Lead (WCBS), involved collecting data on blood samples and questionnaires from 585 R&R workers from Philadelphia and St. Louis. The questionnaire focused on demographic and background information such as work history, work habits, hobbies, etc. From Phase II , EPA concluded that there is little evidence from blood samples that R&R professionals are, in general, exposing themselves to lead levels of serious concern. Separate examination of workers by job category (floor layers, carpenters, window replacement specialists, laborers, drywall installers, painters, supervisors) disclosed that there were statistically significant differences between some categories of workers. For none of these categories, however, did lead exposure appear to be an especially serious problem.. In addition, the questionnaire data from this study indicate that few R&R professionals use respirators while working. Regarding containment and cleanup, the questionnaire data does not provide information about containment procedures used, but does indicate that few R&R professionals use a high energy particulate air (HEPA) vacuum.

Phase III of the study was a Retrospective Study of Wisconsin Children, The Wisconsin Childhood Blood-lead Study. The approach for Phase III focused on the relationship between R&R activities and children's blood-lead levels. The EPA, the University of Wisconsin in Madison and the Wisconsin Department of Health jointly conducted this large scale retrospective study using Wisconsin's State Blood-lead Registry. Extensive telephone interviews were conducted with 3,654 parents/guardians of Wisconsin children who had already had their blood-lead tested. The telephone interviews consisted of questions about what R&R work, if any, had been conducted within each residence in the last year.

Analysis of the Phase III data indicates that general residential R&R is associated with an increased risk of elevated blood-lead levels in children. Specifically, a child living in a residence where R&R was conducted in the last 12 months was 30% more likely to have an elevated blood-lead level. Phase III also showed that some R&R activities (paint removal by heat gun open flame, chemical stripper, and surface preparation, etc.) were specifically associated with a higher frequency of elevated blood-lead in children.

The R&R effect shown in the Phase III study is somewhat ambiguous in that several confounding factors may have contributed to the blood lead levels. In addition, this study did yield several surprising results, such as showing an increased risk of elevated blood-lead levels in homes that were built after 1978 (the date lead-based paint was banned), although the report did offer several explanations for this result. Furthermore, there is no statistically significant increased risk of elevated blood lead level (possibly because of small sample size) when the study focuses solely on work performed by apartment building owners, apartment building staff or professional contractors, who are the persons who would be subject to this new regulation. EPA will perform further analysis of the existing phase III data to analyze the impact of R&R activities by contractors and building owners.

Phase IV of the study, Work Characterization and Blood-Lead for Highly Exposed Workers, was an extension of Phase II. Where Phase II examined lead exposure among a general population of R&R professionals, Phase IV focused on individuals who worked primarily in old historic buildings. Phase IV explored lead exposure in 161 professional R&R workers and 82 homeowners who worked extensively in old houses. Each study participant provided a blood sample for analysis and completed a detailed questionnaire identical to the one used in Phase II.

The results of Phase IV demonstrate that individuals who regularly work in high lead exposure potential settings (i.e. old houses) do have a higher probability of an elevated blood-lead level than the general population of R&R professionals measured in Phase II. The geometric mean blood-lead level for R&R professionals was significantly greater than for homeowners. Preparation for painting and/or sanding of painted surfaces were the activities most consistently associated with elevated blood-lead levels among study participants. Regarding containment and cleanup, the studies questionnaire data does not provide information about containment procedures used, but does indicate that the majority of R&R professionals spend between one and four hours cleaning daily.

The Agency concluded from this study that many R&R work activities can produce or release large quantities of lead and may be associated with elevated blood lead levels. These activities include, but are not limited to: sanding, cutting, window replacement, and demolition. Lead exposure to R&R workers appears to be less of a problem than to building occupants (especially young children). Some workers (and homeowners) are occasionally exposed to high levels of lead. Any work activity that produces dust and debris may create a lead exposure problem.

2.3 Health Effects of Lead Exposure

Lead poisoning in children is widely recognized as a major health problem in the United States. While there are many sources of lead that children may be exposed to, lead-based paint in residential housing is considered the remaining major source. Lead is a powerful toxicant with no known beneficial purpose in the human body. The health risks associated with lead exposure are significant for all humans, but young children, with their developing nervous systems, are especially vulnerable to lead's injurious effects. The toxic effects of lead are most evident in the nervous system, although all parts of the body can be damaged at high exposure levels. This is especially troubling for the young because many of the effects that lead has on the central nervous system are irreversible.

Blood-lead concentration is the most commonly used measure of lead exposure. An extensive body of research relates the health effects of lead exposure to blood-lead concentration (USEPA, 1998, Chapter 2). This research includes a wide range of epidemiological studies involving human subjects. Corroborating the human studies are a number of controlled laboratory experiments on the effects of lead exposure to a variety of animals. These animal experiments clearly demonstrate that the health effects observed in the human studies are indeed caused by

lead exposure (Rice, 1996).

The research has documented that blood lead levels as low as 10 µg/dl are associated with harmful effects on children's learning and behavior (a clear threshold for health effects has not been demonstrated) (CDC, 1997; Schwartz, J, 1994; USEPA, 1998, Ch 2;). Long-lasting impacts on intelligence, motor control, hearing, etc. have been documented at blood-lead levels that don't produce obvious symptoms and were once thought to be safe. At blood-lead levels of 20 to 40 ug/dl, the effects of lead become more pronounced, and other adverse health effects are observed in a broader range of body systems, including increased blood pressure, delayed reaction times, anemia, and kidney disease. At blood-lead concentrations above 60 ug/dl, symptoms of severe lead poisoning include kidney failure, abdominal pain, nausea and vomiting, and pronounced mental retardation. At higher blood-lead levels, convulsions, coma, and death may result (USEPA, 1998, Ch. 2.).

While it is possible for lead to enter the body through ingestion (eating and drinking), inhalation (breathing in air), or absorption (through skin contact), many researchers consider ingestion of dust and soil via hand-to-mouth behavior to be the major route of exposure for children. Children that are 1-2 years old who are crawling or just beginning to walk are in frequent contact with the floor. These kids put their hands and other items, like toys, in their mouth often. Lead dust is swallowed when these children place their hands, moistened by saliva, repeatedly on floors and other surfaces that may contain lead dust, and then return their hands to the mouth. Studies have indicated that blood-lead levels have a tendency to increase rapidly and peak in children 1-2 years old (USEPA, 1995, 1996).

Epidemiologic evidence indicates that lead-contaminated dust, even at low to moderate levels, can increase children's blood-lead concentrations. What's more, lead on small particles of dust, when ingested, is more apt to end up in the blood stream. In addition, these smaller particles are difficult to see with the naked eye and are hard to detect when scattered evenly across a floor or other surface.

A broad range of studies have indicated that lead-based paint, including the resulting lead-contaminated dust and lead-contaminated soil, is a primary contributor to lead exposure in young children. The scientific literature contains extensive evidence of the relationship between childhood blood-lead concentrations and environmental-lead levels. This evidence is provided by two types of studies. The first type investigates the relationship between elevated blood-lead concentrations and lead levels in the child's residential environment. This first type of study has consistently demonstrated that elevated blood-lead concentrations are associated with elevated lead levels in the dust, paint, and soil in the surrounding environment. Intervention studies are the second type. These studies have demonstrated that reduction in children's blood-lead concentrations has occurred following interventions that reduce childhood lead exposure from paint, dust and soil.

Using U.S. median soil exposure levels (72 ppm), and holding other environmental

exposures constant, Lanphear found that at floor dust loadings of 10 ug/ft^2 the geometric mean blood lead levels observed were 4.6 ug/dl. At these levels 7.4% of children had a blood lead level in excess of 10 ug/dl. At 100 ug/ft^2 using the same soil level, the geometric mean blood lead level was 7.3 ug/dl and 28% of the children were estimated to have blood lead levels of 10 ug/dl or higher (Lanphear, 1998).

In conclusion, it has been established that lead is toxic even in very small amounts. The research has documented that blood lead levels as low as 10 µg/dl are associated with harmful effects on children's learning and behavior (a clear threshold for health effects has not been demonstrated) (CDC, 1997; Schwartz, J, 1994; USEPA, 1998, Ch 2;). In addition, Lanphear found in a pooled analysis of twelve epidemiological studies that elevated blood-lead levels can result when floor dust levels are 10 - 100 ug/ft^2 (Lanphear, 1998). Phase I of the R&R study and work by other researchers have measured floor dust levels generated from various R&R activities to range from 300 ug/ft^2 to 40,000 ug/ft^2. These measures are 2-3 orders of magnitude greater, prior to any cleanup, than levels that have been established to cause elevated blood-lead levels. Phase I of the R&R study also demonstrates that standard cleaning practice (broom sweeping and/or shop-vacuuming) still consistently leaves dust lead levels above 100 ug/ft^2 . These values exceed both the Agency's existing floor dust hazard guidelines of 100 ug/ft^2 and the proposed floor dust hazard standard of 50 ug/ft^2. The conclusion is that R&R activities can result in potentially dangerous exposures to children, especially those aged 6 yrs old and under.

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2.4 Common Renovation and Remodeling Activities

Renovation activities cover a broad range of activities. 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 under current regulation at 40 CFR 745.233. The term renovation includes (but is not limited to): the removal or modification of painted surfaces or painted components (e.g., modification of painted doors, surface preparation activity (such as sanding, scraping, or other such activities that may generate paint dust)); the removal of large structures (e.g., walls, ceiling, large surface replastering, major replumbing); and window replacement. Many common interior renovation and remodeling projects generate dust, including:

- Surface preparation for projects such as sanding, scraping, and sawing;
- Removing carpeting, cabinets, or other components;
- Refinishing painted floors; and
- Removing paint with a heat gun or open flame torch.

Renovation and remodeling activities conducted on building exteriors can release lead-contaminated dust and debris to surrounding soil and ground cover. If young children play in these areas, their normal hand-to-mouth behavior can result in lead exposures. Exterior work can also release dust that moves indoors by way of contaminated clothing or through open windows or doors.

2.5 Pre-Panel Outreach

The Agency conducted two stakeholder meetings to discuss the types of contractors and/or tasks which produce lead hazards during renovation and remodeling. These meetings were held in December, 1998, and March, 1999, and included representatives of labor organizations,

contractors, professional remodeling and renovation workers, experts in lead health effects, and others. Summaries of these meetings are in Appendix A.

2.6 Other Related Rules

Title X, the Residential Lead-Based Paint Hazard Reduction Act of 1992, refocused national attention and resources on reducing lead hazards before a child is poisoned, rather than relying on poisoned children as the trigger for action. Title X assigned specific regulatory responsibilities to EPA, HUD, and the Occupational Safety and Health Administration (OSHA) to help reduce lead-based paint hazards in private housing. Title X also imposes specific lead-based paint requirements in federally supported housing, that is, federally owned units and units receiving federal project-based subsidies.

EPA's Renovation and Remodeling proposal is one of several regulatory assignments made under the authority of Title X. It is important not only to consider key regulatory options being considered for this proposal, but to understand the overall regulatory framework envisioned by Congress in Title X. Therefore, the remainder of this section contains brief overviews of other regulatory provisions called for under Title X which are related to this proposed rulemaking.

40 CFR 745 Subpart D – Lead Based Paint Hazards (TSCA Section 403)

Section 403 of TSCA directed EPA to establish criteria for identifying lead-based paint hazards, including lead-contaminated household dust, and lead-contaminated residential soils. On June 3, 1998 EPA proposed standards for identifying lead-based paint hazards. The following are the proposed EPA standards for the identification of lead dust and soil hazards:

- EPA is proposing that dust be considered a hazard based on average measurements of the loading of lead in dust. Loading is the mass per unit area of lead present per unit of surface area. The proposed dust-lead hazard standards are 50 micrograms per square foot ($\mu g/ft^2$) or higher for uncarpeted floors and 250 $\mu g/ft^2$ or higher for interior window sills.
- EPA proposes that bare soil on residential property and child-occupied facilities be considered a hazard based on the yard-wide average concentration of lead. Lead concentration is defined as the relative amount of lead within the soil measured in parts per million (ppm) by weight. The proposed hazard standard is 2000 ppm. EPA recommends removing or permanently covering soil containing lead that equals or exceeds this level.

The proposal also includes standards for clearance following post-abatement dust cleanup. The proposed clearance standards are the same as the dust-lead hazard standards: 50 $\mu g/ft^2$ and 250 $\mu g/ft^2$ for uncarpeted floors and window sills, respectively. These clearance standards could be applied as clearance criteria to determine adequate cleanup in the R&R rule now being developed.

NOTE: There is the existing EPA guidance on lead-based paint hazards issued on July 14, 1994 and subsequently published in the Federal Register on September 11, 1995 (60 FR 47248). This guidance remains EPA's official policy with respect to the identification of lead-based paint hazards until the Agency publishes a final regulation.

40 CFR 745 Subpart E – Residential Property Renovation (TSCA Section 406(b))

Section 406(b) of TSCA directed EPA to develop requirements for renovators to distribute a lead hazard information pamphlet to housing owners and occupants before conducting renovations in pre-1978 housing. The resulting regulation, issued on June 1, 1998, requires persons performing renovations of target housing for compensation to provide a lead hazard information pamphlet to owners and occupants prior to commencing the renovation. This regulation also requires that tenants be provided advance notification on the nature of the renovation activities in common areas of multi-family housing. Generally the regulation applies, with some exclusions, to all compensated renovation, remodeling, and repair activities that disturb painted surfaces. Exclusions include minor repairs and maintenance activities that disrupt $2ft^2$ or less of painted surface, emergency renovation operations, renovation activities taking place in housing determined to be lead free by a certified inspector, lead abatement activities, and renovation activities in most housing for the elderly or disabled.

Due to the above described section 406(b) requirements, contractors conducting renovation activities subjected to the requirements of the proposed Renovation and Remodeling rulemaking will likely have provided owners and occupants with the lead hazard information pamphlet prior to the renovation being conducted.

40 CFR 745 Subpart L – Lead-Based Paint Activities and Subpart Q -- State and Indian Tribal Programs (TSCA Section 402(a))

Section 402(a) of TSCA directed EPA to ensure that individuals conducting lead-based paint activities in target housing, buildings, and other structures are properly trained and certified, that training programs providing instruction in such activities are accredited and that these activities are conducted according to reliable, effective and safe work practice standards. The final rule titled “Requirements for Lead-Based Paint Activities” was published on August 29, 1996 and will be fully implemented on March 1, 2000 for target housing and child-occupied facilities.

40 CFR 745 Subpart L, which applies only in States and Tribes that do not apply for and receive authorization to operate their own programs under Subpart Q, contains several key elements, including:

- Training and certification requirements to ensure the proficiency of contractors who offer to conduct lead-based paint inspection, risk assessment and abatement

services in target housing and child occupied facilities;

- Accreditation requirements to ensure that training programs provide quality instruction in current and effective work practices; and
- Work practice standards to ensure that lead-based paint activities are conducted safely, reliably and effectively.

40 CFR 745 Subpart Q contains several key elements, including:

- Procedures for States and Tribes to apply to EPA for authorization to administer these elements at the State or Tribal level.
- A model state lead program that States and Tribes can use to develop their programs.

The Subpart L regulations developed under TSCA 402(a) specifically exclude renovation, remodeling, landscaping or other activities, when such activities are not designed to permanently eliminate lead-based paint hazards, but, instead, are designed to repair, restore, or remodel a given structure or dwelling, even though these activities may incidentally result in a reduction or elimination of lead-based paint hazards. Furthermore, the definition of abatement does not include interim controls, operations and maintenance activities, or other measures and activities designed to temporarily, but not permanently, reduce lead-based paint hazards.

The Subpart L regulations apply to those activities which are specifically intended to permanently eliminate lead-based paint hazards. Therefore, the Subpart L regulations would not apply to those activities potentially affected by the upcoming R&R proposal. However, Section 402(c) of TSCA does instruct EPA to revise the regulations developed under TSCA section 402(a) to apply to renovation and remodeling activities. EPA will, where applicable, develop for the renovation disciplines certification and accreditation requirements that are administratively similar to those under Subpart L. EPA will consider whether the R&R proposal should include the following abatement work practice restrictions which include the following:

- open flame burning or torching of lead-based paint is prohibited;
- machine sanding, grinding, abrasive blasting, or sandblasting of lead-based paint is prohibited unless used with a HEPA exhaust control;
- dry scraping of lead-based paint is permitted only in conjunction with heat guns or around electrical outlets or when treating defective paint spots totaling no more than 2 square feet in any one room, hallway or stairwell or totaling no more than 20 square feet on exterior surfaces; and
- operating a heat gun on lead-based paint is permitted only at temperatures below 1,100 degrees Fahrenheit

40 CFR 745 Subpart F – Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards Upon Sale or Lease of Residential Property (Section 1018)

Section 1018 of the Residential Lead-Based Paint Hazard Reduction Act of 1992 directed EPA and HUD to jointly issue regulations requiring disclosure of known lead-based paint and/or lead-based paint hazards by persons selling or leasing housing constructed before the phase out of residential lead-based paint use in 1978. Under that authority, EPA and HUD established the following requirements:

- Sellers and lessors of most residential housing built before 1978 must disclose the presence of known lead-based paint and/or lead-based paint hazards in the housing;
- Sellers and lessors must provide purchasers and lessees with any available records or reports pertaining to the presence of lead-based paint and/or lead-based paint hazards;
- Sellers and lessors must provide purchasers and lessees with a federally-approved lead hazard information pamphlet;
- Sellers must provide purchasers with a 10-day opportunity to conduct a risk assessment or inspection for the presence of lead-based paint and/or lead-based paint hazards before the purchaser is obligated under any purchase contract;
- Sales and leasing contracts must include certain disclosure and acknowledgment language; and
- Agents must ensure compliance with these requirements.

The above disclosure provisions and requirements to provide lead reports/records would be applicable to any environmental sampling reports conducted pursuant to the R&R rule, if such requirements are required under a final R&R rule.

40 CFR 745 Subpart P – Management and Disposal for Lead-Based Paint Debris

On December 18, 1998 EPA proposed a rule under the Toxic Substances Control Act (TSCA) to provide new standards for the management and disposal of lead-based paint (LBP) debris generated by individuals or firms. The proposal includes a temporary suspension of regulations under Subtitle C of the Resource Conservation and Recovery Act (RCRA) which currently apply to LBP debris. The Debris proposal does not address LBP debris generated by homeowners in their own homes.

The proposal would provide new management and disposal standards for generators of LBP debris under TSCA. These standards would be generally less burdensome than current RCRA hazardous waste requirements, yet the standards are reliable, effective, safe, and protective of human health and the environment. The proposed debris standards apply to LBP debris generated as a result of renovation and remodeling, as well as other activities.

29 CFR 1926.62 -- Lead in Construction Standard

The Occupational Health and Safety Administration through the Lead in Construction

standard established worker exposure limits of 50 micrograms of lead per cubic meter of air averaged over an eight-hour workday. In addition the regulation created a worker protection program which includes:

- Hazard determination, including exposure assessment;
- Engineering and work practice controls;
- Respiratory protection;
- Protective clothing and equipment;
- Housekeeping;
- Hygiene facilities and practices;
- Medical surveillance and provisions for medical removal;
- Training;
- Signs; and
- Recordkeeping.

The Lead in Construction standard applies to all construction work where an employee may be occupationally exposed to lead. This includes but is not limited to construction, alternation, repair, painting, and decorating. In general the standards are targeted at the protection of the worker and do not overlap with the requirements being considered for EPA's Renovation and Remodeling proposed rule which seeks to protect occupants. However, the housekeeping requirements do place restrictions on cleanup practices which would also apply to contractors conduction renovation activities as defined by EPA. These requirements call for the following:

- All surfaces to be maintained as free as practicable of accumulated lead;
- Floors and other surfaces shall wherever possible be cleaned by vacuuming or other methods that minimize the likelihood of lead becoming airborne;
- Shoveling, dry or wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and found not to be effective;
- Where vacuuming methods are selected, the vacuums shall be equipped with HEPA filters and used and emptied in a manner which minimizes the reentry of lead into the workplace; and
- Compressed air shall not be used to remove lead from any surface unless the compressed air is used in connection with a ventilation system designed to capture the airborne dust created by the compressed air.

24 CFR Part 35 -- Lead-Based Paint Poisoning Prevention in Certain Residential Structures (Section 1012/1013)

HUD issued a final rule September 15, 1999 which establishes requirements that will control lead-based paint hazards in housing that is financially assisted by the Federal government or sold by the government with certain exceptions. The types of housing covered include the following:

- Federally-owned housing being sold
- Housing receiving a federal subsidy that is associated with the property, rather than with the occupants
- Public housing
- Housing occupied by a family receiving a tenant-based subsidy
- Multifamily housing for which mortgage insurance is being sought
- Housing receiving federal assistance for rehabilitation, reducing homelessness, and other special needs

Exceptions include the following:

- Housing built after January 1, 1978
- Housing exclusively for the elderly or people with disabilities, unless a child under age 6 is expected to reside there
- Zero bedroom dwellings, including efficiency apartments, single-room occupancy housing, dormitories, or military barracks
- Property that has been found to be free of lead-based paint by a certified lead-based paint inspector
- Property where all lead-based paint has been removed
- Unoccupied housing that will remain vacant until it is demolished
- Non-residential property
- Any rehabilitation or housing improvement that does not disturb a painted surface.

Also excluded are emergency repair actions needed to safeguard against imminent danger to human life, health or safety, or to protect property from further structural damage are exempted. Finally, the requirements do not apply to emergency housing assistance (as for the homeless). Most of the regulation takes effect on September 15, 2000, however, prohibitions against using dangerous methods of removing paint take effect on November 15, 1999.

The rule requires that all deteriorated paint must be stabilized or abated, except when the paint is found not to be lead-based paint or when the deterioration is limited to hairline cracks or small nicks, scratches or nail holes. In addition, "safe work practices" (that is, occupant protection, worksite preparation and specialized cleaning) must be used during stabilization or abatement only when the area of paint being disturbed is greater than:

- 20 square feet on exterior surfaces; or
- 2 square feet in an interior room; or
- 10% of a building component with a small surface area (such as a painted window frame)

Certain methods of removing paint lead-based paint produce high levels of lead dust, and are prohibited in conjunction with this regulation. They are:

- Open-flame burning or torching.
- Abrasive blasting without high efficiency (“HEPA”) vacuum local exhaust.
- Machine sanding or grinding without HEPA vacuum local exhaust.
- Heat guns at temperatures above 1100°F.
- Dry scraping (wet scraping should be done instead, except near electrical outlets, where use of water could result in electrocution hazards and except for very small areas of deteriorated paint, such as nail holes and hairline cracks);
- Paint stripping in a poorly ventilated space using a volatile stripper that is a hazardous substance (according to regulations of the Consumer Product Safety Commission or the Occupational Safety and Health Administration), such as methylene chloride.

Clearance is required after all lead hazard control activities in all HUD programs except for single-family mortgage insurance and small jobs. It involves (1) a visual assessment to assure that there aren't any deteriorated paint surfaces or visible amounts of dust or debris remaining on the property, and (2) dust testing to assure that the standards for lead in dust have been complied with. Dust testing cannot occur until after the housing has passed the visual assessment. If dust lead levels equal or exceed the standards, there should be another cleaning of the spaces and surfaces represented by the failing dust samples.

A clearance examination must be done by a person who was not involved in performing the hazard control work and who is certified (or licensed) as a lead-based paint inspector, risk assessor, or clearance technician in the State or Indian Country in which the housing is located. A clearance examination can also be done by a person who has been trained but not certified as a clearance technician, provided a certified lead-based paint inspector or risk assessor approves the work of the clearance technician and signs the report of the clearance examination. Paint testing and full lead-based paint inspections must be done by a certified lead-based paint inspector. A risk assessment must be done by a certified risk assessor.

Abatement of lead-based paint or lead-based paint hazards must be done by a certified abatement worker, and the work must be supervised by a certified lead-based paint abatement supervisor. Interim controls of lead-based paint hazards must be done by a person who is trained in accordance with the hazard communication standard (at 29 CFR 1926.59) of the U.S. Occupational Safety and Health Administration (OSHA) and who is either supervised by a certified abatement supervisor or has completed one of several training courses that explain how to conduct such work safely so as not to contaminate the environment or expose occupants to lead.

Remaining regulatory requirements vary, depending on the nature of the Federal involvement (e.g., whether the housing is being disposed of or assisted by the Federal government); the type, amount and duration of financial assistance; the age of the structure (which is associated with the amount of lead in the paint); and whether the dwelling is rental or owner-occupied. A table summarizing the requirements for each type of housing assistance can

be found in Appendix B.

There is a fundamental difference between EPA's proposed R&R rulemaking and these HUD requirements. The difference being that the HUD requirements not only seek to control new lead hazards resulting from the disturbance of leaded paint (similar to the objective of EPA's proposal) but also seeks to identify and control existing lead hazards. Because of this difference the HUD requirements include additional regulatory provisions aimed at the identification and elimination of existing lead hazards. These provisions include protocol for the inspection of housing to identify lead hazards, as well as requirements that all deteriorated paint must be stabilized or abated.

Regarding the control of new lead hazards resulting from the disturbance of leaded paint, the HUD and proposed EPA regulation are similar in that they both seek the use of qualified workers and establish requirements for appropriate work practices. EPA is involved in a dialogue with HUD as it develops the proposed R&R rulemaking and will seek to make the two regulatory provisions as complimentary as possible considering the goals and objectives of the rulemaking.

3. Options and Approaches for Renovation and Remodeling Regulations

Congress directed the Agency to revise the lead-based paint activities regulations (40 CFR Part 745 Subpart L) to include renovation or remodeling activities that create lead-based paint hazards. The existing regulations for the abatement of lead-based paint contain four key elements--training, accreditation, certification, and work practice standards -- the purpose of which is to ensure regulated activities are conducted in a safe, effective, and reliable manner.

Using the framework of the existing lead-based paint activities regulations as a starting point the Agency identified components of a proposed regulation addressing renovation and remodeling activities. The components include the four key elements contained in the lead-based paint activities regulations, which this rulemaking will revise, and additional components which highlight key work practice issues. The components are as follows:

1. applicability
2. firm certification
3. individual training and certification
4. accreditation
5. work practice standards
6. prohibited practices
7. exterior clearance
8. interior clearance

For each regulatory component, EPA identified several options. These options can be mixed and matched to create rulemaking approaches or scenarios. For example, an approach based upon the existing lead-based paint activities requirements or Full Regulatory Approach is

reflected by the option 1 selection for each component. The Limited Regulatory Approach is created by selecting each option that is presented in **bold faced type**. The Limited Regulatory Approach reflects input from outreach activities over the past 18 months.

When reviewing the potential options, it will be important to note some key regulatory definitions and exemptions to make sure that we are all discussing the options using the same basis. These definitions are given below:

Child-occupied facility means a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, 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 visit lasts 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.

Lead-based paint means paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams per square centimeter or more than 0.5 percent by weight.

Lead-based paint free housing means target housing that has been found to be free of paint or other surface coatings that contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight.

Lead-based paint hazard means any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as identified by the Administrator pursuant to TSCA section 403.

Target housing means any housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any one or more children age 6 years or under resides or is expected to reside in such housing for the elderly or persons with disabilities) or any 0-bedroom dwelling.

Emergency renovation operations means renovation activities, such as operations necessitated by non-routine failures of equipment, that were not planned but result from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, or threatens equipment and/or property with significant damage.

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 under current regulation (40 CFR 745.223). The term renovation includes (but is not limited to): the removal or modification of painted surfaces or painted components (e.g., modification of painted doors, surface preparation activity (such as sanding, scraping, or other such activities that may generate paint dust)); the removal of large structures (e.g., walls,

ceiling, large surface replastering, major re-plumbing); and window replacement.

When reviewing the potential options, it will be important to note some existing regulatory exemptions that will also apply to this proposed rulemaking. These exemptions are given below:

Exemptions include:

- This would not apply to renovations in which a written (lead-based paint free) determination has been made. Lead-based paint free means target housing or child-occupied facilities in which a written determination has been made by an inspector (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 milligram per square centimeter or 0.5 percent by weight, where the renovator has obtained a copy of the determination.
- This would not apply to persons who perform these activities within residential dwellings that they own, unless the residential dwelling is occupied by a person or persons other than the owner or the owners immediate family while these activities are being performed

3.1 Applicability

A renovation and remodeling proposed rule may apply to individuals and firms engaged in renovation and remodeling activities in all or certain housing built before 1978, the year lead-based paint was banned. Under all of these options, the regulated parties may include residential rental property owners and managers, general contractors, and special trade contractors such as painters, plumbers, carpenters, and electricians who perform renovation and remodeling activities on the applicable housing stock. Possible options include:

Option 1:	**All pre-1978 housing**
Option 2:	All pre-1978, rental housing only
Option 3:	All pre-1960 housing
Option 4:	All pre-1960, rental housing only

Possible exemptions include: 1) Work involving minor repair or maintenance, disturbing less than two square feet of painted surfaces (such as a small electrical or plumbing job), and 2) Emergency renovation projects (any follow-up renovation and remodeling needed after the initial work for an emergency project would not be exempt).

3.2 Certification of Firms

In order to conduct regulated renovation and remodeling activities, EPA may require a firm to be certified by EPA or an authorized state. Certification of firms may require the firm to be certified and to hire only employees with at least minimal requirements or that are certified. These

firms would only include those who the rule is applicable, such as a firm's renovation and remodeling activities on housing built prior to 1978 (Option 1). If a contractor only works on newer homes, such as those built after 1978, then, they would not be required to be certified. These certification requirements could apply to:

Option 1: All renovation and remodeling firms
Option 2: Only firms involved in large-scale surface preparation or demolition
Option 3: No firms

3.3 Training and Certification of Individuals

EPA may require individuals engaged in regulated renovation and remodeling activities to complete an accredited training course and be certified by EPA or an authorized state. Certification and training of individuals and firms engaged in lead-based paint renovation activities may be required to become a certified by EPA as a dust clearance technician, or renovation and remodeling worker. Certification requirements for a dust clearance technician, or renovation and remodeling worker, may include successfully completing an accredited course in the appropriate discipline and submitting a formal application. Re-certification may also be required to keep abreast of the most current technologies and practices. Possible options include:

Option 1: Training and certification of all individuals performing regulated renovation and remodeling activities
Option 2: Training and certification of supervisors performing regulated renovation and remodeling activities only; worker training would be optional
Option 3: <u>Training</u> required for all individuals performing regulated renovation and remodeling activities; no <u>certification</u> requirements
Option 4: No training and certification requirements

3.4 Accreditation of Training Providers

EPA may require entities that train renovation and remodeling workers to obtain accreditation from EPA or an authorized state. Accreditation for a training program may involve approval of a training firms program documentation, such as, training materials, instructor and student manuals, course agenda; a description of the facilities and equipment to be used; a description of the activities and procedures that will be used for conducting the assessment of hands-on skills for each course and a quality control plan. Some of the requirements for the accreditation of training programs may involve training managers with experience to conduct courses that provide hands-on training and to implement a quality control plan. The Agency may establish some minimum training curriculum and training hour requirements for renovation workers and dust clearance technicians. To become accredited and offer lead-based paint courses instruction in the specific disciplines listed below, training programs may need to ensure that their courses include specific topics and have a minimum amount of training hour requirements. Another requirement may include offering refresher courses for renovation worker and dust

clearance technician for a minimal amount of time. Topics to cover may include a review of current safety practices relating to lead-based paint activities, current laws and regulations relating to lead-based paint activities, current technologies relating to lead-based paint activities. The basic options are:

Option 1: **Require all training providers to be accredited**
Option 2: Do not require training provider accreditation; instead, using the OSHA training approach, require firms to document the training of their employees in key areas specified by the Agency

3.5 Work Practice Standards

The current regulations for lead-based paint activities contain prescriptive work practice standards that take into account reliability, effectiveness, and safety. EPA could establish prescriptive work practice standards for renovation and remodeling activities found in the paper entitled "Lead Dust Minimization Work Practices for Renovation and Remodeling Draft Technical Manual" in Appendix C. These practices include:

- Minimizing and containing the amount of lead-contaminated dust created;
- Restricting occupant access to work sites when dust is present;
- Cleaning-up the site using methods that effectively reduce this dust.

Alternatively, EPA could establish performance-based standards, allowing renovation and remodeling contractors the flexibility to determine how to meet the performance standards [may include a reference to the example performance standards]. Thus, the main options are:

Option 1: Prescriptive containment and cleanup requirements
Option 2: **Performance-based containment and cleanup requirements (example, interior and exterior fugitive dust restrictions)**
Option 3: None

3.6 Prohibited Practices

Under the current regulations for lead-based paint abatement activities, certain practices are prohibited because of the risks they create. These practices are open flame burning or torching of lead-based paint; machine sanding, grinding, abrasive blasting, or sandblasting of lead-based paint *except* when done with HEPA exhaust control; dry scraping of lead based paint *except* around electrical outlets or for any area no more than 2 square feet in any one room, hallway, or stairwell, or for any area no more than 20 square feet on exterior surfaces; and operating a heat gun at 1100 degrees Fahrenheit or higher. For the renovation and remodeling rule, EPA could:

Option 1: Continue with lead abatement work practice prohibitions described above
Option 2: Modify the abatement work practices prohibitions to:
a) Allow exterior open flame burning or torching of lead-based paint and

b) Eliminate restrictions on the use of dry scraping

Option 3: **Modify abatement work practice prohibitions as in option 2 and also allow interior flame burning with some restrictions – see interior clearance, option 2**

Option 4: Have no restricted practices

3.7 Exterior Clearance

EPA could require an exterior clearance following exterior renovation and remodeling. This clearance could include a visual inspection for deteriorated lead-based paint, visual inspection to determine if visible amounts of dust and debris remain, and soil testing for lead contamination. Thus, the options include:

Option 1: **Visual clearance following all exterior renovation and remodeling**

Option 2: Soil sampling following all exterior renovation and remodeling

Option 3: No clearance following exterior renovation and remodeling

3.8 Interior Clearance

EPA also could require an interior clearance following interior renovation and remodeling. Interior clearance would include a visual inspection of the work area to verify if deteriorated painted surfaces or visible amounts of dust, debris, or residue remain after renovation and remodeling activity, and clearance sampling for lead-contaminated dust. Thus, the options include:

Option 1: Dust testing following all interior renovation and remodeling

Option 2: **Dust testing following specific jobs involving large-scale surface preparation or demolition and any practice prohibited by the abatement rules – see prohibited practices, Scenario 1, plus visual clearance for all other interior jobs**

Option 3: Visual clearance following all interior renovation and remodeling

Option 4: No clearance following interior renovation and remodeling

In owner-occupied housing, an exemption may allow the owner to waive any dust clearance sampling requirements in writing. The contractor will would be required to keep records of such waiver.

3.9 Costs of the Options

Estimates of the rule compliance costs and resulting impacts on effected entities reflect SER comments received during the outreach of the Panel process. In particular, the estimates of training costs were increased after receiving SER feedback and following additional EPA research. SERs also indicated that clearance costs were too low. EPA investigations confirmed this and revised estimates accordingly. Several other issues such as the ability of entities to pass costs on to customers (home owners, renters, etc.), insurance availability and cost impacts, and the impact of delays due to rule requirements (such as testing), will require more in depth research and additional data. EPA will continue to analyze those issues, however, they are not included in the compliance cost or impact estimates. EPA provided responses to the economic issues that the SERs raised during the Panel's outreach and these are detailed in the Q&A document that can be found in Appendix C. EPA will continue to refine the impact analysis of the proposal, utilizing small entity comments on costs and other issues.

The following two tables present EPA compliance cost estimates for the renovation and remodeling rule. Table 1 presents two different scenarios. Scenario 1 is the Abatement or Full Regulatory Scenario, and Scenario 2 is the Limited Regulatory Scenario. For each scenario, the estimated average regulatory compliance cost, the estimated average regulatory compliance cost per R&R event, and the primary requirements under each scenario. For this comparison an R&R "event" is a combination of tasks that occur in the same room at the same general time. Consumers spend an average of approximately $2,700 per R&R event, in the absence of any costs related to the proposed R&R rule.

EPA has estimated that a rule that applies to all pre-1978 housing would affect 14.5 million interior and 7.9 million exterior R&R events for a total of 22.3 million events per year. These estimates are based on U.S. Census and 1997 American Housing Survey data, with do-it-yourself, non-lead-based paint, and other events excluded as appropriate. EPA also estimates that there are approximately 1.5 million R&R workers, supervisors, and technicians involved in R&R work, 230,000 R&R firms, and 500 potential training providers. Employee and firm turnover rates, by discipline, included in the analysis.

Table 1

Estimated Costs of Abatement (or Full Regulatory) Approach and Limited Regulatory Approach

	Scenario 1: Abatement or Full Regulatory Scenario	**Scenario 2: Limited Regulatory Scenario**
Total Regulatory Compliance Cost	**$5,130,000,000/yr.**	**$3,115,000,000/yr.**
Regulatory Compliance Cost per Event (22.3 million events)	**$230.^{00}**	**$139.^{00}**
Category	**Scenario 1 Requirements**	**Scenario 2 Requirements**
Applicability	All pre-1978 housing	All pre-1978 housing
Firm Certification	Yes	Yes
Individual Training/Certification	Training and certification for all workers	Training for all workers; no certification
Accreditation	Yes	Yes
Work Practices	Prescriptive	Performance
Prohibited Practices	Abatement	Abatement restrictions, dry scrape & flame OK w/clearance
Exterior Clearance	Visual	Visual
Interior Clearance	Dust testing after all events	Dust testing after major events

Table 2 demonstrates how the estimated regulatory compliance cost of Scenario 2, the Limited Regulatory Approach, would change with changes in specific requirements (regulatory options). The first row for each component presents the option for Scenario 2. For example, for the Individual Training and Certification component, Scenario 2 requires training for all workers but no certification. If this scenario were modified to require both training and certification for all workers, the estimated total regulatory compliance cost would increase by $39,000,000 a year. The far right column expresses the same modification as an increase of $26 per average employee (annualized). As another example, Scenario 2 requires that all firms be certified. If certification were required only for firms involved in large-scale jobs, the estimated regulatory compliance cost reduction would be minimal. If, however, certification was not required for any firm, then the estimated total regulatory compliance cost would decline by approximately $21,000,000 a year or $92 per firm (annualized). Note that estimated cost decreases indicated by parentheses around

the number (e.g., ($21,000,000/yr.)).

Table 2
Changes in Regulatory Compliance Estimated Cost by Varying Scenario 2

Component	Requirements	Total Regulatory Compliance Cost	Regulatory Compliance Cost Per-Unit (event, firm, employee, etc.)
Applicability	All pre-1978 housing	* Scenario 2 *	* Scenario 2 *
	All pre-1960 housing (all R&R firms and workers incl.)	($1,140,000,000)	($131) per post-60 pre-78 event
	All pre-1960 housing (61% of R&R firms and workers incl.)	($1,221,000,000)	($140) per post-60 pre-78 event
Firm Certification	Yes	* Scenario 2 *	* Scenario 2 *
	Yes, large scale jobs only	Minimal cost reduction	Minimal cost reduction
	No	($21,000,000/yr.)	($92) per firm, annualized
Individual Training and Certification.	Training for all workers, no certification	* Scenario 2 *	* Scenario 2 *
	Both training and certification for all workers	$39,000,000/yr.	$26 per ave. employee, annualized
	Train and certify supervisors only	($151,000,000/yr.)	($121) per ave. non-superv. empl., annualized
	No training or certification	($191,000,000/yr.)	($128) per ave. employee, annualized
Accreditation	Yes	* Scenario 2 *	* Scenario 2 *
	No	($200,000/yr.)	($400) per training provider, annualized
Work Practices	Performance	* Scenario 2 *	* Scenario 2 *
	Prescriptive	$576,000,000/yr.	$26 per event
	None	No change if clearance required	No change if clearance required
Prohibited Practices	Abatement restrictions, dry scrape and flame OK with clearance	* Scenario 2 *	* Scenario 2 *
	Abatement restrictions	Unknown	Unknown
	Abatement restrictions, dry scrape and flame OK	Unknown	Unknown
	No restricted practices	Unknown	Unknown
Exterior Clearance	Visual	* Scenario 2 *	* Scenario 2 *
	Soil sampling (in lieu of visual clearance)	$393,000,000/yr.	$50 per exterior event
	None	($787,000,000/yr.)	($100) per exterior event
Interior Clearance	Dust testing after major events	* Scenario 2 *	* Scenario 2 *
	Dust testing after all events	$1,399,000,000/yr.	$150 per minor interior event
	Visual after all events (in lieu of DT after major events)	$675,000,000/yr.	($50) per major + $100 per minor int. event
	Visual after major events (in lieu of DT after major events)	($258,000,000/yr.)	($50) per major interior event
	None	($773,000,000/yr.)	($150) per major interior event

4. Industries Potentially Directly Affected by the Proposal

4.1 Small Entities Potentially Affected by the Proposal

Contractors: The proposed rule regulates renovation and remodeling activities that generate lead hazards. As such, firms performing those activities may be impacted. Depending on the selected regulatory option, impacts may include costs associated with firm certification, employee training and required work practices. The small entity impact analysis includes a wide range of R&R disciplines corresponding to six different 4-digit SIC codes as detailed in Table 3. The SBA defines size thresholds for small businesses at the 4-digit SIC level. According to the SBA small business size thresholds, of either $7 or $17 million in annual revenue depending on SIC code, over 98% of firms in these disciplines are small.

Table 3: Potential Industries and Impacts of the TSCA 402(c) - R&R Proposal

	SIC	SIC Description	SBA Definition of Small	# of Affected Entities[1]	% Small[2]	Potential Impacts
Contractors	1521[a]	General Contractors - Single-Family Houses	$17 million	46,182	99.9%	• Firm certification • Employee training and/or certification • Work practice standards which may include requirements for: ❍ containment ❍ dust minimization ❍ cleanup ❍ clearance sampling
	1522[b]	General Contractors - Residential Buildings, Other Than Single-Family, Except Hotel & Motel (pt)	$17 million	3,737	99.1%	
	1711[c]	Plumbing, Heating and Air-Conditioning	$7 million	68,723	98.3%	
	1721[d]	Painting and Paper Hanging	$7 million	30,230	99.7%	
	1731[e]	Electrical Work	$7 million	45,447	98.2%	
	1751[f]	Carpentry Work	$7 million	34,728	99.6%	
	SIC	SIC Description	SBA Def. of Small	Number of Entities	% Small	Potential Impacts
Training Providers	8249[3]	Vocational Schools NEC (pt)	$5 million	3,366	97.7%	• Training program accreditation

	SIC	SIC Description	SBA Def. of Small	Number of Entities	% Small	Potential Impacts

	7389[4]	Business Services NEC (pt)	$5 million	52,375	99.1%	• Firm Certification • Employee training and/or certification • Work practice standards which may include requirements for: ❍ testing lead concentration of painted surfaces ❍ clearance sampling

	SIC	SIC Description	SBA Def. of Small	Number of Entities	% Small	Potential Impacts
Property Owners and Managers	6513	Operators of Apartment Buildings	$5 million	48,330	99.1%	• Training and/or certification of maintenance staff • Requirements to hire trained and/or certified contractors • Compliance with work practice standards
	6514[5]	Operators of Dwellings Other Than Apartment Buildings	$5 million	9,271	99.7%	
	6531[6]	Real Estate Agents and Managers, Residential Property Managers (pt)	$1.5 million	29,144	91.2%	

Note: pt – part of, as in only part of this SIC/NAICS industry is matched to the associated NAICS/SIC industry.

1. Note that the number of entities is the total number of affected entities regardless of firm size. For Contractors, the number of entities is calculated as the sum of entities in the *relevant* six-digit SIC groups, as shown below:

a: SIC 1521 comprised of the following six-digit SICs: 152131, 152132
b: SIC 1522 comprised of the following six-digit SICs: 152231, 152232
c: SIC 1711 comprised of the following six-digit SICs: 171111, 171112, 171116, 171117, 171118, 171120, 171122
d: SIC 1721 comprised of the following six-digit SICs: 172120, 172123, 172130
e: SIC 1731 comprised of the following six-digit SICs: 173110, 173120, 173130
f: SIC 1751 comprised of the following six-digit SICs: 175110, 175120, 175130

For Training Providers, Inspectors, Dust Wipe Samplers, Etc., and Property Owners and Managers the number of entities is based on information at the more encompassing four-digit SIC level, or as noted in footnotes 3, 4, 5, and 6.

2. For Contractors, the percent of entities that meet the SBA definition of "small" is based on the size distribution of entities in the four-digit SIC group. Size distribution information is not available at the six-digit level. For Training Providers, Inspectors, Dust Wipe Samplers, Etc., and Property Owners and Managers, size distribution data was available in a variety of formats. As such it is important to note footnotes 3, 4, 5, and 6 when interpreting the corresponding percentage of "small" entities results.

3. Number of entities is the number of firms subject to Federal Income Tax plus the number of firms that are exempt from Federal Income Tax. The percentage of small firms affected is based on the number of establishments that are subject to Federal Income Tax for SIC 824 "Vocational Schools" as size distribution data was available only at the three-digit SIC level.

4. Inspectors, Dust Wipe Samplers, etc. is likely a very small portion of SIC 7389, and is better characterized by NAICS 541350. The number of entities and size distribution information is based on the more encompassing four digit SIC 7389 due to data availability and consistency with the SBA definition.

5. In this case, size distribution data was available for a set of four related four-digit SIC groups. The percentage of small firms, therefore, was based on the ratio of small businesses for establishments in SIC groups 6514, 6515, 6517, and 6519 ("Other Real Estate Operators and Lessors"), while the number of entities is based on SIC 6514 "Operators of dwellings other than apartment buildings" alone.

6. SIC 6531 is divided into a number of parts (pt). The relevant "part" is 6531(pt) "Real Estate Property Managers". This part is further divided in to sub-groups of which "Residential real estate property manages, and Condominium and cooperative owners associations, are the relevant entities. The number of entities is based on these two smaller sub-groups while the percentage of small firms is based on SIC 6531(pt) "Real Estate Property Managers".

Training Providers: If the proposed rule includes training, and requires training programs to be accredited, firms that provide training services may be impacted. Firms most likely provide this type of training are a portion of (4-digit) SIC code 7389 (Vocational training). The SBA small business size threshold for this SIC code is $5 million. Given this definition, over 97% of the firms in this industry are considered small. It is likely that the approximately 177 firms that already provide lead abatement training will offer this training as well, and that an additional 320 training firms will need to seek accreditation to satisfy the estimated demand for training courses.

Inspectors, Dust Wipe Samplers: Impacts on these firms may include firm certification, employee training, and work practice requirements related to testing and sampling techniques. Firms that would most likely provide this type of testing service are a very small portion of (4-digit) SIC code 7389 (Business Services), and are better characterized by NAICS 541350 (Building Inspection Services). Because the SBA small business size threshold is defined at the 4-digit SIC level (at $5 million), our small entity impact analysis is based on the more encompassing SIC 7389. Per the SBA definition over 99% of the firms in SIC 7389 are small businesses.

Property Owners and Managers: The impacts on property owners and managers may include costs related to the training "in-house" maintenance employees and the increased repair and maintenance costs attributable to work practices and other requirements specified in the proposed rule. The SBA small business size thresholds are defined as either $5 million (SIC 6513 and 6514) or $1.5 million (6531). Using the SBA threshold, over 91% of these firms are considered small. See Table 3 for details.

4.2 Small Business Impacts

The Agency's preliminary analysis indicates that this rule may impact a large number of small businesses. For purposes of the Regulatory Flexibility Act and analysis of impacts on small businesses, the Agency is using the definition applied under the Small Business Act (SBA) which defines small businesses by annual revenue. See Table 3 for detail. The rule's compliance burden may include certification and training expenses, and materials and labor costs associated with work practice standards. Potentially affected entities could include training providers, R&R

contractors, lead inspection services firms, and residential property owners/managers. The potentially impacted industries are characterized by a majority of small firms.

Important Impact Estimate Assumptions

The compliance costs are likely to be shared among various entity categories (including the four noted below and indirectly impacted entities such as individual homeowners) based on an entity's ability to "pass costs on" to another entity. Due to data limitations we adopt a conservative assumption that the impacted firms cannot pass *any* compliance costs on to their customers. We assume, for example, that training providers cannot recover the cost of accreditation through increased rates or even volume of students, and while we assume that R&R firms pay to train their workers (along with other compliance costs) they cannot increase the cost of a given renovation. Further, while rental property managers are assumed to incur more expensive renovations (due to the requirements on in-house crews or due to higher costs passed on by the aforementioned impacted R&R firms), they are assumed to be unable to increase rents. As such, we may double (or triple) count some aspects of the economic impact in the small entities analysis presented in this section.

Renovation and Remodeling Firms

· The majority of the proposed rule's impact on R&R firms is related to work practices, clearance, and to a lesser degree training. As such, compliance costs tend to increase proportionately with a firm's volume of Pb R&R "events". Note, however, that many of the firms within the SIC codes presented below derive revenue from non-lead and even non-R&R activities. The largest firms are particularly likely to derive revenue from non-lead R&R sources.

·

	Impact of Ltd. Reg option on R&R firms in aggregate	All firms
< SBA threshold	3.30%	

Dust Inspection Firms

· A Dust Inspection Technician is a new discipline. EPA's analysis estimates 7,980 individuals will perform these services (if clearance testing is required). These individuals will most likely

be employed by building inspection services firms (NAICS 541350) but data is currently only available using SIC categories (Business Services, 7389). The SIC industry data is far more encompassing and includes a large number of firms unrelated to lead dust inspection.

		Impact of Ltd. Reg option on SIC 7389
		All firms
	< SBA threshold	**0.41%** **0.47%**

Training Providers

- The analysis assumes that the 177 providers currently accredited to offer lead abatement training will also seek accreditation to offer lead R&R training. We estimate that an additional 318 "new" providers will be needed to satisfy the demand for training (under the limited regulatory option) for a total of 500 providers. Lead R&R course accreditation fees are estimated at $1,595 per provider for a 4 year accreditation or $429 per provider annualized. This is in addition to the accreditation fees the existing 177 providers pay for lead abatement course accreditations.

- The weighted average impact, including accreditation fees for the new providers and providers currently offering lead abatement courses, is **minimal with no impacts in excess of 1% of revenue per year**.

- The existing 177 "full service" lead abatement training providers will clearly have a higher (than weighted average) overall burden, though only the 12 firms, with annual revenues less than $250k per year, have a significant impact at 1.2% of annual revenues. Notably, the smallest firms are unlikely to be full service providers, and we assume no additional (tuition) revenue as a result of the either the R&R or 402 (Abatement) Fees Rules.

Multi-family Property Owners/Managers

- We do not have distributional data on how many units landlords of various (revenue) sizes own/manage, or what other types of properties they own/manage. Due to the data limitations and because the burden is largely on a "per rental unit" basis, we estimate our burden ratio on

a percentage of average rent basis. For the preliminary calculation presented below we consider the conservative case in which *all* lead-based R&R work is done by in-house crews.

- Due to the aforementioned data limitations, the analysis of impacts on this entity category is based on a hypothetical "typical" property owner/manager based on national averages . Key inputs are presented below. Based on our approach we estimate that the **compliance costs would be approximately 1% of rental income annually**. The smallest, lowest rent owners who renovate very frequently may, of course, be more adversely impacted.

· Average annual rent for MF building (15 units)	
· Average number of units with Pb disturbing R&R in MF building	1.54
· Average number of interior Pb R&R events per unit	

· Average *annualized* compliance costs of ltd reg option (per building)

Interior work practice (3.8 events per bldg.)	$247
Exterior work practice (1 event per bldg.)	$50
Interior testing (1.54 major events per bldg.)	$261
Exterior Testing (1 event per bldg.)	$100
Firm Certification (1 per bldg.)	$92
Employee Training (1 per bldg.)	$128
TOTAL	$879

· **Average annual impact as % of rental revenue**

5. Small Entity Outreach

5.1 Pre-Panel Conference Calls with Small Entities

At the onset of pre-panel discussions with SBA and OMB, EPA held three conference calls with potential Small Entity Representatives (SERs) to obtain feedback on the options and alternatives outlined in section 3. A list of the small business representatives and industry organization representatives that participated in the conference calls are provided with the summary of each conference call contained in Appendix D. Prior to the first call, the potential SERs received a packet of information on the Renovation and Remodeling proposal which included background information, the statutory history and requirements, regulatory options for 8 areas, a technical document describing work practices, and a discussion of the role of a SER,

copies of the SER outreach material can be found in Appendix C. At the first conference call (September 15), we explained the contents of the package, discussing each document to facilitate the potential SERs review of the material. During the next two conference calls (September 22 and 23), the potential SERs had an opportunity to ask questions and provide feedback on each of the options (a summaries of the September 22 & 23 calls is contained in Appendix D).

5.2 Panel Outreach with Small Entity Representatives

The Panel held an outreach meeting with Small Entity Representatives (SERs) on December 3, 1999. Eleven SERs, representing a broad range of small entities from diverse geographic locations, and four association representatives participated in the meeting. SERs had an opportunity to introduce themselves and were asked to briefly discuss their standard cleanup practices. The Panel solicited comments from the SERs on the eight option areas as well as EPA's cost estimates for these options. A summary of the Panel outreach meeting is provided in Appendix D.

6. Small Entity Representatives

EPA, in consultation with SBA, invited 18 SERs to participate in its SBREFA consultation process. The following Table presents the SERs name and affiliation, the activity(s) they perform, their relative size, and the source of their recommendation.

Table 4: SMALL ENTITY REPRESENTATIVES
TSCA 402(C) Renovation and Remodeling Proposed Rule

Name and Address	Activity	# of Employees / Sales Volume	Recommended by:
Jeff Hurst Hurst Total Home, Inc.	Remodeling Contractor	Less than $1 million	National Association of the Remodeling Industry (NARI)
Brandt Domas Domas & Associates, Inc.	Painting and Decorating Contractor	Less than $7 million	Painting and Decorating Contractors of America (PDCA)
Paul Corey Paul J. Corey Painting and Decorating	Painting and Decorating Contractor	Less than $250,000	Painting and Decorating Contractors of America (PDCA)
Bob Hanbury House of Hanbury Builders	Renovation Contractor	Less than 2 million	National Association of Home Builders (NAHB)
Bill Stack Koch Brothers Decorating	Finishing Contractor	Less than $7 million	Finishing Contractors of America (FCA)
Keith Farnham K&R Christopher, Inc.	Finishing Contractor	Less than $4 million	Finishing Contractors of America (FCA)
Emma Brown Handypersons, Inc.	Maintenance and Renovation Contractor	Less than $7 million	United Brotherhood of Carpenters and Joiners of America (UBCJA)
Fred Brenner General Plumbing Corp.	Plumbing Contractor	Less than $7 million	National Association of Plumbing, Heating, and Cooling Contractors
Fred Quercetti	Multi-family Property Owner	Less than $1.5 million	National Multi Housing Council
Frank Pietranton/Chris Wallis Peir Assoc. Real Estate	Multi-family Property Owner	Less than $1.5 million	Institute of Real Estate Management
Richard Baker Baker Environmental Consulting	Trainer and Risk Assessor/Inspector	Less than $7 million	EPA

Name and Address	Activity	# of Employees / Sales Volume	Recommended by:
Kevin Sheehan Lead Safe Renovations	Maintenance and Renovation Contractor	Less than $7 million	EPA
Burt Olhiser JEFFCO Painting and Coating, Inc.	Painting and Decorating Contractor	Less than $7 Million	SBA in response to EPA's formal notification
Kevin Nolan Nolan Painting, Inc.	Painting and Decorating Contractor	Less than $7 Million	SBA in response to EPA's formal notification
Rhonda Daniels	National Association of Home Builders		SBA in response to EPA's formal notification
Dave Potts	National Electrical Contractors Association		SBA in response to EPA's formal notification
Claudia Harris	National Association of Plumbing, Heating, and Cooling Contractors		SBA in response to EPA's formal notification
Eileen Lee	National Multi Housing Council		SBA in response to EPA's formal notification
David Keene	Mechanical Contractors Association of America		SBA in response to EPA's formal notification

7. Summary of Comments from SERs

The Small Business Advocacy Panel for the Section 402(c) of the Toxic Substances Control Act (TSCA) governing renovation and remodeling (R&R) activities affecting lead-based paint rulemaking held an outreach meeting with Small Entity Representatives (SERs) on December 3, 1999. Several SERs submitted written comments to EPA following this meeting, Table 5 identifies these commenters. A summary of the Dec 3rd meeting is provided in Appendix D. The complete written comments of the Small Entity Representatives is contained in Appendix E.

Table 5: List of Written Comments

Name	Organization	Date Received	Number of Pages
Richard A. Baker	Baker Environmental Consulting, Inc.	12/22/99	4
Patrick Connor, Eileen Lee, and Fred Quercetti	National Multi-Housing Council (NMHC) National Apartment Association (NAA)	12/17/99	8
Paul J. Corey	Paul J. Corey Painting and Decorating	12/17/99	2
Rhonda L. Daniels	National Association of Home Builders (NAHB)	01/07/00	4
Brandt O. Domas	Domas & Associates, Inc.	12/17/99	3
Kevin J. Nolan	Nolan Painting, Inc. (Painting and Decorating Contractors of America)	12/17/99	5
Burt Olhiser	Jeffco Painting & Coating, Inc.	12/20/99	4
Kevin J. Sheehan	Renovation & Restoration	12/20/99	6

This paper summarizes the written comments of the SERs. These comments are organized by the following issues:

- Applicability of the rule,
- Firm certification,
- Individual training and certification,
- Accreditation of training providers,
- Work practices standards,
- Prohibited practices,
- Clearance testing,
- Legal liability and insurance,
- General comments on the economic analysis, and
- Other comments on the R&R rule.

Comments on the costs of specific provisions of the rule are summarized under the relevant issue, while general comments on the economic analysis are summarized under topic #9.

7.1 Applicability of the Rule

7.1.1 To What Housing Will the Rule Apply?

Mr. Corey, Mr. Nolan, Mr. Sheehan, Mr. Olhiser, and Mr. Baker state that the regulation should cover all pre-1978 housing. They believe that this approach will lessen confusion and keep the rule consistent with other lead-based paint regulations. Mr. Olhiser also mentions that specifying a year such as pre-1978 housing may help contractors obtain insurance coverage. Mr. Sheehan notes that when work is to be performed in localities where lead-based paint was banned earlier than 1978, owners could institute inspection procedures to identify surfaces with lead-based paint, rather than using a more costly approach of assuming that all painted surfaces contain lead-based paint.

Mr. Connor, Ms. Lee, and Mr. Quercetti suggest that the rule should target the types of pre-1978 properties most likely to contain high concentrations of leaded paint. These high risk categories, they believe, should be based on the year of construction and Census tract data, which are strong indicators of childhood lead exposure. They believe that this approach will be more cost effective than a broader approach, such as regulating all pre-1978 housing. They also suggest that once the program is determined to be successful in high risk properties, EPA could phase it in for other types of properties. In support of this approach, they cited the following:

- The HUD guidelines use a two-tiered approach to testing pre-1978 homes, with more scrutiny applied to pre-1960 construction. EPA has approved this protocol as the basis for state certification programs.

- Reports collected by inspectors in several states have found that less than 30 percent of the post-1960 multi-family housing communities contain lead-based paint. Such paint in these properties is typically found in well-defined locations and built into the matrix of the structure and therefore difficult to remove. HUD studies reportedly show that these lead-based painted surfaces do not pose a hazard because the lead-based paint layer is typically thin and under four layers of intact non-lead-based paint.

- Reports from health departments around the country indicate that the vast majority of reported/investigated cases of elevated blood lead levels in children are from properties built before 1950. The type of rental property most frequently implicated in these cases has one to four units.

Ms. Daniels states that the rule should apply only to pre-1950 housing. She cites several facts in support of her position:

- In the 1940s, dry wall started to replace plaster in home construction and, according to HUD's "Comprehensive and Workable Plan, 1990 Report to Congress," only three percent of wall and ceiling area in homes built with dry wall contain lead-based paint.

- During the 1950s, latex paint replaced most oil paint during the 1950's and latex paint contains less lead than oil paint.

- Pre-1950 homes have higher concentrations of lead in paint that post-1950 homes.

- Ninety-five percent of the white lead used in paint in this century was used before 1950.

7.1.2 What Exemptions Should the Rule Contain?

The SERs discussed two exemptions: (1) a deminimis exemption for activities that disturb less than two square feet of lead-based paint; and (2) an exemption for emergency renovations.

Mr. Sheehan asserts that a deminimis exemption is most important to specialty contractors, since the bulk of their work does not disturb areas greater than two square feet. When these contractors disturb larger areas, they are often subcontractors to a general contractor, project manager, or owner agent who must assure that appropriate precautions are taken.

Mr. Sheehan states that a per component deminimis exemption has the advantage of being easy to apply consistently, however a per room or area deminimis exemption is more protective. Mr. Sheehan states that the terms used in the deminimis exemption must be clearly defined. For example, he suggests that the rules should clearly distinguish between unregulated minor repair or maintenance activities and a regulated renovation activity. Mr. Sheehan criticizes EPA's definitions of "renovation" and "minor repairs and maintenance" in the pamphlet "The Lead-Based Paint Pre-Renovation Rule." He believes that HUD's definitions establishing deminimis levels of 20 square feet on exterior surfaces, 2 square feet in interior rooms, and 10 percent of a building component with a small surface area are "clear, distinct and protective."

Mr. Baker also supports a two square feet exemption but does not take a position on whether he favors a per component or per room or area exemption.

Mr. Sheehan supports an exemption for emergency renovations. He believes that only the activities addressing the source of the emergency should be exempt, and that any subsequent work should comply with this regulation. Mr. Baker also supports an exemption for emergency situations. Mr. Baker also believes that clearance sampling should be conducted after completion of activities performed under either an emergency or a deminimis exemption.

7.2 Firm Certification

Mr. Baker, Mr. Nolan, Mr. Olhiser, and Mr. Sheehan support mandatory firm certification. In the paper distributed to the SERs entitled "Potential Approaches and Options," Option 1 would require all renovation and remodeling firms to be certified. Mr. Baker supports this proposal, as long as contractors certify that they will use only properly trained individuals to conduct the work and will follow all applicable work practice standards. Mr. Olhiser states that mandatory firm certification would help ensure availability of insurance. Mr. Nolan argues that broad applicability of the certification requirements will help improve standard industry practices regarding lead-based paint.

Mr. Corey and Mr. Olhiser think that certified firms should be required to maintain only one trained and certified individual on staff. This individual would be responsible for training and directing fellow employees in implementing lead-safe practices.

Ms. Daniels states that NAHB opposes certification of firms because it is not justified if individual workers are trained.

Finally, Mr. Domas states that the cost estimates for firm certification are too low.

7.3 Individual Training and Certification

7.3.1 Who Must be Certified?

All SERs commenting on this issue supported no certification requirements or certification of supervisors only. Mr. Sheehan and Mr. Connor, Ms. Lee, and Mr. Quercetti oppose any required certification. Mr. Sheehan states that a supervisor should only need to provide proof that he or she has attended the required training. Mr. Connor, Ms. Lee, and Mr. Quercetti state that certification will:

- Impose a high financial burden on small businesses;
- Result in higher fees and more administrative record-keeping;
- Prevent small businesses from working across state lines due to differing state regulations;
- Restrict access to, or the availability of knowledgeable lead-safe workers; and
- Significantly increase the cost of conducting routine work and renovations.

See also their comments under section 3.4.

Mr. Baker supports "licensing" supervisors in R&R firms, but states that such supervisors need not be "licensed/certified" as lead abatement supervisors. Mr. Nolan supports the certification of owners or supervisors, but thinks that certifying all employees would be expensive for small contractors and have limited value. Mr. Olhiser and Ms. Daniels also support requiring only supervisors to be certified.

7.3.2 Who Must be Trained?

Mr. Nolan appears to support requiring training for all renovation and remodeling workers. Mr. Connor, Ms. Lee, and Mr. Quercetti support performance-based training for individuals involved in activities that disturb lead-based paint. They also suggest that EPA refine the scope and definition of a "worker" who will be covered by this regulation. They are concerned that the rules could be applied to maintenance workers, housekeepers, and grounds keepers who perform routine maintenance activities on multi-family properties because, for example, such workers may remove leaded dust through routine vacuuming or similar activities.

Mr. Corey, Mr. Baker, Mr. Sheehan, Mr. Olhiser, and Ms. Daniels support training for supervisors only:

- Mr. Corey thinks that a trained supervisor can instruct his or her employees on lead-safe practices. He also states that without government-funded training, small businesses will not train their workers because of the lost time and increase in overhead costs.

- Mr. Baker states that a trained supervisor should be on-site at all times throughout the R&R process to help ensure compliance.

- Mr. Sheehan states that if a trained supervisor is not on-site, for example when one person can perform a job, the worker performing unsupervised work should have the supervisor training.

- Mr. Olhiser states that since risk management decisions are usually centralized, only the supervisor needs to be trained and certified. He also said that training several workers in addition to the owner or manager would be cost-prohibitive for small painting firms.

- Ms. Daniels states that supervisors are responsible for directing workers and, because they are present throughout the project anyway, there would be no additional cost in requiring a trained supervisor to be present on the job site.

7.3.3 What Kind of Training Should be Required?

Mr. Nolan states that training can be accomplished in much the same way as training for OSHA, where the firm is responsible for the training and compliance of workers. Mr. Sheehan appears to disagree with this approach based on his comments on firm certification. (See his comments in section 2 above.) In support of performance based training, Mr. Connor, Ms. Lee, and Mr. Quercetti state that their industry has worked closely with OSHA to develop the Lead Advisor, an interactive computer program to assist workers in complying with the OSHA lead in construction standard. In addition, National Apartment Association/National Multi-Housing Council (NAA/NMHC) commissioned the production of a video training program to augment requirements of the OSHA standard with practical methods for performing "lead-smart" maintenance activities.

Mr. Sheehan states that the training course should have a prescribed curriculum. Mr. Connor, Ms. Lee and Mr. Quercetti disagree. They want the regulations to "recognize trained individuals" and do not think that training must encompass completing a specific course. Instead, the training requirements could be modeled after the certification program for workers who maintain equipment containing refrigerants and the certification program to become a radon tester or radon mitigation contractor. In both cases, the emphasis is on demonstrated proficiency rather than completing a prescribed course. Mr. Connor, Ms. Lee, and Mr. Quercetti also cite remote distance learning, Agency-prepared field guides, and classroom instruction as training options.

Mr. Baker states that the training curriculum should address the hazards of lead, engineering and work practice controls, methods to reduce worker exposure, proper clean-up techniques, and proper waste characterization and disposal methods. Mr. Nolan thinks that general awareness training could consist of a basic understanding of why a clean, contained work site is the way to work lead smart and lead safe.

Ms. Daniels states that EPA has not tested the effectiveness of training in reducing lead poisoning or evaluated the impact of distributing millions of pamphlets to remodeling clients. Ms. Daniels notes that the training program may need to focus only on the information provided in the pamphlet.

7.3.4 What Are the Costs of Training?

Mr. Domas and Mr. Connor, Ms. Lee, and Mr. Quercetti state that EPA has underestimated the costs of training. Mr. Domas states that EPA's estimate of the wages paid to workers during training, the costs associated with a trainer, and the cost of training materials are too low. He also notes that these expenses are non-billable, non-recoverable costs of sales. Mr. Connor, Ms. Lee, and Mr. Quercetti also disagree with EPA's calculation of training costs. They are concerned that EPA has not included overtime wage and travel costs. They also disagree with the tuition estimate and cite, as an example, the $375 tuition cost for an eight-hour lead-based training course.

Mr. Connor, Ms. Lee, and Mr. Quercetti think that EPA should take into account the need for repeat training due to employee turnover. In the apartment industry, turnover is significant for service technicians, supervisors, and on-site property managers, with rates of 70, 50, and 30 percent per year, respectively. They note that a program that includes certification fees and administrative record-keeping will incur substantial costs due to the high turnover rate and suggest that these costs should be reflected in EPA's analysis.

7.4 Accreditation of Training Providers

Mr. Olhiser, Mr. Corey, Ms. Daniels, Mr. Sheehan, and Mr. Baker support requiring training providers to be accredited. No commenters opposed accreditation.

- Mr. Olhiser notes that accreditation establishes accountability regarding training and post-session record-keeping for certification purposes.

- Mr. Corey and Ms. Daniels state that accreditation is necessary to ensure quality control and consistency across different training programs.

- Mr. Sheehan thinks that accreditation is the only way to ensure the delivery of a prescribed curriculum. He also opposes the OSHA training approach asserting that training does not "trickle down" and citing OSHA's own enforcement program that listed "lack of training" as the number one violation.

Mr. Baker believes that the curriculum should be standardized. He also notes that the person or firm that provides training should have real world knowledge of construction activities.

Mr. Corey states that trade associations should become involved in the accreditation process by encouraging their members to become accredited training providers. He also states that training programs should be trade specific and should be performed at the local or regional level. Mr. Nolan notes that the Painting and Decorating Contractors of America would like to become accredited to provide training.

7.5 Work Practice Standards

Eight SERs support performance based standards and one SER supports prescriptive standards. The proponents of performance based standards make the following arguments:

- Mr. Olhiser notes that, unless EPA underwrites the increased costs, prescriptive work practices, including prohibited practices, will not work because contractors will choose lower cost methods than may be prescribed. He also asserts that HUD's prescriptive work practice standards do not consider the reliability, effectiveness, and safety for the entire regulated community but instead, are designed to ensure that low-skilled workers can work without exceeding permissible lead-exposure levels defined by OSHA.

- Mr. Corey agrees that EPA should take a performance based approach because smart contractors are already providing clean environments for their clients and a prescriptive approach would make such contractors less competitive.

- Ms. Daniels supports this approach because contractors would have the flexibility to manage risks by selecting the practices that they believe are the most effective from a cost and safety perspective.

- Mr. Connor, Ms. Lee, and Mr. Quercetti support the notion of performance based standards and note that OSHA's lead in construction standards already regulate R&R activities.

- Mr. Nolan asserts that prescribed standards will be ignored by some contractors and therefore will stifle good contractors and that performance based standards will encourage innovation in equipment and procedures. He also argues that consumer demand for lead-safe practices is essential to ensuring good industry standards.

- Mr. Sheehan states that the examples of performance based standards presented in the "Potential Options and Approaches" document are acceptable minimum standards to address and accommodate a broad range of jobs. He believes that the wording is flexible enough to allow for contractor flexibility while providing minimum criteria for compliance evaluation purposes.

Mr. Baker supports stringent prescriptive work standards that are flexible enough to allow the use of the practices best suited to each situation, but descriptive enough to ensure that proper and adequate work practices are used.

Mr. Sheehan supports the specific examples of performance based standards listed in the "Potential Options and Approaches" document because they provide minimum protective standards that introduce some degree of containment that can be evaluated at the end of a project.

He states that using HEPA vac and wet wash also should be minimum standards. Mr. Sheehan adds that the wording in the second sentence regarding the confinement of any generated lead dust or debris to the work area for exterior renovations should be changed from "to an adjacent property" to "to any adjacent, uncontained area." He also states that owners and contractors can insist on higher level precautionary measures than what is specified in the performance based standards.

Mr. Domas states that prescriptive practices will increase costs dramatically. He explains that customers understand containment and cleanup costs and contractors can readily pass along these costs. However, the costs associated with prescriptive practices would be significant and the contractor will have greater difficulty in passing these costs on to the consumer.

7.6 Prohibited Practices

7.6.1 What Practices, If Any, Should Be Prohibited?

Some SERs are opposed to prohibiting any practices while other commenters support some prohibitions. Mr. Corey states that he uses many of the paint removal methods that could be prohibited in this regulation, but ensures that his workers guarantee a safe working environment for themselves and a clean, finished product for their clients. He thinks that prohibiting heat removal would make certain jobs, such as preparing a surface for new painting, extremely difficult, if not impossible. Mr. Nolan asserts that prohibiting certain methods such as dry scraping and sanding would cause many problems since wet sanding does not work and customers want smooth surfaces. Contractors would ignore the prohibition or be forced to use cumbersome and dangerous methods.

Mr. Olhiser asserts that banning work practices would be a less cost-effective way to reduce lead poisoning than instituting performance based work standards. He states that banning work practices to protect the health and safety of low-skilled workers is a worthy goal, but is not cost-effective. Mr. Olhiser thinks that workers who are properly trained to use methods that are currently prohibited can complete projects in a safe, cost-effective manner.

Mr. Nolan opposes a prohibition on open burning. He states that there may be no other practical way to restore old and historic millwork and that EPA has not proven that open flame burning produces any significant lead hazard. Mr. Nolan also states that HEPA-attached sanding equipment could become a practical solution to using unshielded equipment, but that the equipment currently has problems.

Mr. Baker states that EPA should clearly identify and prohibit some R&R practices because they may cause lead poisoning. Mr. Baker thinks that contractors, if given a choice, would not use appropriate engineering controls, work practices, and cleanup procedures, because of the increased cost and time involved with these efforts. He also argues that most people who want R&R projects performed are not willing or able to pay the increased costs.

Mr. Connor, Ms. Lee, and Mr. Quercetti are concerned with EPA not prohibiting certain specific work practices. For example, they state that open flame burning outdoors can release significant levels of lead into the atmosphere and add to the overall environmental lead burden. They are also concerned that EPA's prohibitions for R&R activities could be different than HUD's prohibitions for R&R activities in federally-assisted housing. They believe that:

- If EPA's standards are less stringent than HUD's standards, multifamily property owners and managers would have an unfair burden to ensure that their contractors follow HUD's more stringent standards.

- Different EPA and HUD prohibited practices would be confusing to small businesses.

- The prohibitions should not differ because they should be based on the same sound, scientific data since the health risks of R&R are not affected by whether housing is federally-assisted.

- Title X requires consistency between EPA and HUD.

Mr. Sheehan states that work practices should not be prohibited as long as contractors can meet containment, exposure, and clearance requirements. He also discusses several specific work practices or prohibitions.

- Machine grinding and sanding should require HEPA capture and exhaust control.

- Abrasive blasting and sandblasting should require source capture and/or more extensive containment and cleanup measures.

- Dry scraping and heat guns should require more extensive containment and clean-up for both interior and exterior work.

- Machine and hand sanding following chemical stripping also generates high lead dust levels and therefore should not be considered as a low dust generating task.

7.7 Clearance Testing

7.7.1 What Exterior Clearance Requirements Should Be Established?

Mr. Corey, Mr. Olhiser, Mr. Baker, and Mr. Sheehan state that visual inspection should be sufficient for exterior clearance. Mr. Corey asserts that additional requirements would be unnecessary and unduly expensive since most contractors are already doing what they think is necessary to prevent lead dust from entering the home. Mr. Olhiser states that a visible inspection standard will allow contractors and property owners to use their best judgment. Mr. Baker supports an exterior visual clearance requirement if the person conducting the visual clearance is a certified risk assessor and issues a clearance certification and if the clearance standard is similar to "there shall be no visible dust or debris."

In contrast, Mr. Nolan and Ms. Daniels oppose any exterior clearance requirement. Mr. Nolan thinks that the rule should focus on controlling the areas where lead can enter the home, such as by sealing doors and windows, keeping them closed, and performing daily cleaning. He asserts that EPA could set a reasonable standard that involves capturing as much dust and paint chips as possible and emphasizes cleaning up the work site. Ms. Daniels states that NAHB opposes exterior clearance testing, because it is unnecessary when proper cleanup and containment procedures are used.

Mr. Olhiser, Mr. Sheehan and Ms. Daniels oppose soil or wipe sampling for exterior clearance. Mr. Olhiser does not support these clearance methods because a risk assessor or inspector would have to be employed, which would increase project costs without increasing project safety. He also is concerned that risk assessors and inspectors often have little construction experience. Mr. Sheehan says that he is unaware of data correlating exterior lead-based paint and hazardous soil lead levels. He asserts that soil testing will not provide helpful information about a recently completed job, in part because of the wide range of potential sampling error. Mr. Sheehan believes that there is no reason for the R&R rules to be more protective than the abatement standard, which does not require soil testing. Ms. Daniels asserts that soil sampling would place unnecessary burdens on renovators and have unintended consequences for property owners.

7.7.2 What Interior Clearance Requirements Should Be Established?

Four SERs oppose and five SERs support interior dust clearance sampling requirements. Mr. Corey, Mr. Nolan, and Mr. Olhiser oppose wipe sampling as an interior clearance requirement. Mr. Corey and Mr. Nolan state that wipe testing will be time consuming, cumbersome, and cost prohibitive for small entities. Mr. Nolan asserts that even if waivers are granted, they would provide no reassurance to the contractor that the contractor would not be responsible or liable for cleanup. In addition, he believes that tracking and following up on testing and waivers would be costly and smaller contractors would not be able to keep up with these administrative requirements. Ms. Daniels asserts that there are no health-based standards for dust and no

standards for dust wipes. She also states that if proper work and cleanup procedures are used, as outlined in EPA's renovation and remodeling pamphlet, interior clearance testing is not needed.

Mr. Olhiser supports a visible inspection clearance requirement. He reports that recent studies indicate that contractors can achieve acceptable cleanup levels if they follow a HEPA vacuum and wet mop cleaning protocol. However, he believes that there may be some value in contractors voluntarily offering owners the option of a wipe sample. If wipe sampling is conducted, however, it would not account for pre-existing conditions.

Mr. Baker believes that clearance sampling should be performed on all projects where lead-based paint and/or lead hazards are known or presumed to be present. In addition, Mr. Connor, Ms. Lee, and Mr. Quercetti believe that requiring a series of dust wipes for multi-family properties is a reasonable regulatory approach. They support the Title X Task Force recommendation for clearance testing after certain jobs on a multi-family property that is

> "sufficient to generate a historical basis for understanding (1) the level of lead-containing dust that will be generated by that type of activity and (2) the appropriate technique for reducing any lead-containing dust that is generated to levels below those considered to pose a hazard to health."

Mr. Connor, Ms. Lee, and Mr. Quercetti believe that the industry needs an objective way to evaluate whether a specific job is likely to generate a lead-dust hazard and an objective method for qualitatively evaluating dust clean-up techniques. Under the Task Force recommendation, clearance testing in a multifamily property would be required after every job until a property owner can demonstrate that its cleaning crews for the particular property consistently pass the clearance test. Once this demonstration is made, the owners could rely on clearance tests in a sample of the cleaned units in that property.

These SERs do not believe that this limited exclusion from clearance testing should apply in non-multifamily properties because professionally maintained apartments have the highest chance of developing a dust wipe history to support lead-safe practices. They appear to support requiring interior clearance testing in owner occupied properties for two reasons:

- A renovation in these properties is more likely than a renovation in a multi-family property to be performed with little awareness of the amount of lead dust generated and how to remove it; and

- Despite its cost, clearance testing is the only way to ensure that hazardous levels of dust do not remain following a renovation.

Mr. Connor, Ms. Lee, and Mr. Quercetti do not believe that any data support the effectiveness of an interior visual clearance. Rather, they assert that data from the §403 rulemaking process demonstrates the inadequacy of visible clearance. They believe that a measurement is needed to

determine that washing and vacuuming were performed adequately. They acknowledge that required clearance testing will increase the cost of a job, however, they believe there is no other technique to assure that hazardous levels of lead dust are not left behind.

Mr. Connor, Ms. Lee, Mr. Quercetti and Mr. Nolan state that it is impractical to "close off" a resident's living area for two or three days while waiting for laboratory results. Mr. Connor, Ms. Lee, and Mr Quercetti suggest that this delay represents a significant cost to property owners and should be included in EPA's economic analysis. They also cite a multi-year study of HUD grantees which found that even under abatement conditions where rooms undergoing treatment were sealed off and residents were clearly informed about the dangers of entering such spaces, residents breached the containment areas. Mr. Nolan also said that the delay would be unacceptable to homeowners.

Mr. Sheehan supports interior dust clearance testing. He suggests that, on multi-trade jobs, a general contractor, project manager, or property owner determine who is responsible for clearance. In some cases it may be practical for this contractor to function as the lead supervisor for the entire job.

Mr. Connor, Ms. Lee and Mr. Quercetti also discuss the status of research to evaluate the efficacy of low cost, rapid detection methods for lead or spot testing. They indicate that if such tests found to be reliable, they would reduce the costs associated with interior clearance by eliminating (1) the need to have a testing technician perform the test, (2) lab analysis costs, and (3) the delays from waiting for test results.

7.7.3 Who Should Conduct Clearance Testing?

Mr. Sheehan is concerned that a clearance testing requirement will create a large demand for inspectors. He asserts that the number of inspectors will not increase quickly enough to meet the new demand, which will force contractors into non-compliance. Also, he is concerned that the number of clearance testing technicians will not grow quickly enough to meet the new demand this regulation would create. This growth, he asserts, will be limited because clearance testing has the highest risk of legal liability for inspectors.

Mr. Baker states that only certified lead risk assessors should perform clearance testing, in part because of the investments they have made to get certified. Mr. Baker states that currently there is little lead risk assessment work to do, and therefore certified risk assessors are in need of work. According to Mr. Baker, establishing the discipline of clearance technician would produce less qualified and less competent people to perform the risk assessment work. As for cost of relying on risk assessors, if the clearance sampling market increases, more people will enter the market and drive testing costs down.

7.7.4 Should Baseline Testing Be Required?

Mr. Domas appears to argue that if clearance testing is required, EPA also should require baseline testing to address the potential for existing lead levels. He reports that EPA left out the baseline testing costs from the total estimated costs. He asserts that, because most homeowners are not at home during the day, baseline and clearance testing costs should include the labor costs of at least an hour plus travel costs associated with scheduling and meeting the third party who must take the clearance samples.

7.8. Legal Liability and Insurance Issues

Mr. Olhiser suggests that making the rule cover all pre-1978 housing and requiring firms to be certified will increase the availability of insurance to R&R contractors. He notes that most R&R contractors' insurance does not cover pollution events, primarily because the contractors incorrectly believe that their liability policies already cover these risks. He also states that suitable insurance policies are rare because insurers are not sure what liability risks to cover.

Mr. Baker does not expect that the liability system will be effective in preventing lead poisoning. He states that most R&R contractors have insurance and/or bonding to cover tort liability and non-performance. Those companies have a far greater economic capacity to withstand litigation than do most homeowners. Mr. Baker thinks that most homeowners who have R&R work performed cannot afford the time and legal expenses necessary to sue to recover damages or have the work performed properly. He also adds that, when a contractor becomes involved in litigation, the contractor often moves to another location or declares bankruptcy and then opens a new R&R business under a new name.

Mr. Domas states that this regulation would make him purchase additional, specific hazard insurance to cover exposure for lead-based paint, pollution, and environmental concerns. Such insurance reportedly would have a minimum annual premium of $25,000 plus a rate of up to $80 per $100 of payroll. Also, Mr. Domas states that when he wants to retire or sell his business he would have to purchase cease of operations insurance to protect himself from future lead-based paint and pollution lawsuits that could occur after retiring or having sold his business.

Ms. Daniels stated that the cost estimate for the rule should include lead specific insurance coverage. She reported that the cost of a rider to eliminate the pollution exclusion on a commercial general liability policy would be $500 to $2,000 per year.

7.9 General Comments on the Economic Analysis

Mr. Domas states that the costs to small businesses calculated by the EPA are grossly underestimated. He believes that small businesses will not be able to pass the costs of the rule on to their customers. If costs are passed on, customers will search out illegitimate businesses that do not comply with the rule, resulting in a large loss of customers for legitimate businesses. Mr. Domas also states that the definition of an event, as discussed by EPA in conference calls, needs further study and definition.

Ms. Daniels states that EPA has not included costs associated with travel, lodging, record keeping on each unit renovated, and insurance (see above).

Based on a survey of the maintenance practices of National Apartment Association and National Multi Housing Council (NAA/NMHC) members, Mr. Connor, Ms. Lee, and Mr. Quercetti think that EPA has underestimated the number of workers and events at rental properties that will be covered under the rule. Their estimate of the number of annual events in pre-1978 multi-family properties that disturb more than 2 square feet of paint is many times higher than EPA's estimate of 2.35 renovation events per year for a 15-unit building. They state that EPA underestimates the number of events by not including common areas and exterior repairs. Also, preliminary information from NAA/NMHC members indicates that the proposed rule would cover from 0.5 to 4.0 repairs per unit, per year, which would add 12.85 to 102.8 million annual covered events that need to be considered in estimating the costs of the rule.

Ms. Daniels also questions EPA's estimate of the number of renovation events per year in multifamily housing. She suggests that, instead of using American Housing Survey (AHS) data, EPA should rely on Census Bureau data from the Property Owners and Managers Survey. She notes that the AHS contains no information about renovations in rental units and had errors in the data for renovations in owner-occupied units. While these errors have been correct in a revised data set issued November 29, 1999, estimates relying on the prior data are questionable.

Mr. Connor, Ms. Lee, and Mr. Quercetti also state that EPA has misconstrued data from the AHS and other sources in estimating costs. EPA's assumptions do not match those made in HUD's analysis of similar activities in federally owned and assisted target housing. They request that EPA revise cost estimates that detail the AHS variables and assumptions used.

7.10 General Comments on the R&R Rule

Mr. Olhiser states that if this regulation focuses on educating R&R contractors on how to "contain, cleanup, and stage a project so that inhabitants are not exposed to lead," the instances of lead poisoning will decline without "surreptitiously" increasing liabilities and consequent costs to contractors and consumers. Mr. Nolan states that a reasonable approach to lead hazard reduction would involve training for all contractors and a public awareness campaign to help contractors inform their costumers. If the public understands that lead dust could be harmful, they would use professional painting contractors that use lead safe practices.

Mr. Domas reports that many smaller painting companies do not carry business insurance or comply with state and Federal laws and therefore have a price advantage over legitimate businesses. Mr. Nolan expresses a similar concern. Mr. Domas believes that unless EPA incorporates small businesses concerns into the rule, small businesses will most likely not comply. Mr. Nolan expresses concern that any increase in administrative paperwork resulting from the rule, will be met with strong resistance by small contractors.

Mr. Nolan states that residential repainting can be conducted in a lead-safe manner without drastic new regulations. He believes that the public and contractors do not understand why EPA is concerned about R&R lead risks now, since the ban on lead-based paint was imposed 20 years ago and blood lead levels have been declining since then. He does, however, recognize lead poisoning problems in low-income, inner-city neighborhoods. Mr. Nolan argues that the EPA has not provided evidence linking lead poisoning to painting contract work that is sufficient to justify an onerous regulation. The studies that EPA presented as evidence did not reflect the use of "lead-smart/ lead-safe" practices used by some contractors.

Ms. Daniels reports that the NAHB believes that EPA lacks the scientific record to proceed with a rulemaking to require certification and training for renovators performing work on pre-1978 housing. She notes that the number of children with elevated blood lead levels has been declining. She asserts that a small share of the lead poisoning in the 1970s was caused by lead paint because few lead paint abatements were performed then and claims that the vast majority of elevated blood lead levels in the past stemmed from lead in gasoline and solder on food cans. With respect to the regulatory options presented by the Agency, she supports a limited regulatory approach because it would have lower compliance costs and lower housing costs.

Ms Daniels also states that the statement on page 6 of the "Questions and Answers" document, "the Center for Disease Control in 1998 reported there are 890,000 children with" elevated blood lead levels is misleading. The CDC, she explains, reported that during the survey period of 1991 to 1994, 890,000 children had elevated blood lead levels.

8. PANEL FINDINGS AND DISCUSSION

8.1 Number and Types of Small Entities

For a complete description and estimate of the number and type of small entities to which the proposed rule will likely apply, see Section 4. The following small entities may be directly regulated under this proposal:

- Contractors performing renovation and remodeling activities that generate lead hazards.
- Training Providers providing renovation and remodeling training services.
- Risk Assessors, Inspectors and Sampling Technicians involved in the identification of lead-based paint and clearance testing following renovation and remodeling activities.
- Property Owners and Managers of affected housing stock.

8.2 Potential Reporting, Record Keeping, and Compliance Requirements

As appropriate, regulated entities may be required to demonstrate that they have met applicable training, certification, and work practice standards by complying with reporting and record keeping requirements. Examples of reporting and recordkeeping requirements that EPA may propose include information demonstrating compliance with certification or accreditation requirements.

8.3 Relevance of Other Federal Rules

A discussion of Federal rules related to the Renovation and Remodeling rule is provided in section 2.6 of this report.

8.4 Panel Recommendations and Comments for the Options Considered

The Panel considered a wide range of options and regulatory alternatives for providing small businesses with flexibility in complying with potential Renovation and Remodeling requirements. See section 3: *Options and Approaches for Renovation and Remodeling Regulations* of this report for a detailed discussion of the options. As a part of the process, the Panel requested and received comments from the SERs on regulatory options developed by EPA and several additional ideas for compliance flexibility that were suggested by SERs and Panel members. The Panel's recommendations are based on its consideration of the comments received, as well as additional business and technical information.

8.4.1 Applicability

Under Title IV of the Toxic Substances Control Act (TSCA) the renovation and remodeling proposed rule may apply to individuals and firms conducting renovation in all or certain housing built before 1978. Congress chose the year 1978 because on February 27, 1978 the Consumer Product Safety Commission banned paints, for consumer use, that contain lead in excess of 0.06 percent of weight (16 CFR 1303).

The majority of SERs commented that the regulation should cover all pre-1978 housing in order to lessen confusion and keep the rule consistent with other lead-based paint regulations (see section 2.6).

Several SERs disagreed and suggested that the rule should target the types of pre-1978 properties most likely to contain high concentrations of leaded paint. They believe affected properties could be identified based on the year of construction and Census tract data and that this would be more cost effective than a broader approach, such as regulating all pre-1978 housing.

The Panel received different opinions from the SERs on the applicability options, and discussed the pros and cons of alternatives.

OMB and SBA believe that the protection of public health may be achieved at significantly lower cost by restricting rule requirements to homes built before 1960. Older homes are more likely to have lead-based paint on at least one surface, to have a higher concentration of lead in lead-based paint, and to have a greater surface area coated with lead-based paint. Homes built between 1960 and 1979 contain only 5% of the National total amount of lead-based paint on interior components, according to the "Report on the National Survey of Lead-Based Paint in Housing" (EPA 747-R95-005, April 1995). In those homes, the average surface area coated with lead-based paint is typically less than in older homes. The "Report on the National Survey of Lead-Based Paint in Housing" reports that Pre-1940 homes have, on average, about three times as much lead-based paint as units built between 1960 and 1979 (EPA 747-R95-005, April 1995). Data from the Bureau of Mines indicate that 97% of the total tonnage of lead carbonate used in paint was used prior to 1960 (cited in "Putting the Pieces Together: Controlling Lead Hazards in the Nation's Housing", HUD 1547-LBP). Lastly, even those firms not required to comply with an Renovation and Remodeling rule will have the benefit of EPA guidance on lead safe work practices and will be subject to the requirements of the pre-renovation education rule (40 CFR 745 Subpart E).

EPA believes that restricting the applicability of this rulemaking to pre-1960 housing may not provide adequate protection of public health. EPA understands that the quantity and concentration of lead in paint used after 1960 decreased, however, a large number of these homes have some lead-based paint and even small quantities of such paint can produce hazardous lead contamination. EPA's concerns are further described below:

- 27 million or 76% of homes constructed between 1960 and 1978 contain some lead-based paint. In comparison, of all the homes constructed prior to 1960 just 37 million or 89% contain some lead-based paint. Therefore, 42% of all housing containing some lead-based paint was constructed between 1960 and 1978. (Report of the National Survey of Lead-Based Paint in Housing, 1995)

- To understand how easily leaded dust hazards can be created from jobs disturbing lead-based paint, consider the following example. Suppose renovation work is done on only 1 square foot of painted surface and all the paint inside that square foot is turned into dust by sanding or some other work. If such paint contained 1 mg/cm^2 of lead (minimum quantity of lead to be considered lead-based paint) and if the resultant dust is spread homogeneously it could contaminate over 9,000 ft^2 of flooring even at EPA's existing lead hazard guidance of $100ug/ft^2$.

Additionally, despite the availability of educational materials EPA is still concerned that should housing constructed between 1960 and 1978 be excluded that owners and occupants of such housing may deduce, incorrectly, that their dwelling is free of lead-based paint and associated lead hazards.

The Panel recommends 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. Also, the Panel recommends that EPA solicit comments on the pre-1978 option as well as other options that may help to reduce costs while achieving the protection of public health.

8.4.1.1 Exemptions to Applicability of the Rule

The SERs discussed two exemptions: (1) a deminimis exemption for activities that disturb less than two square feet of lead based paint; and (2) an exemption for emergency renovations. For the deminimis exemption one SER asserts that:

- A deminimis exemption is most important to specialty contractors, since the bulk of their work does not disturb areas greater than two square feet;
- A per component deminimis exemption has the advantage of being easy to apply consistently. A per room or area deminimis exemption is more protective than two square feet.

One SER believes that HUD's definitions establishing deminimis levels of 20 square feet on exterior surfaces, 2 square feet in interior rooms, and 10 percent of a building component with a small surface area are "clear, distinct and protective."

For the exemption for emergency renovations, one SER believes that only the activities addressing the source of the emergency should be exempt, and that any subsequent work should comply with this regulation. Another SER believes that clearance sampling should be conducted after completion of activities performed under either an emergency or a deminimis exemption.

OMB and SBA also recommend that EPA provide additional exemptions for firms who routinely disturb small amounts of lead paint or do not create lead hazards. They recommend that EPA apply the regulation to firms that regularly perform painting, construction or renovation work (i.e. general contractors, builders, remodelers, and painters) and exempt specialty contractors (i.e. plumbers and electricians) in the proposal. Under this proposed option, these specialty contractors would still be expected to follow lead-safe practices as outlined in HUD and EPA guidance, but would not be subject to certification, training and other regulatory requirements.

The Panel recommends that EPA include a "deminimis" exemption and an exemption for emergency renovations in the proposal.

8.4.2 Certification of Firms

The proposed regulation may require a firm to be certified by EPA or an authorized state or tribal government when performing renovation and remodeling activities on applicable housing. Firm certification will likely require, as part of the application; 1) a statement that the firm will

employ appropriately trained and/or certified individuals and follow applicable work practice standards, and 2) payment of a fee as required by statute to recover EPA's administrative and enforcement costs.

The majority of SERs support mandatory firm certification and none opposed this option. SER comments include the following: 1) as a condition of certification firms should certify that they will use appropriately trained individuals to conduct the work and will follow all applicable work practice standards, and 2) broad applicability of the certification requirements will help improve standard industry practices regarding lead-based paint.

The Panel believes that certification of renovation and remodeling firms would help consumers identify qualified firms. The Panel recommends that EPA attempt to balance the goals and objectives of the statute, with the burden associated with such regulatory requirements, in order to avoid placing compliant firms at an undue competitive disadvantage. The Panel recommends that EPA include firm certification in the proposal.

8.4.3 Training and Certification of Individuals

EPA may propose to require all or some individuals engaged in regulated renovation and remodeling activities to complete a training course and possibly become certified by EPA or an authorized state. The training may be obtained through an accredited training provider (formal training) or possibly by the employer. Certification requirements may include successfully completing training in the appropriate discipline and submitting a formal application. Re-certification may also be required to keep abreast of the most current technologies and practices.

All SERs commenting on this issue supported no certification requirements or certification of supervisors only. Several SERs oppose any required certification and state that certification will:

- Impose a high financial burden on small businesses;
- Result in higher fees and more administrative record-keeping;
- Prevent small businesses from working across state lines due to differing state regulations;
- Restrict access to, or the availability of knowledgeable lead-safe workers; and
- Significantly increase the cost of conducting routine work and renovations.

Regarding training, the majority of SERs support training of renovation and remodeling workers. However, four SERs believe that this training should only be mandatory for supervisors for the following reasons:

- Trained supervisor can instruct his or her employees on lead-safe practices.
- Formal training of all workers is cost prohibitive.
- Because risk management decisions are usually centralized, only the supervisor needs to be trained and certified.

In addition, two of the SERs advocating supervisor training believe that a trained supervisor should be on-site at all times to ensure compliance and that if a trained supervisor is not on-site, for example when one person can perform a job, the worker performing unsupervised work should have the supervisor training.

The Panel believes that training Renovation and Remodeling workers improves lead safe work practices. However, the Panel understands that the rate of worker turnover in the industry is high and firms would probably incur greater training and certification costs. The option of limiting formal training requirements to a job supervisor (or other clearly defined responsible party) provides a less burdensome alternative. The Panel recommends that EPA include formal training for supervisors (or other clearly defined competent person) and informal training for all others in the proposal.

8.4.4 Accreditation of Training Providers

EPA may propose to require entities that train renovation and remodeling workers to obtain accreditation from EPA or an authorized state. Accreditation for a training program may involve review and approval of the following; training materials, instructor and student manuals, course agenda; a description of the facilities and equipment to be used; a description of the activities and procedures that will be used for conducting the assessment of hands-on skills for each course and a quality control plan. Some of the requirements for the accreditation of training programs may involve training managers with experience to conduct courses that provide hands-on training and to implement a quality control plan. To become accredited and offer lead-based paint course instruction training programs may need to ensure that their courses include specific topics and have a minimum amount of training hour requirements.

The SERs support requirements for the accreditation of training providers. No SERs opposed accreditation. The SERs note the following:

- Accreditation establishes accountability regarding training and post-session record-keeping for certification purposes.
- Accreditation is necessary to ensure consistency across different training programs.
- Accreditation is the only way to ensure the delivery of a prescribed curriculum.
- Trade associations should become involved in the accreditation process by encouraging their members to become accredited training providers.

The Panel believes that accreditation provides a mechanism to ensure quality control of training programs, to establish a level of essential training, and to facilitate reciprocity between states. The Panel is also concerned about imposing undue burden on training providers. The Panel recommends that EPA include accreditation of training providers in the proposal.

8.4.5 Work Practice Standards

Current EPA regulations for lead-based paint abatement activities contain specific prescriptive work practice standards that take into account reliability, effectiveness, and safety. EPA could propose to establish prescriptive work practice standards or performance based standards for renovation and remodeling activities. A prescriptive regulation would require contractors to follow specific detailed procedures, whereas, a performance based regulation would establish standards which would allow contractors to choose cost effective techniques to accomplish such standards.

The majority of SERs support performance based standards. The proponents of performance based standards make the following arguments:

- Unless EPA underwrites the increased costs, prescriptive work practices will not work because contractors will choose lower cost methods than may be prescribed. These cost differences could be substantial depending on work preformed.
- Prescriptive work practice standards do not consider the reliability, effectiveness, and safety for the entire regulated community but instead, are designed to ensure that low-skilled workers can work without exceeding permissible lead-exposure levels defined by OSHA.
- Knowledgeable contractors are already providing clean environments for their clients and a prescriptive approach would make such contractors less competitive.
- Performance based standards will encourage innovation in equipment and procedures.

The SER opposed to performance based standards supports prescriptive standards which are flexible enough to allow the use of the practices best suited to each situation, but descriptive enough to ensure that proper and adequate work practices are used.

The Panel recognizes that a prescriptive approach may clearly identify methodologies to minimize lead hazards. However, prescriptive practices may not work effectively in some situations a contractor may face. The Panel believes that a performance based approach would provide the contractor with greater flexibility to manage risk in a cost effective manner while minimizing the introduction of lead hazards given a particular situation. Therefore, the Panel recommends that EPA include performance based standards in the proposal.

8.4.6 Prohibited Practices

EPA may propose to prohibit certain work practices as recommended in HUD's 1995 publication titled "Guidelines for the Evaluation and Control of Lead-based Paint Hazards in Housing" because they may produce high levels of lead dust, which could be difficult, if not impossible to clean up.

Some SERs are opposed to prohibiting any practices while others support some prohibitions. SERs opposed to the prohibition of work practices state the following:

- These practices are commonly used during renovation work and prohibiting such practices could make certain jobs, such as preparing a surface for new painting, extremely difficult, if not impossible.
- Prohibitions would be a less cost effective than instituting performance based work standards.
- There may be no practical way to restore old and historic millwork other than open flame burning.
- Prohibiting dry scraping and sanding would cause many problems since wet sanding tends to raise the grain of wood surfaces preventing a smooth surface which consumers demand.
- Workers who are properly trained to use methods that are currently prohibited can complete projects in a safe, cost-effective manner.
- Work practices should not be prohibited as long as contractors can meet containment, exposure, and clearance requirements.

SERs supporting prohibited practices feel that contractors using such practices would not use appropriate engineering controls and cleanup procedures because of the increased cost and time involved with these efforts. Several SERs are concerned that these practices can release significant levels of lead. Also, several SERs are concerned about any differences between EPA's prohibitions for R&R activities and HUD's prohibitions for lead hazard control activities in federally-assisted housing for the following reasons:

- If EPA's standards are less stringent than HUD's standards, multifamily property owners and managers would have an unfair burden to ensure that their contractors follow HUD's more stringent standards.
- Different EPA and HUD prohibited practices would be confusing to small businesses.
- The prohibitions should not differ because they should be based on the same sound, scientific data since the health risks of R&R are not affected by whether housing is federally-assisted.
- Title X requires consistency between EPA and HUD.

The SER's commented that such prohibitions may increase cost, decrease quality, and impede cleanup efforts. Such prohibitions may also cause homeowners and building owners to seek contractors willing to avoid compliance with such prohibitions. These contractors would likely avoid compliance with other lead safe work practices as well leading to a reduction in public health, rather than an increase. SBA and OMB recommend that EPA not prohibit work practices, relying instead on the effectiveness of containment and cleanup work practice requirements.

The Panel recognizes concerns over the feasibility of prohibiting or severely restricting common renovation practices when cost-effective alternatives may not exist. The Panel recognizes that prohibiting such practices could adversely affect the cost and quality of

renovations. However, the Panel is also concerned about the potential risks associated with the release of significant amounts of lead contaminated dust that may be associated with such activities.

The Panel notes that proper training, in combination with reasonable performance, containment and cleanup requirements may adequately address the introduction of new hazards. The Panel recommends that EPA request public comment on the prohibition of work practices and seek comment regarding the cost, benefit and feasibility of such prohibitions.

8.4.7 Exterior Clearance

EPA could propose to require an exterior clearance following exterior renovation and remodeling. This clearance could include a visual inspection or soil testing for lead contamination. A visual inspection would evaluate whether visible amounts of dust and debris remain on exterior horizontal surfaces and if visible paint chips remain on the ground below the work area. Exterior renovation, remodeling, and repainting tasks can create lead-contaminated debris (e.g., paint chips) and lead-contaminated dust levels in soil that are equivalent to those produced during lead-based paint abatement. EPA regulations applicable to exterior lead abatement work call for a visual inspection (40 CFR 745.227 (e)(8)(v)(c)) and do not require soil lead testing.

Four SERs state that visual inspection should be sufficient for exterior clearance and one SER opposed any exterior clearance requirement. Some of the reasons to support a visual inspection were:

- additional requirements would be unnecessary and unduly expensive, or
- a visible inspection standard will allow contractors and property owners to use their best judgment, or
- soil levels taken post-renovation may reflect high pre-renovation lead levels, and not lead contributed by the renovation work.

One SER believes that visual inspection is appropriate only if conducted by a certified risk assessor who issues a clearance certification and if the clearance standard is similar to “there shall be no visible dust or debris.”

In contrast, one SER opposes any exterior clearance indicating that the rule should focus on controlling the areas where lead can enter the home, such as by sealing doors and windows, keeping them closed, and performing daily cleaning. Two SERs oppose soil or wipe sampling for exterior clearance because of the increased costs associated with a risk assessor or inspector would have to be employed or because it will not provide helpful information about a recently completed job, in part because of the wide range of potential sampling error.

The Panel recognizes the potential costs associated with exterior soil sampling and the difficulty a contractor may have in achieving clearance due to existing soil lead contamination from the deterioration of lead-based paint, deposition resulting from industrial sources, and leaded gasoline. Also, the Panel does recognize that other Federal regulations (ie. the lead-based paint abatement regulation at 40 CFR 745 subpart L) only require visual clearance following abatement and that consistency with such regulation will be an important factor for consideration. The Panel recommends that EPA include in the proposal a visual inspection provision for exterior clearance.

8.4.8 Interior Clearance

EPA may propose to require an interior visual inspection and/or dust clearance testing following renovation and remodeling activities because this work often creates lead-contaminated dust levels in excess of established hazard criteria.

Three SERs oppose and five SERs support interior dust clearance sampling requirements. SERs that oppose dust sampling requirements stated that:

- Wipe testing will be time consuming, cumbersome, and cost prohibitive for small entities;
- Even if waivers are granted, they would provide no liability protection for the contractor. Also, such waivers would be costly and involve administrative requirements; and
- It is impractical to prevent re-occupancy for two or three days while waiting for laboratory results,
- It is sometimes difficult to achieve the clearance levels in practice, particularly if the level is as low as 50 ug/ft^2, the EPA proposed level for the §403 rule.

One SER supports a visible inspection clearance requirement because of recent studies indicating that contractors can achieve acceptable cleanup levels if they follow a HEPA vacuum and wet mop cleaning protocol. However, the SER also believes that there may be some value in contractors voluntarily offering owners the option of a wipe sample.

Five SERs support clearance sampling testing. The following are some of their comments:

- Requiring a series of dust wipes for multi-family properties is a reasonable regulatory approach;
- The industry needs an objective way to evaluate whether a specific job is likely to generate a lead-dust hazard and an objective method for qualitatively evaluating dust clean-up techniques;
- No data supports the effectiveness of an interior visual clearance; and
- If wipe sampling is conducted it would not account for pre-existing conditions.

The SERs raised the issue of responsibility for clearance testing during projects involving multiple trades and contractors. A SER in response notes that during such jobs a general contractor, project manager, or property owner would determine who is responsible for clearance.

The Panel recognizes that the issue of interior clearance has raised many concerns related to the type of clearance (visual or dust testing). These concerns include: the time and expense involved, who would be responsible to conduct clearance, and accounting for existing lead contaminated dust. Recent studies provide some evidence that low clearance levels (e.g. 50 ug/ft^2) can be achieved following a thorough and professional clean-up, however, there is contrary evidence in other studies that speak to the difficulty in achieving floor clearance levels as high as 200 ug/ft^2.

The Panel understands that dust clearance testing is the best method currently available to quantify the presence of a lead dust hazard and that visual examination alone may not be adequate to determine the presence of such a hazard. A study being conducted in the State of Maryland to evaluate the effectiveness of visual clearance supports this latter conclusion. Preliminary study results of dust lead samples taken following visual clearance of work areas in which lead risk reduction activities were conducted indicate that the majority of dust lead levels are greater than EPA dust hazard guidance.

SBA is concerned about the cost and feasibility of consistently achieving low interior clearance requirements based on currently available field evidence. SBA introduced a new option to the Panel which would include a specific cleanup methodology followed by a visual clearance requirement as a alternative to dust clearance testing. The Panel recommends that EPA include this new option in the proposal and take comment on the merits of all the interior clearance options in the proposal. The Panel also recommends that EPA take comment on options for clearance that are less costly and less burdensome and yet still demonstrate the absence of lead hazards.

8.5 Additional Issues

The SER written comments also included issues related to economics and the development of the cost estimates. Several of the comments echoed the earlier comments received during the outreach efforts. EPA had previously responded to these comments and made changes to the estimates. SERs representing multifamily property owners and managers questioned the impact estimates for those entities. The estimates presented in this report reflect some of the revisions of the impacts on multifamily property owners. The National Association of Home Builders also noted that the Census Bureau issued a revision of the American Housing Survey (AHS 1997) in late November of 1999. EPA confirmed that the data had been revised, but was not able to include the November 1999 revision of the AHS data into the estimates presented in this document. Though initial EPA calculations do not suggest that the November 1999 AHS data revisions were substantial, the revised data will be incorporated into future economic analysis of the R&R rule.

The Panel recommends that EPA continue to refine the impact analysis of the proposal, utilizing comments from affected industry and other parties related to costs and other issues. Additionally, with regard to the EPA study titled: "Lead Exposure Associated with Renovation and Remodeling Activities: Phase III" (EPA 747-R-99-002), the Panel recommends that EPA do further analysis of the existing Phase III data to analyze the impact of R&R activities by contractors, and building owners (those persons who would be subject to this regulation).

Although this Panel was convened for the proposed R&R rule, the Panel also discussed the section 403 hazard standard because it includes standards for clearance following post-abatement dust clean-up which may be used to determine adequate clean-up in the R&R rule now being developed. The section 403 lead hazard standards rule is a separate rule that was proposed in June 1998, and is currently under final development by EPA. During the public comment period on the proposed hazard standards, the Agency received nearly 500 comments, several of which suggested alternative analytical approaches. As with all rules, EPA is assessing every comment received on the proposed hazard standards, and, after considering all viewpoints, will issue the final hazard standards before the end of 2000. As suggested in comments submitted on the 403 proposal, OMB and SBA recommend that EPA reassess the IEUBK and Empirical Models, evaluating each model's predicted distribution of blood lead levels against distributions observed in the Rochester study, the pooled analysis by Lanphear et al. and NHANES III, and make appropriate adjustments to improve the ability of the models to predict the number of children with elevated blood lead.

APPENDIX A:

STAKEHOLDER OUTREACH MEETING SUMMARIES

(December 1998 and March 1999)

APPENDIX B:

SUMMARY OF SECTION 1012/1013 REQUIREMENTS

APPENDIX C:

SER OUTREACH MATERIAL

APPENDIX D:

SUMMARIES OF PRE-PANEL OUTREACH MEETINGS

(September 22 & 23, 1999)

APPENDIX E:

SER's WRITTEN COMMENTS