WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #3

Do Not Mark In This Box

FILED

JUL 30 2 13 PM '98

OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

NOTICE OF AGENCY APPROVAL OF A PROPOSED RULE
AND
FILING WITH THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

Division of Health
AGENCY: Department of Health and Human Resources TITLE NUMBER: 64

CITE AUTHORITY W. Va. Code §§16-35-4 and 16-1-7

AMENDMENT TO AN EXISTING RULE: YES _____ NO X

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: 45

TITLE OF RULE BEING PROPOSED: Lead Abatement Licensing

THE ABOVE PROPOSED LEGISLATIVE RULE HAVING GONE TO A PUBLIC HEARING OR A PUBLIC COMMENT PERIOD IS HEREBY APPROVED BY THE PROMULGATING AGENCY FOR FILING WITH THE SECRETARY OF STATE AND THE LEGISLATIVE RULE MAKING REVIEW COMMITTEE FOR THEIR REVIEW.

Joan E. Ohl

Joan E. Ohl, Secretary

$8.20 (w/out fed. reg.)
$18.10 (w/fed. reg.)

QUESTIONNAIRE

(Please include a copy of this form with each filing of your rule: Notice of Public Hearing or Comment Period, Proposed Rule, and if needed, Emergency and Modified Rule.)

DATE: July 27, 1998

TO: LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

FROM: (Agency name, Address & Phone No.) Division of Health
Department of Health and Human Resources
State Capitol Complex, Building 3, Room 265, Charleston, WV 25305
Telephone: (304) 558-3223

LEGISLATIVE RULE TITLE: Lead Abatement Licensing

1. Authorizing statute(s) citation: WV Code Section §§ 16-35-4 & 16-1-7

2. a. Date filed in State Register with Notice of Hearing or Public Comment Period:

June 15, 1998

b. What other notice, including advertising, did you give of the hearing?

The West Virginia Division of Health published legal advertisements in several state newspapers announcing the public comment period for the proposed rule.

c. Date of Public Hearing(s) or Public Comment Period ended:

July 16, 1998

d. Attach list of persons who appeared at hearing, comments received, amendments, reasons for amendments.

Attached Yes ___ No comments received _____

e. Date you filed in State Register the agency approved proposed Legislative Rule following public hearing (be exact):

7/30/98

f. **Name, title, address and phone/fax/e-mail numbers** of agency person(s) to receive all written correspondence regarding this rule (please type):

Marsha Dadisman, Acting Director

Regulatory Development/Department of Health and Human Resources

Room 265, Capitol Complex

Charleston, West Virginia 25305

(304) 558-3223 FAX: (304) 558-1130 MDadisman@WVDHHR.ORG

g. **IF DIFFERENT FROM ITEM 'f'**, please give Name, title, address and phone number(s) of agency person(s) who wrote and/or has responsibility for the contents of this rule (please type):

Randy C. Curtis, P.E., Director

Radiation, Toxics & Indoor Air Division

Office of Environmental Health, Bureau for Public Health

815 Quarrier St. Suite 418

Charleston, WV 25301-3013 Phone:558-3210

3. If the statute under which you promulgated the submitted rules requires certain findings and determinations to be made as a condition precedent to their promulgation:

a. Give the date upon which you filed in the State Register a notice of the time and place a hearing for the taking of evidence and a general description of the issues to be decided.

N/A

b. Date of hearing or comment period:

N/A

c. On what date did you file in the State Register the findings and determinations required together with the reasons therefore?

N/A

d. Attach findings and determinations and reasons:

Attached N/A

BRIEF SUMMARY OF THE RULE

LEAD ABATEMENT LICENSING PROPOSED RULE

SUMMARY: This proposed new legislative rule, Lead Abatement Licensing, proposes the establishment of standards and procedures for the certification and licensing of lead abatement professionals and for the regulation of lead abatement projects. Certification and licensing of lead abatement professionals was mandated by federal legislation and regulation, 40 CFR 745. Lead; Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities: Final Rule. The rule contains the following sections: general; application and enforcement; definitions; initial and renewal license; licensed lead abatement contractor duties; lead inspector duties; lead abatement designer duties; lead risk assessor duties; prohibited lead abatement project methods; recommended lead abatement project methods; lead abatement project clearance levels and minimum sampling; exemptions from notification and licensing; accreditation of lead abatement training courses; applicable federal standards; penalties; administrative due process; and severability.

West Virginia Code Chapter 16, Article 35, requires lead abatement professionals conducting lead abatement in child-occupied buildings and target housing to be properly trained by an accredited training provider, certified by a state accredited examiner and licensed by the Division of Health. The licensing categories consist of lead abatement contractor, worker, supervisor, inspector, risk assessor and project designer.

Lead abatement projects are restricted to target housings (pre-1978) or residences that have known lead hazards as well as facilities regularly occupied by children under six (6) years of age. Notification of abatement projects and elevated blood lead levels are required. Home owners conducting lead abatement on their own premises are exempt from notification and licensing requirements.

The Division of Health will administer and enforce the rules which include: issuing licenses; assessing fees and fines; approving training providers; approving third party examiners; and ordering reduction or abatement of lead hazards.

For further information contact: Randy C. Curtis, P.E., Director of Radiation, Toxics and Indoor Air Division, 815 Quarrier Street, Suite 418, Charleston, West Virginia 25301, telephone (304) 558-2981; fax (304) 558-1289 or the Office of Regulatory Development, Department of Health and Human Resources, State Capitol Complex, Building 3, Room 265, Charleston, West Virginia, 25305, telephone number (304) 558-3223.

STATEMENT OF CIRCUMSTANCES WHICH REQUIRE THE PROPSED RULE

LEAD ABATEMENT LICENSING PROPOSED RULE

The 1998 Legislature passed House Bill 4034 which allows the state to certify and license lead abatement professionals and to regulate lead abatement projects. This passage was in response to a federal mandate, 40 CFR, Part 745, which required the certification of all lead abatement professionals no later than August 31, 1998.

Lead-based paint poisoning is today's foremost preventable disease among young children. It is estimated that one (1) out of every eleven (11) children nationwide have elevated blood lead levels which can lead to disorders of the nervous system, impaired growth, learning disabilities, hyperactivity and renal system problems. The Division of Health received approximately seventy (70) referrals of childhood blood lead poisoning cases in the past year. The proposed rule will enable the Division to assure that all persons disturbing lead-based paint are properly trained with regard to acceptable abatement methods.

TITLE 64
WEST VIRGINIA LEGISLATIVE RULES
DIVISION OF HEALTH
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

SERIES 45
LEAD ABATEMENT LICENSING RULE

NOTICE OF AGENCY APPROVAL OF A PROPOSED RULE
AND
FILING WITH THE LEGISLATIVE RULE-MAKING REVIEW COMMITTEE

TITLE 64
WEST VIRGINIA LEGISLATIVE RULES
DIVISION OF HEALTH
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

SERIES 45
LEAD ABATEMENT LICENSING RULE

TABLE OF CONTENTS

TITLE 64
WEST VIRGINIA LEGISLATIVE RULES
DIVISION OF HEALTH
DEPARTMENT OF HEALTH AND HUMAN RESOURCES

SERIES 45
LEAD ABATEMENT LICENSING RULE

§64-45-1. General.

1.1. Scope-This legislative rule establishes procedures and standards for the licensure and training of persons who engage in activities related to lead abatement and for the operation of lead abatement projects.

1.2. Authority - WV Code §§16-35-4 and 16-1-7.

1.3. Filing Date -

1.4. Effective Date -

§64-45-2. Application and Enforcement.

2.1. Applications. - This rule applies to persons who conduct lead abatement projects in target housing or child-occupied facilities, and requires licensure of lead contractors, inspectors, risk assessors, workers, supervisors, and designers.

2.2. Enforcement. - This rule shall be enforced by the director of the West Virginia division of health.

§64-45-3. Definitions.

3.1. Abatement. - Any measure or set of measures designed to permanently eliminate lead-based paint hazards. Abatement includes, but is not limited to:

3.1.a. The removal of lead-based paint and lead-contaminated dust, the permanent containment or encapsulation of lead-based paint, the replacement of lead-painted surfaces or fixtures, and the removal or covering of lead-contaminated soil;

3.1.b. All preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures;

3.1.c. Projects for which there is a written contract to permanently eliminate lead-based paint hazards from a dwelling unit or child-occupied building;

3.1.d. Projects involving the permanent elimination of lead-based paint or lead contaminated soil;

3.1.e. Projects involving the permanent elimination of lead-based paint hazards or lead contaminated soil that are conducted by persons who advertise or hold themselves out to conduct lead related activities; and

3.1.f. Projects involving the permanent elimination of lead-based paint hazards that are conducted in response to federal, state or local abatement orders.

3.2. Child-occupied building. - Any structure built before one thousand nine hundred seventy-eight (1978), public or private building, or portions thereof, or a room in a residential dwelling or unit, any of which are visited three hours a day twice a week or more often by a child age six or under, including, but not limited to, day care centers, kindergarten classrooms, schools, camps and recreational facilities.

3.3. Director. - The director of the West Virginia division of health or his or her representative.

3.4. Discipline. - Any one of the following: lead abatement contractor, lead abatement supervisor, lead inspector, lead risk assessor, lead abatement worker, or lead abatement project designer.

3.5. Elevated blood level. - A concentration of lead in the blood stream as defined by the United States center for disease control.

3.6. EPA. - The United States environmental protection agency.

3.7. HEPA. - High efficiency particulate air.

3.8. Industrial facility. - Any factory, mill, plant, refinery, warehouse, building or complex of buildings or other industrial structure, including the land on which it is located.

3.9. Inspection. - A surface by surface investigation to determine the presence of lead-based paint or lead hazards and the provision of a report explaining the results of the investigation.

3.10. Interim controls. - A set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards, including specialized cleaning, repairs, maintenance,

painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs.

3.11. Lead. - Elemental lead and all inorganic and organic lead compounds.

3.12. Lead abatement contractor. - A person engaged by oral or written contract to perform a lead abatement project.

3.13. Lead abatement designer. - An individual who designs lead abatement projects.

3.14. Lead abatement project. - An activity in target housing or child occupied buildings involving the permanent removal or encapsulation of lead based-paint, lead-containing dust, lead containing soil or other lead containing materials and decontamination of an area, but does not include interim controls which do not permanently eliminate lead hazards.

3.15. Lead abatement worker. - An individual who is employed by a lead abatement contractor for a lead abatement project.

3.16. Lead-based paint. - Paint or other surfacing coatings that contain lead at or in excess of five thousand (5000) parts per million, or one half of one percent (0.5%) by weight.

3.17. Lead-contaminated dust. - Surface dust containing lead at or in excess of one hundred (100) micrograms per square foot for floors, at or in excess of five hundred (500) micrograms per square foot for interior window sills, at or in excess of eight hundred (800) micrograms per square foot for window troughs and exterior concrete or other rough surfaces.

3.18. Lead-contaminated soil. - Soil containing lead at or in excess of two thousand (2000) parts per million, or four hundred (400) parts per million for bare, high-contact play areas.

3.19. Lead-contaminated waste. - Any discarded materials with lead toxicity equal to or in excess of five (5) parts per million as determined by the total characteristic leachate procedure (TCLP).

3.20. Lead hazard. - Any condition that may result in exposure to lead, including but not limited to lead-contaminated dust, lead-contaminated soil, or lead-based paint present on accessible surfaces, friction surfaces, impact surfaces or other lead sources that could result in adverse effect on human health.

3.21. Lead inspector. - An individual who conducts inspections to determine and report the existence, nature, severity and location of lead-based paint or lead hazards.

3.22. Lead risk assessment. - An investigation of the potential risk to human health or the environment posed by lead abatement projects or lead hazards, including but not limited to considerations of toxicity, concentration, form, mobility and potential of exposure.

3.23. Lead risk assessor. - An individual who is responsible for or conducts lead risk assessments and establishes priories for lead abatement projects.

3.24 Lead supervisor. - A person employed by a lead abatement contractor to supervise workers on a lead abatement project.

3.25. License. - A document authorizing an individual to perform specific lead abatement activities.

3.26. OSHA. - The United States occupational safety and health administration.

3.27. Owner-occupied housing. - A detached single unit residence owned by the individual living within the unit.

3.28. Person. - An individual, partnership, firm, society, association, trust, corporation, other business entity or any agency, unit, or instrumentality of federal, state or local government.

3.29. Public building. - Any building that is generally open to the public, including but not limited to museums, airport terminals, hospitals, stores, restaurants, convention centers and other office buildings, corporate facilities and government buildings that do not expressly prohibit access to the public.

3.30. Target housing. - Residential structures built prior to one thousand nine hundred seventy-eight (1978) that could contain lead-based paint or residential structures that are confirmed by inspection to contain lead-based paint.

§64-45-4. Initial and Renewal License.

4.1. Initial license.

4.1.a. Applicants for licensure as a lead inspector, risk assessor, worker, supervisor, designer or contractor shall submit to the director a current application which shall include:

4.1.a.1. Proof of passage of an applicable state accredited lead training course. A copy of the certificate indicating the date on which training was completed, the location at which training was conducted, the signature of the instructor, and examination score is required;

4.1.a.2. Proof of passage of an examination from a State accredited discipline examiner for the license discipline. A copy of the examination certificate indicating the applicant's name, the date on which the examination took place, the location of the examination, the license discipline and the score of the examination is required;

4.1.a.3. The applicant's date of birth, social security number, current address, driver's license number and telephone phone number. Applicants shall be at least eighteen (18) years of age;

4.1.a.4. The signature of applicant;

4.1.a.5. A history of all environmental enforcement actions taken against the applicant by any federal or state agency or court;

4.1.a.6. Attachment of all applicable license fees. A schedule of fees is shown in Table A at the end of this rule;

4.1.a.7. Evidence that an applicant for a lead supervisor license has one year experience as a lead abatement worker, or at least two years of experience in a related field, such as lead, asbestos, or environmental remediation work, or the building trades;

4.1.a.8. Evidence that an applicant for a lead risk assessors license possesses a valid lead inspector's license and a bachelor degree and one year of experience in a related field, such as lead, asbestos, environmental remediation work or construction; or an associate degree and two-year experience in a related field such as lead, asbestos, environmental remediation work or construction; or certification as an industrial hygienist, professional engineer, registered architect, registered sanitarian, or certification in a related engineering/health/environmental field, such as safety professional, environmental scientist; or a high-school diploma or equivalent, and at least three years of experience in a related field, such as lead, asbestos, environmental remediation work or construction;

4.1.a.9. Evidence that an applicant for a project designer license has successfully completed an approved training course for lead project designers and supervisors, possesses a bachelor's degree in engineering, architecture, or a related profession, and one year experience in building construction and design or a related field; or four years experience in building construction and design or a related field; and

4.1.a.10. Evidence that an applicant for a contractor license has a licensed supervisor on staff.

4.1.b. Applicants and their employers or agents shall demonstrate to the

satisfaction of the director that the applicant is familiar with and capable of complying fully with all applicable requirements, procedures and standards of the EPA, OSHA and of the State agencies of health, natural resources, commerce, labor, air pollution control and environmental protection covering any part of a lead abatement project. Passing an applicable state accredited training course and passage of an examination from a discipline examiner shall be accepted as meeting this requirement.

4.1.c. The director may deny a license and retain the license fee if the applicant fails to satisfy application requirements. A written notice of denial and an opportunity for reapplication shall be afforded to all applicants. Incomplete applications shall be returned to the applicant for completion and the fee refunded.

4.1.d. Licenses issued under these rules shall expire one year from the last day of the month in which they were issued.

4.2. Renewal application.

4.2.a. Prior to the expiration date shown on the license, each licensee who desires to retain a valid license shall submit a renewal application, appropriate refresher course certification, and all applicable fees. Licensees should apply for renewal no less than (10) ten days prior to the expiration of the license to avoid a temporary lapse of license. A schedule of license fees is shown in Table A at the end of this rule.

4.2.c. Applicants shall submit proof of passage of an applicable State accredited refresher course every third year from the date of the original training and certification.

§64-45-5. Licensed Lead Abatement Contractor Duties.

5.1. A licensed lead abatement contractor shall:

5.1.a. Ensure that each contractors' employees or agents who will come into contact with lead or who will be responsible for a lead abatement project is properly licensed;

5.1.b. Ensure that each lead abatement project is supervised by an on-site licensed lead supervisor;

5.1.c. Notify the division and all other entities as may be required by state or federal law at least ten (10) days prior to the commencement of each lead abatement project. Notification to the division shall be by certified mail or by hand-delivery to the division;

5.1.d. Ensure that a lead abatement project is designed by a licensed lead

abatement designer;

5.1.e. Ensure that each lead abatement project meets the minimum clearance standards as defined in this rule;

5.1.f. Ensure proper disposal of lead contaminated waste in accordance with applicable federal, state, and local laws, rules and regulations;

5.1.g. Keep a record of each lead abatement project. The records shall include:

5.1.g.1. The name, address and lead abatement license number of the individual who supervised the lead abatement project and of each employee or agent who worked on the project;

5.1.g.2. The location and a description of the lead abatement project and the amount of lead material that was removed;

5.1.g.3. The starting and completion dates of each lead abatement project and a summary of the procedures that were used to comply with all federal and state standards;

5.1.g.4. The name and address of each disposal site where waste containing lead was deposited and the disposal site receipts. Contractors shall use disposal sites which are in conformance with applicable federal, state and local laws and regulations; and

5.1.g.5. The clearance sample results or air monitoring results required by this rule for each lead abatement project. The records shall include:

5.1.g.5.A. The name and signature of the lead inspector who collected the clearance samples;

5.1.g.5.B. Where the samples were collected;

5.1.g.5.C. The date of collection;

5.1.g.5.D. The name and address of all laboratories analyzing the samples;

5.1.g.5.E. The date of analysis;

5.1.g.5.F. The results of analysis;

5.1.g.5.G. The method of analysis;

5.1.g.5.H. The name and signature of the person performing the analysis; and

5.1.g.5.I. Certification that the laboratory is EPA certified to analyze lead samples.

5.2. The records required by Section 5 of this rule shall be available to the state agencies of health, natural resources, environmental protection, labor and air pollution control upon request during normal business hours. Records for current projects shall be immediately available. For completed projects, the director may afford the contractor a reasonable time to comply with the requests, depending upon the length of time since the project's completion and whether or not the advance notice might adversely affect an investigation being conducted by any of the agencies. Records required by Section 5 of this rule shall be kept for at least three (3) years

§64-45-6. Lead Inspector Duties.

6.1. A licensed lead inspector shall:

6.1.a. Thoroughly inspect interior and exterior surfaces suspected of containing lead that may be affected by renovation or demolition, and sample the materials for lead content or confirm lead content with an X-ray fluorescence device (XRF).

6.1.b. Generate a written report that at a minimum:

6.1.b.1. Identifies by narrative any sampling location where the presence of lead containing material has been confirmed;

6.1.b.2. Details the location and amount of all materials that contain lead;

6.1.b.3. Lists analysis, XRF results, or both for all samples; and

6.1.b.4. Includes drawings and narrative descriptions of locations of samples and/or XRF readings.

6.1.c. Adequately sample each area or room of an abatement project for clearance to verify that dust, soil and waste material lead levels are below the contamination standards as defined in Section 3.16., 3.17. and 3.18. of this rule.

§64-45-7. Lead Abatement Designer Duties.

7.1. A licensed lead abatement designer shall generate a written report that provides:

7.1.a. A chronological time frame for each facet of the abatement activity;

7.1.b. The name and address of the building or structure where the lead abatement project is to occur;

7.1.c. The name, address, phone number, and lead abatement training certificates and licenses for the project designer;

7.1.d. A schematic floor plan showing the lead abatement project area, including a description of the characteristics of the material;

7.1.e. A statement identifying the abatement activity as repair, removal, encapsulation, or enclosure;

7.1.f. A schematic floor plan of the project area which shows the physical dimensions, entrance, exit, windows, decontamination unit, load-out area, emergency exits, placement of the HEPA exhaust air filtration units, if applicable, and any measuring devices, warning signs, and barrier tape;

7.1.e. Sampling protocol for project clearance for reoccupancy, including the number of samples, collection points and the analytical method to be employed;

7.1.f. A schematic of the heating, ventilation and air-conditioning system shut-offs, electrical power, water source, fire exits, fire extinguisher, fire alarm, telephone, tool and equipment room, supply box, project field office, bathrooms and decontamination area;

7.1.g. A description of the work procedures to be used; and

7.1.h. A description of the materials and tools to be used in the abatement project.

§64-45-8. Lead Risk Assessor Duties.

8.1. A licensed lead abatement risk assessor shall generate a written report that provides:

8.1.a. Background information regarding the age, condition and physical characteristics of the unit and residential use patterns;

8.1.c. A schematic site plan showing each room within the unit, its use and the location and condition of lead-based paint;

8.1.d. A copy of any previous test results or inspections regarding lead-based paint or other assessments for lead hazards;

8.1.e. An assessment of the potential routes of lead exposure for occupants or lead abatement professionals, which is based upon adequate dust, water, soil and paint chip sampling;

8.1.f. A detailed description of recommended control strategies for reducing lead-based paint hazards and justification for the strategy selected, the locations where the recommended actions should take place, and a suggested prioritization for taking each action based on the degree of the hazard.

8.2. The risk assessment shall be maintained by the risk assessor or firm for a period of three years.

§64-45-9. Prohibited Lead Abatement Project Methods.

9.1. The use of open flame burning, torching, fossil fuel-powered heat plates, welding, cutting torches, and heat guns operating at temperatures greater than one thousand one hundred (1,100) degrees F are prohibited as means of lead based paint removal.

9.2. Uncontained machine sanding or grinding is prohibited.

9.3. Uncontained hydro-blasting and high-pressure water washing are prohibited.

9.4. Uncontained abrasive blasting or sandblasting is prohibited.

9.5. Chemical paint removers that contain methylene chloride are prohibited.

9.6. Dry scraping lead-based paint is prohibited, except for areas around electrical outlets.

§64-45-10. Recommended Lead Abatement Project Methods.

The following lead abatement project methods are recommended:

10.1. Electric-powered flameless heat guns operating below one thousand one hundred (1,100) degrees F, provided that proper respiratory protection is used;

10.2. Mechanical HEPA sanding, HEPA vacuum blasting and HEPA vacuuming needle guns;

10.3. Wet scraping, provided that no electrical hazards are present while doing so;

10.4. The removal of building components to be stripped of lead-based paint off site, provided that dust generation during the removal and transportation of the building components is kept to a minimum;

10.5. Chemical removal methods which do not contain methylene chloride, provided that product material safety data sheet recommendations for safety, and OSHA regulations are implemented;

10.6. The enclosure of building components that contain lead-based paint, provided that the enclosure material becomes a permanent part of the building structure and is properly sealed to ensure that lead dust is permanently contained;

10.7. Encapsulation of lead-based paint, provided that the encapsulating material becomes a permanent part of the building component and will be guaranteed by the lead abatement company and manufacturer from defect for a minimum of twenty (20) years; and

10.8. Total removal of lead-contaminated soil or the covering of lead-contaminated areas with a suitable material that will limit exposure; suitable material includes but is not limited to stone, pavement, gravel or vegetative cover.

§64-45-11. Lead Abatement Project Clearance Levels and Minimum Sampling.

11.1 A licensed lead inspector shall conduct a visual inspection at the conclusion of a lead abatement project and collect required samples.

11.2. A lead abatement project shall be ready for occupation when the following clearance levels are obtained:

11.2.a. Below one hundred (100) micrograms of lead per square foot for interior floors or other horizontal surfaces;

11.2.b. Below five hundred (500) micrograms of lead per square foot for interior window sills;

11.2.c. Below eight hundred (800) micrograms of lead per square foot for window troughs and exterior concrete or other rough surfaces;

11.2.d. Below four hundred (400) parts per million for bare soil areas that are child play areas;

11.2.e. Below two thousand (2000) parts per million for residential bare soil areas; and

11.2.f. A total characteristic leachate procedure (TCLP) below five (5) parts per million lead toxicity for discarded building materials.

11.3. The minimum number of samples to be obtained from a lead abatement project area are defined in Table D of this rule.

11.4. In addition to the required number of samples as defined in Table D, the lead inspector shall take one soil sample for each four hundred (400) square feet of bare soil area of a lead abatement project and one (1) composite sample from homogeneous building materials that is representative of the waste stream.

§64-45-12. Exemption from Notification and Licensing.

12.1. Homeowners performing lead abatement or interim controls on their single unit owner-occupied housing are exempt from the requirements of this rule.

12.2. Abatement does not include renovation, remodeling, landscaping or other activities, when the purpose of such activities is not intended 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. Abatement also 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.

12.3. The provisions of this rule do not apply to lead hazard reduction activities or to persons performing such activities when such activities are performed wholly within or on an industrial facility and are performed by persons who are subject to the training requirements of OSHA: *Provided*, That the provisions of this rule do apply to any child occupied building or area such as a child day care center located at an industrial facility.

§64-45-13. Notification of Elevated Blood Lead Levels.

Any person, contractor or laboratory shall notify the director or designated agency of any medically confirmed elevated blood-lead levels within thirty-six (36) hours of discovery.

§64-45-14. Notification of Lead Abatement Projects.

Each owner or other person responsible for the operation of a building, facility, residence or structure where a lead abatement project is to occur shall notify the division ten (10) days prior to commencement of the project and pay the notification fee shown in Table B at the end of this rule.

§64-45-15. Accreditation of Lead Abatement Training Courses.

15.1. Applicants for accreditation as lead abatement training providers shall submit the following:

15.1.a. The name, address and telephone number of the lead training provider;

15.1.b. A full description of the course curriculum;

15.1.c. A list of instructors, their resumes and qualifications;

15.1.d. A copy of the course examination;

15.1.e. The annual lead training course accreditation fee as shown in Table C at the end of this rule.

15.1.f. Any additional information required by WV code §16-35-10.

§64-45-16. Applicable Federal Standards.

All individuals licensed under this rule shall comply with the following applicable federal standards, which are hereby incorporated in this rule by reference:

16.1. EPA: Lead; Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities; Final Rule. 40 CFR Part 745 (August 29, 1996);

16.2. OSHA: Lead Exposure in Construction; Interim Final Rule. 29 CFR 1926.62 (May 4, 1993); and

16.3. HUD: Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (June 1995).

§64-45-17. Penalties.

17.1. The director shall, depending upon the severity of the violation and upon the degree of health hazard created, suspend or revoke the license of a contractor, inspector, designer, risk assessor, supervisor, or worker if the licensee:

17.1.a. Fraudulently or deceptively obtains or attempts to obtain a license;

17.1.b. Fails at any time to meet the qualifications for license or to comply with the requirements of WV code §16-35-1 *et seq.* or this rule;

17.1.c. Knowingly falsifies or attempts to falsify documents related to a lead abatement project or license;

17.1.d. Fails to meet the applicable federal or state standard for lead abatement;

17.1.e. Fails to remit an assessed fine.

17.2. The director may impose a civil penalty of not less than two hundred fifty dollars ($250) and not more than five thousand dollars ($5,000) for each separate violation of the rule payable within thirty (30) days of receipt of the penalty notification; failure to pay an assessed penalty within that time period will constitute a separate violation.

17.3. The director shall investigate all alleged violations of this rule or of WV code § 16-35-1 *et seq.* reported to the division. Upon the finding of a violation in connection with a lead abatement project the director shall, depending upon the severity of the violation and upon the degree of health hazard created, initiate an appropriate enforcement action which may include the issuance of a cease and desist order directing that all work on the project be halted immediately. Posting of the cease and desist order on the project site constitutes notice of its contents to the property owner and all individuals working on the lead abatement project. Where practicable, however, the director shall deliver a copy of the order by certified mail, return receipt requested, to the property owner and to the contractor.

17.4. In any case where a person fails to halt work following the issuance of a cease and desist order by the director, the violation is presumed to be willful and the person or individual shall be assessed, a civil penalty by the director of not less than ten thousand dollars ($10,000) nor more than twenty-five thousand dollars ($25,000) nor more than fifty thousand dollars ($50,000) for each subsequent violation payable within thirty (30) days of receipt of the penalty notification; failure to a pay assessed penalty within that time period will constitute a separate violation.

§64-45-18. Administrative Due Process.

Those individuals adversely affected by the enforcement of this rule desiring a contested case hearing to determine any rights, duties, interests or privileges shall do so in a manner prescribed in the rules and procedures for contested case hearings and declaratory rulings, 64 CSR 1.

§64-45-19. Severability.

Those provisions of this rule are declared to be severable. If any provision of this rule is held invalid, the remaining provisions shall remain in effect.

TABLE 65-45 A

TYPE OF LICENSE	FEE
Worker	$ 50.00
Supervisor	$ 100.00
Inspector	$ 100.00
Risk Assessor	$ 100.00
Project Designer	$ 100.00
Contractor	$ 300.00

TABLE 65-45 B

	FEE
All Projects	$ 60.00

TABLE 65-45 C

	FEE	
Initial Accreditation	$1,000.00 per Discipline	(max. $3,000.00)
Annual Reaccreditation	$ 500.00 per Discipline	(max. $1,500.00)

TABLE 64-45 D

MINIMUM NUMBER AND LOCATION OF SINGLE-SURFACE DUST SAMPLES

Clearance Category	Category Description	Nu mber and location of Single-Surface Wipe Samples in Each Area[1]	Number and Location of Composite wipe samples
1	Interior treatments No containment within dwelling	Two dust samples from at least four rooms in dwelling (treated or untreated): ⋆One interior window sill or window trough, Alternating between rooms. ⋆One floor. AND ⋆For common areas, one for every 2,000 ft² of a common area room floor (if present)	Three composite samples for every batch of four rooms (whether treated or untreated): ⋆ One floor composite. ⋆ One interior window sill composite ⋆ One window trough composite. AND ⋆ For common areas, one floor subsample for every 2,000 ft² (if present); up to 8,000 ft² can be sampled for every composite.
2	Interior treatments With containment (Plastic sheeting as airlock on doors between treated and untreated areas)	Same as Category 1 but only in every *treated* room (up to four rooms) AND One floor sample outside the containment area but within 10 feet of the airlock to determine the effectiveness of the containment system. This extra single-surface sample is recommended in 20 percent of the treated dwellings in multifamily housing and all single-family homes. ⋆ For common areas, one floor sample for every 2,000 ft² and one floor sample outside containment.	Same as Category 1 but only in every *treated* room AND One floor sample outside the containment area but within 10 feet of the airlock to determine the effectiveness of the containment system. This extra single-surface sample is recommended in 20 percent of the treated dwellings in multifamily housing and all single-family homes. ⋆ For common areas, one floor subsample for every 2,000 ft² (up to 8,000 ft² for each composite) and one floor sample outside containment.
3	Exterior treatments	Two dust samples as follows: ⋆At least one dust sample on a horizontal surface in part of the outdoor living area (e.g., a porch floor or entryway). ⋆One window trough sample on each floor where exterior work was performed. An additional trough sample should be collected from a few lower floors to determine if troughs below the area were contaminated by the work above.	Two dust samples as follows: ⋆One composite on a horizontal surface in part of the outdoor living area (e.g., a porch floor or entryway). ⋆One window trough composite for every four floors where exterior work was performed, including lower floors where exterior work was not done, if present.
4	Routine maintenance work	At least 1 floor dust sample for every 20 high-hazard jobs near the work area.	Same as single-surface sampling.
5	Soil treatment	One dust sample from the entryway.	One dust sample from the entryway.

[1]A room includes a hallway or a stairway. If no window is present, collect just one floor sample. When a closet is treated, the room to which it is attached should be tested. A closet is not considered to be a separate room. If all rooms received similar treatments and cleaning, only four rooms need to be sampled for clearance purposes. More rooms may need to be sampled in larger dwellings. The room to be sampled should be selected based on where most of the dust-generating work was done or in the judgement of the clearance examiner.

FISCAL NOTE FOR PROPOSED RULES

Rule Title: Lead Abatement Licensure

Type of Rule: ___X_ **Legislative** ___ **Interpretive** ____ **Procedural**

Agency: Division of Health
Department of Health and Human Resources

Address: Building 3, Capitol Complex
Charleston, W. Va. 25305

EFFECT OF THE PROPOSED RULE	ANNUAL		FISCAL YEAR		
	INCREASE	DECREASE	CURRENT	NEXT	THEREAFTER
1. ESTIMATED TOTAL COST	$	$	$	$ 64,800	$ 64,800
PERSONAL SERVICES				37,500	37,500
CURRENT EXPENSE				22,700	*27,300
REPAIRS AND ALTERATIONS					
EQUIPMENT				4,600	
OTHER					
REVENUES	$	$	$	$ 64,800	$ 64,800

2. EXPLANATION OF ABOVE ESTIMATES (INCLUDING LONG-RANGE EFFECT):

Estimated Total Costs

Personal Services	
1FTE- Registered Sanitarian	$23,500
1FTE- Office Assistant II	$14,000
	$37,500
Current Expense	
Fringe Benefits (21.69%- $4,783 per employee - 2 FTE)	$17,700
Office supplies	$ 1,200
Postage	$ 600
Telephone	$ 800
Rent	$ 2,400
	$22,700
Equipment (Office Furniture, (2) computers)	$ 4,600
Total Expense	**$64,800**

*Equipment cost reallocated to current expense to allow for lead analyzer source replacements.

Estimated Total Revenue

Licensing	Workers-	350@$ 50	$17,500
	Supervisors-	80@$100	8,000
	Inspectors-	136@$100	13,600
	Risk Assessors-	25@$100	2,500
	Project Designers-	10@$100	1,000
	Contractors-	16@$300	4,800
			$47,400
Project Notification		290@$ 60	$17,400
Licensing+Project Notification		**Total Revenue**	**$64,800**

3. Objectives of this rule:

To establish the licensure of lead abatement professionals conducting lead abatement in child-occupied buildings and target housing in order to reduce lead-based paint and dust hazards to children.

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact of State Government.

None - The lead licensing program will be supported by revenues generated by the program.

B. Economic Impact on Political Subdivision; Specific Industries; Specific Groups of Citizens.

Minimal impact is expected to be experienced by owners of target housing (pre-1978) and facilities regularly occupied by children under six years of age. Industry is not affected.

C. Economic Impact on Citizens/Public at Large.

Minimal or no impact expected to be experienced by public. Some job opportunities will be provided and public health should be improved.

Date: 6/15/98

Signature of Agency Head or Authorized Representative

Joan E. Ohl, Secretary
Department of Health and Human Resources

64 CSR 45

Lead Abatement Licensing Rule

Commenter

James D. McIntosh, Safety Team Leader, Environmental, Safety & Health Committee
West Virginia Manufacturers Association

Response to Comment

A public comment period on the proposed rule, Lead Abatement Licensing, 64 CSR 45, was held beginning June 16, 1998 and ending July 16, 1998. There was only one (1) commenter. The comment is summarized below, and the Department's response is detailed.

§12.3. **Comment:** The proposed rule should be amended so as to state clearly and in unqualified terms that the rule is inapplicable to industrial facilities (except for any which may have on-site day care centers) and should be expressly exempted via provision contained within the corpus of the rule.

Response: The Department considers no change or revision necessary regarding the proposed rule. Section 12.3 is taken directly from the public health code. West Virginia Code 16-35-7(c) and proposed 64 CSR 45.12.3. exempts industrial facilities, *employees, or contractors* from licensing and notification requirements, when no child occupied building or area, such as a day care center is located at the industrial facility. The statute and proposed rule allows regulation of lead hazard reduction activities within or on a child occupied building or area, such as a day care center, located on the premises of an industrial facility and in no way implies that the Department has authority to regulate lead hazard reduction activities taking place in other areas of the industrial facility.

Substantive Changes to the Rule After the Public Comment Period

The dates of the following federal regulations were corrected:

§64-45-16.1. EPA: Lead; Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities; Final Rule. 40 CFR Part 745 (August 29, 1996);

§64-45-16.2. OSHA: Lead Exposure in Construction; Interim Final Rule. 29 CFR 1962.62 (May 4, 1993);

WEST VIRGINIA
MANUFACTURERS ASSOCIATION
2001 Quarrier Street, Charleston, WV 25311
Telephone: (304) 342-2123
FAX: (304) 342-4552
wvma@wvma.com

July 9, 1998

Department of Health & Human Resources
Regulatory Development
Attention: Marsha Dadisman, Acting Director
Capitol Complex
Building 3, Room 265
Charleston, WV 25305

Re: Lead Abatement Licensing Rule

Dear Ms. Dadisman:

On June 15, 1998 the West Virginia Department of Health & Human Resources filed with the West Virginia Secretary of State a proposed rule entitled, "Lead Abatement Licensing Rule," to be codified at 64 CSR 45. As proposed, this rule would implement the legislative mandate contained in House Bill 4034 to establish licensure provisions for lead abatement professionals conducting lead abatement in child-occupied buildings and target housing in order to limit lead-based paint and dust hazards to children. The Fiscal Note attached to the proposed rule, at Section 4.B., states that "[i]ndustry is not affected." The West Virginia Manufacturers Association ("WVMA") represents a broad cross-section of large, medium and small industrial concerns in West Virginia. The WVMA has reviewed the proposed rule and supports the Department of Health & Human Resource's intention to not include industrial facilities within the scope of the rule's provisions. Notwithstanding this stated intention, the proposed rule itself, at Section 12.3, states that

> [t]he provisions of this rule do not apply to lead hazard reduction activities or to persons performing such activities when such activities are performed wholly within or on an industrial facility and are performed by persons who are subject to the training requirements of OSHA: *Provided,* That the provisions of this rule do apply to any child-occupied building or area such as a day care center located at an industrial facility.

Proposed 64 CSR 45-12.3 (emphasis in original.) The WVMA does not object to the provisions of the proposed rule applying to any child day care center which may be located at an industrial facility in West Virginia. However, if the intention of the Department of Health & Human Resources, as stated in the Fiscal Note attached to the proposed rule by Secretary Joan E. Ohl, is to exempt from the scope of the proposed rule's provisions industrial facilities (except for any on-site day care center located within such a facility) then the proposed rule should be amended so as to state clearly and in unqualified terms that the rule is inapplicable to industrial facilities. The Statutory mandate and regulatory purpose is to implement lead abatement licensing standards with respect to child-occupied buildings and target housing (i.e., certain residential structures.) Industrial facilities (except for any which may have on-site day care centers) do not fall within those categories and, therefore, should be expressly exempted via provision contained within the corpus of the rule.

The WVMA appreciates the opportunity to comment on the Department of Health & Human Resource's proposed Lead Abatement Licensing Rule and offers its full cooperation and assistance in refining the current proposal to as much a position of mutual acceptance as is possible. Upon your review of the above, please do not hesitate to contact me with any questions or comments you may have, or if I may provide you with any additional information.

Very truly yours,

James D. McIntosh

James D. McIntosh
Environmental, Safety & Health Committee
Safety Team Leader

Federal Register

Thursday
August 29, 1996

Part XI

Environmental Protection Agency

40 CFR Part 745

Lead; Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 745

[OPPTS–62128B; FRL–5389–9]

RIN 2070–AC64

Lead; Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is finalizing a Federal regulation under section 402 of the Toxic Substance Control Act (TSCA) to ensure that individuals conducting lead-based paint activities in target housing and child-occupied facilities 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 Agency is also finalizing a Federal regulation under section 404 of TSCA that will allow States and Indian Tribes to seek authorization to administer and enforce the regulations developed under section 402. The goal of this regulation is to ensure the availability of a trained and qualified workforce to identify and address lead-based paint hazards, and to protect the general public from exposure to lead hazards.

DATES: This document is effective August 29, 1996. Specific applicability dates related to this final rule are as follows:

States and Indian Tribes seeking EPA authorization to administer and enforce their own lead-based paint activities programs may apply to the Agency starting October 28, 1996. Following EPA authorization, the requirements of the State or Tribal program will become effective as specified in such program.

For States and Indian Tribes that do not apply to EPA for and receive authorization, EPA will administer and enforce the regulations for lead-based paint activities contained in subpart L. The requirements of Subpart L will begin to apply in non-authorized States and Indian Country no later than August 31, 1998, as specified below.

In States and Indian Country where EPA will administer and enforce subpart L, training programs that seek to provide lead-based paint activities training courses or refresher courses pursuant to § 745.225 may first apply to EPA for accreditation on or after August 31, 1998. Such training programs cannot provide, offer, or claim to provide training or refresher training for lead-based paint activities as defined in this subpart, without acquiring accreditation from EPA pursuant to § 745.225 on or after March 1, 1999.

In EPA-administered States and Indian Country, no individual or firm can perform, offer, or claim to perform lead-based paint activities as defined in this subpart, without certification from EPA to conduct such activities pursuant to § 745.226 on or after August 30, 1999. Such individuals or firms may first apply to EPA for certification pursuant to section 745.226 after March 1, 1999. In EPA-administered States and Indian Country, after August 30, 1999 all lead-based paint activities, as defined in this subpart, must be performed pursuant to the work practice standards contained in § 745.227.

ADDRESSEES: Copies of this rule, the public comments received on this rule, EPA's response to those comments and other relevant documents that support the rule are available for public inspection at EPA's headquarters office on weekdays, except legal holidays, between the hours of noon and 4 p.m. at the following location: Environmental Protection Agency, TSCA Public Docket Office (7407), 401 M St., SW., Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: Susan B. Hazen, Director, Environmental Assistance Division (7408), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460, Telephone: 202–554–1404. TDD: 202–554–0551, e-mail: TSCA-Hotline@epamail.epa.gov.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction

A. Legal Authority

The training, certification and accreditation requirements and work practice standards contained in this rule are being promulgated pursuant to section 402 of TSCA, 15 U.S.C. 2682, as amended on October 28, 1992. The Model State Program and regulations on the authorization of State and Tribal lead programs are being promulgated pursuant to section 404 of TSCA, 15 U.S.C. 2684.

B. Summary

Today's final rule is intended to ensure that individuals conducting lead-based paint inspections, risk assessments and abatements in target housing and child-occupied facilities are properly trained and certified, and that training programs providing instruction in such activities are accredited. Target housing is defined as any housing constructed prior to 1978, except housing for the elderly or persons with disabilities, or any 0-bedroom dwelling. A child-occupied facility is defined as a building, or portion of a building, constructed prior to 1978, visited by the same child, 6 years of age or under, on at least 2 different days within any week,

provided that each days visit lasts at least 3 hours, 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.

In addition, the regulations contain a Model State Program (MSP), which States and Indian Tribes are encouraged to reference and use as guidance to develop their own Federally authorized lead-based paint activities programs. The MSP identifies five key elements—training, accreditation, certification, work practice standards and enforcement—which EPA believes are needed to promote and develop a qualified and trained workforce able to conduct lead-based paint activities safely, effectively and reliably. The regulations also contain procedures for States and Indian Tribes to follow when applying to EPA for authorization to administer and enforce a State or Tribal lead-based paint activities programs.

The MSP will allow States and Indian tribes to manage and administer these training, accreditation and certification programs at the State or Tribal level. The Agency believes that programs such as this, which require among other things the certification of individuals, are best administered at the State or Tribal level allowing for individual State or Tribal-specific flexibility.

The purpose of these training, accreditation, and certification requirements and the work practice standards in today's final rule is to ensure that lead-based paint abatement professionals, including workers, supervisors, inspectors, risk assessors, and project designers, are well-trained in conducting lead-based paint activities in target housing and child occupied facilities. The rule will also ensure, through the certification of professionals, that inspections for the identification of lead-based paint, risk assessments for the evaluation of lead-based paint hazards, and abatements for the permanent elimination of lead-based paint hazards are conducted safely, effectively and reliably. In addition, training providers will be accredited to ensure that high quality training for these professionals is available. The Agency believes this certification and accreditation program will allow homeowners and others to hire a well-qualified work force that is adequately trained in the proper procedures for conducting lead-based paint activities.

The work practice standards in today's final rule are not intended to regulate all activities that involve or disturb lead-based paint, but only those that are described as an inspection, risk assessment or abatement by an individual who offers these services. This rule would not regulate a renovation contractor that incidentally disturbs lead-based paint or an individual who samples paint on a kitchen cabinet to determine if the paint contains lead. Today's final rule would cover a contractor who offers to abate a home of lead-based paint hazards, or an inspector who offers to conduct a lead-based paint inspection in a residential dwelling.

Regulated Entities. Potentially regulated entities are those training providers that would be accredited and those professionals who would be trained and certified to conduct lead-based paint abatements.

Category	Examples of Regulated Entities
Lead abatement professionals	Workers, supervisors, inspectors, risk assessors and project designers engaged in lead-based paint activities
Training providers	Firms providing training services in lead-based paint activities

This table is not intended to be exhaustive, but rather provides a guide of the entities that are likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in this table could also be regulated. To determine whether you or your business is regulated by this action, you should carefully examine the provisions in part 745 of the regulatory text. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the FOR FURTHER INFORMATION CONTACT section.

C. Background

On October 28, 1992, the Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X) became law. As a result, the Toxic Substances Control Act (TSCA) was amended to include a new title, Title IV, 15 U.S.C. 2681–2692. TSCA Title IV directs EPA to promulgate several regulations, including the lead-based paint activities training, certification, and accreditation requirements, work practice standards and the MSP included in today's final rule.

The requirements in today's final rule were first proposed on September 2, 1994 (59 FR 45872) (FRL–4633–9). Several changes have been made to the proposed rule because of comments received by the Agency. Nonetheless, the primary objective of the proposed rule and today's final rule remains the same and is consistent with the goals stated in Title X and the mandates prescribed in TSCA Title IV.

The primary objective of today's final rule is to address the nation's need for a qualified and properly trained workforce to assist in the prevention, detection and elimination of hazards associated with lead-based paint. By promoting the establishment of this workforce through today's final rule, the Agency will help to ensure that individuals and firms conducting lead-based paint activities in target housing and child-occupied facilities will do so in a way that safeguards the environment and protects the health of building occupants, especially children aged 6 years and under.

In addition to today's final rule under sections 402 and 404 of TSCA, EPA is developing other rules as mandated by other sections of TSCA Title IV. The relationship of today's final rule to these other rules is discussed in more detail in Unit IV. of this preamble.

II. Consultation with Stakeholders

Following the September 2, 1994 publication of the lead-based paint activities proposal, the Agency met at different times with representatives from various State environmental and public health agencies. At least three meetings were held with State and Tribal representatives under the auspices of the Forum on State and Tribal Toxics Action or FOSTTA. FOSTTA is an organization that serves as a forum for State and Tribal officials to jointly participate in addressing national toxics issues, including lead, and to improve communication and coordination among the States, Indian Tribes and EPA. Under FOSTTA, a lead project has been established to work with the States and Tribes on lead-related issues. Between 10 and 12 States participate on the lead project with EPA.

In addition to FOSTTA, the Agency met on December 5 and 6, 1994, with 93 representatives from 49 State health and environmental agencies and 12 representatives from 10 Indian Tribes. Minutes from the FOSTTA meetings, and the December 1994 meeting are in the docket for today's final rule (Ref. 1).

In addition to encouraging States and Indian Tribes to submit written comments on the September 2 proposal,

the Agency also held meetings with the States and Indian Tribes to discuss their current and future roles as co-regulators in the area of lead-based paint activities. These meetings, in combination with the written comments submitted by the States, helped shape today's final rule.

III. Response to Comments on the Scope of the Rule

The comment period for the proposed rule extended from September 2, 1994 to December 15, 1994. The Agency received a total of 323 comments and has reviewed them all. These comments, along with a detailed summary (Ref. 2) and the Response to Public Comment Document (Ref. 3), a written response to the issues raised by commenters, can be found in the public docket for today's final rule.

Based on the public comments, the Agency has made several changes to the proposed rule. Two of these changes affect the scope of the final rule by modifying the definitions of the buildings and structures covered. Additionally, the Agency has amended the definition of abatement. These changes, and others, are summarized below. For a more detailed discussion of issues raised by commenters and changes made to the final rule, readers should refer to the Response to Public Comment Document.

A. Building Types

One principal change in the final rule is the Agency's decision to delay promulgation of training and certification requirements and work practice standards for individuals and firms conducting lead-based paint activities in public buildings (except child-occupied facilities), commercial buildings, superstructures and bridges. This decision was primarily based on the need to clarify the "deleading" definition contained in the September 2, 1994 proposal, and the Agency's desire to avoid conflict and overlap with the training requirements contained in the Occupational Safety and Health Administration's (OSHA) interim final lead standard (29 CFR 1926.62).

Under the September 2, 1994 proposal, individuals and firms conducting deleading activities in public and commercial buildings, superstructures and bridges would have been subject to EPA training and certification requirements and work practice standards and, possibly, the OSHA training requirements contained in OSHA's interim final lead standard. Under the proposed rule, EPA's intention was to include OSHA's training requirements in EPA's training and certification program. However, commenters noted uncertainty as to whether EPA's proposed definition of "deleading" would have included precisely the same activities which would trigger the training requirements under OSHA's interim final lead standard.

Consequently, commenters believed that EPA's training and certification program would have imposed OSHA training when, in fact, OSHA may not require it. Other commenters also believed that OSHA's training requirements were adequate and that EPA's training and certification program was unnecessary for individuals and firms conducting "deleading" activities in public and commercial buildings, superstructures and bridges.

In its review of the comments received on the deleading definition, the Agency has determined that the definition of the term needs to be clarified. At this time, the Agency is continuing to review the public comments it received on its proposed definition, and is examining available data for the purposes of developing options to establish training and certification requirements and work practice standards for individuals and firms that conduct deleading activities in public and commercial buildings, superstructures and bridges. The Agency is also considering options that will eliminate the potential for overlap between any training requirements EPA may propose in the future and OSHA training requirements for such individuals and firms.

Another related change involves the Agency's decision to include requirements for lead-based paint activities conducted in public buildings (except child-occupied facilities) in the future action covering commercial buildings, superstructures and bridges. Accordingly, today's final rule does not cover public buildings constructed prior to 1978 (except child-occupied facilities).

The Agency is taking this action in response to numerous comments that urged the Agency to focus its efforts on lead-based paint activities conducted in housing and other facilities frequented by children. In the September 2, 1994 proposed rule, individuals and firms conducting lead-based paint activities in public buildings would have been required to adhere to the same regulations as in target housing, regardless of whether children frequented the buildings. In the September 2, 1994 proposal, the Agency specifically requested comment on whether all public buildings should be subject to the same regulations and grouped together in this way with target housing.

A significant majority of commenters expressed concern that application of these requirements to all public buildings, as defined in the September 2, 1994 proposal, would have resulted in the expenditure of substantial resources without a comparable reduction in lead-based paint exposures among children aged 6 years and under. Under the September 2, 1994 proposal, the Agency broadly defined public buildings as "any building constructed prior to 1978, except target housing, which is generally open to the public or occupied or visited by children, including but not limited to stores, museums, airport terminals, convention centers, office buildings, restaurants, hospitals, and government buildings, as well as facilities such as schools and day-care centers."

In response to those comments that the Agency focus its requirements on individuals and firms conducting lead-based paint activities in buildings frequented by children, today's final rule establishes a sub-category of public buildings named "child-occupied facilities."

Today's final rule defines a child-occupied facility as "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 2 different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly 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."

Under today's final rule, individuals, firms and training providers that either offer training in the performance of lead-based paint activities in child-occupied facilities, or that perform or offer to perform such activities in child-occupied facilities are subject to the same requirements as individuals, firms and training providers involved in target housing.

The Agency's decision to define and establish child-occupied facilities as a sub-category of public buildings with requirements equivalent to those for target housing is based on one of the key objectives of today's final rule, which is to prevent and reduce lead exposures among young children.

The Agency believes that children face potentially equivalent (if not greater) risks from lead-based paint hazards in schools and day-care centers as they do at home. Indeed, some

children spend more time in a particular classroom or day-care room in a given day or week than they might spend in a single room in their homes. If that classroom contained a lead-based paint hazard, the children in it could be at risk.

The Agency believes section 402(b) provides it with the flexibility necessary to regulate lead-based paint activities in child-occupied facilities in the same manner it regulates those activities in target housing. Although section 402(b)(2) uses terms such as "identification" and "deleading" instead of "inspection," "risk assessment" and "abatement," EPA believes that, given the similarity of the population to be protected and the nature of the risk they face, the section 402(b)(2) terms can be understood to include the same types of lead-based paint activities as specified in section 402(b)(1). "Identification" of lead-based paint under section 402(b)(2) is analogous to "inspection" under section 402(b)(1). "Deleading" under section 402(b)(2) is equivalent to "abatement" under section 402(b)(1). While there is no direct analog in 402(b)(2) to "risk assessment," EPA believes such activity is fairly (and necessarily, from a logical perspective) included within the phrase "activities conducted by a person who conducts or plans to conduct an elimination of lead-based paint or lead-based paint hazards." (See definitions of "deleading" in section 402(b)(2)).

Commenters also supported the Agency's decision to focus on those buildings or portions of buildings where children spend a significant amount of time, or that children regularly or frequently use, rather than all public buildings. Commenters cited preschools and kindergarten classrooms as examples of the types of buildings that needed to be included, like target housing, in the regulatory program contained in today's final rule. By citing such facilities as examples, commenters appeared to indicate that the Agency should focus on facilities that a 6-year old child regularly attends, rather than facilities that children may visit intermittently or infrequently, such as museums, hospitals, grocery stores or airports.

In selecting the 3-hour, 2-day a week time requirement for its definition of a child-occupied facility, the Agency considered national survey data compiled by the U.S. Department of Education (Ref. 4) and the U.S. Bureau of the Census (Ref. 5). Data from the Department of Education and the Bureau of the Census indicate that children attending preschool between age 3 and age 6 or under will meet for a minimum of 3 hours a day, 2 days a week.

Based on this data, the Agency chose to define "child-occupied" facilities as facilities where a child would spend a minimum of at least 3 hours a day, 2 days a week. Relying on the available data, the Agency believes its definition will cover the vast majority of preschools, kindergartens and day-care centers. Moreover, the decision to exclude child-occupied facilities constructed after 1978 is consistent with the statutory definition of both target housing and public buildings, which exclude both housing and public buildings constructed after 1978.

The Agency also sought to include only facilities where there is regular or recurring visitation, over time, by a child, by including a combined annual visitation minimum of 60 hours. The rationale for this choice was that a likely minimum recurring visitation schedule for a child would be a 10-week day-care session, 2 days per week, 3 hours per day that would be equal to 60 hours.

Today's final rule requires that individuals and firms conducting lead-based paint activities in child-occupied facilities meet the same training and certification requirements as individuals and firms working in target housing. The Agency designed the training and certification requirements for individuals and firms working in target housing primarily to ensure that abatement professionals are instructed on how to conduct lead-based paint activities to identify, reduce or eliminate lead-based paint hazards that may present risks to children. Consequently, the Agency believes these requirements are also appropriate for individuals working in child-occupied facilities.

Commenters did not support the development of a set of work practice standards for child-occupied facilities that would differ from the work practice standards in target housing. Nor does the Agency have any reason to conclude that a different set of work practice standards should be developed for child-occupied facilities. Consequently, the work practice standards for child-occupied facilities do not differ from those work practice standards established by this final rule for target housing.

The proposed rule specifically exempted from regulation individuals who perform lead-based paint activities within residences which they own, unless the residence is occupied by a person or persons other than the owner or the owner's immediate family while the activities are being conducted. The majority of public commenters supported this exemption and it will remain in the final rule. However, some commenters expressed concern that homeowners should not perform abatements in their own home where there is a child with an elevated blood lead level. The Agency agrees with this comment and has changed the final rule accordingly.

B. Definition of Lead-Based Paint Abatement in Target Housing and Child-Occupied Facilities

The Agency received roughly 60 comments on its proposed definition of lead-based paint abatement. In developing the proposed rule, the Agency relied on the definition of abatement contained in section 401 of TSCA. Section 401(1) of TSCA defines abatement as:

> . . .any set of measures designed to permanently eliminate lead-based paint hazards in accordance with standards established by the Administrator under this title. Such term includes:
>
> (A) the removal of lead-based paint and lead-contaminated dust, the permanent containment or encapsulation of lead-based paint, the replacement of lead-painted surfaces or fixtures, and the removal or covering of lead-contaminated soil; and
>
> (B) all preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures.

In its September 2, 1994 proposal, the Agency defined "abatement" as follows:

> *Abatement* means any set of measures designed to permanently eliminate lead-based paint hazards in accordance with standards established by the Administrator under Title IV of TSCA. Such term includes:
>
> (1) the removal of lead-based paint and lead-contaminated dust, the permanent containment or encapsulation of lead-based paint, the replacement of lead-painted surfaces or fixtures, and the removal or covering of lead-contaminated soil; and
>
> (2) all preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures.
>
> Abatement shall be presumed in the following circumstances:
>
> (A) projects for which there is a written contract stating that an individual or firm will be conducting activities in or to a dwelling unit that will permanently eliminate lead-based paint hazards;
>
> (B) projects involving the permanent elimination of lead-based paint or lead contaminated soil and conducted by firms or individuals certified in accordance with this §745.226 or this regulation; or
>
> (C) projects involving the permanent elimination of lead-based paint or lead contaminated soil and conducted by firms or individuals who, through their company name, promotional literature, or otherwise advertise or hold themselves out to be lead abatement professionals.
>
> (3) Abatement does not include renovation and remodeling, or landscaping activities

whose primary intent is not to permanently eliminate lead-based paint hazards, but is instead to repair, restore or remodel a given structure or dwelling, even though these activities may incidently result in a reduction in lead-based paint hazards.

In response to the proposal, commenters expressed concern that the phrase ". . .any set of measures. . ." implied that the Agency assumed that abatement will always occur throughout an entire residential dwelling, rather than to some subset of components. The Agency agrees with the commenters and has clarified its belief that abatements may be performed on components of buildings, as well as the whole building, by adding the following phrase: "any measure or set of measures designed to permanently eliminate lead-based paint" to its definition of abatement in today's final rule.

In the proposed rule, by way of clarification, the Agency provided three circumstances (see (2)(A)(B) and (C) above) in which abatement shall be presumed. Commenters noted that, as proposed, these illustrative circumstances may have resulted in the imposition of today's requirements upon individuals and firms conducting renovation and remodeling or other similar nonabatement activities.

For example, a renovation and remodeling contractor may also be certified as an abatement supervisor or worker, and may choose to advertise his/her lead-based paint abatement services as one specialty his/her business can provide. This should not mean that all renovation or remodeling projects this contractor works on should be considered abatement for the purposes of this rule. In response to these comments, § 745.223(3)(ii) and (3)(iii) of the abatement definition in today's final rule identifies activities that are not considered abatements. These include renovation and remodeling activities covered by § 745.223(4) of the abatement defintion which are not specifically designed to permanently eliminate lead-based paint hazards, but instead, are designed to repair or remodel a residential dwelling, and interim control activities.

Another issue raised by commenters was that the Agency's abatement definition focused on the intent of the building owner and the individual or firm conducting an abatement. The commenters suggested that the Agency's intent-based approach creates a loophole for building owners and contractors who will escape regulation by calling abatement something else, such as renovation and remodeling. A third concern was that the definition required abatement activities to result in the permanent elimination of a lead-based paint hazard, as opposed to a temporary reduction of a hazard.

Although these comments are not without merit, EPA has decided to maintain its proposed abatement definition, with some minor adjustments. EPA believes that the clear intent of Congress was to focus the scope of this initial regulation on abatement activities, and to define abatements as those projects where there is a conscious effort on the part of the building owner and contractor ("measures designed to") to permanently eliminate lead-based paint hazards.

In writing its definition of abatement, Congress did not say any set of measures "which permanently eliminate" lead-based paint hazards. Nor did it say any set of measures "which have the effect of permanently eliminating" lead-based paint hazards. Instead, Congress defined abatements as any set of measures "designed to permanently eliminate" lead-based paint hazards. Webster's defines the term "design" as "to intend for a definite purpose." By including the phrase "designed to" in its definition of abatement, EPA believes that Congress was specifically directing EPA to regulate as abatements only those activities which are undertaken with the definite purpose or intent of permanently eliminating lead-based paint hazards.

The reason for this focus can be found in the legislative history that accompanies Title X. Prior to the passage of Title X, and even today, abatements were being conducted to reduce or eliminate lead exposure to children when in fact they were, because of improper training or technique, increasing exposures. This situation, in part, prompted Congress to direct the Agency to develop today's final rule regulating abatement activities.

Other commenters suggested that the Agency's definition of abatement should specifically include renovation and remodeling, interim controls, operations and maintenance, and any other activity that may disturb lead-based paint and create a potential hazard.

The definition of abatement in section 401(1) of TSCA includes a list of specific activities (e.g., removal of lead-based paint, replacement of lead-painted surfaces or fixtures) which are included within the definition's scope. This list is cited by some commenters as indicating that abatement should include activities, such as renovation, that are not necessarily intended to eliminate lead-based paint hazards. However, in providing this list, Congress did not intend that it be read or applied in isolation from the preceding intent-based definitional language. The list provided in section 401(1)(A) and (B) merely identifies some of the "measures" that may be taken by a contractor to "permanently eliminate lead-based paint hazards." EPA believes that, for any of the measures specified in section 401(1)(A) and (B) to be considered abatement, they must also be conducted with the intent or "definite purpose" of permanently eliminating lead-based paint hazards.

Clearly, Congress recognized that these other activities, such as renovation or remodeling, may disturb lead-based paint and may result in lead-based paint hazards. In response to this concern, Congress directed the Agency, under section 402(c), to conduct a study to determine the extent to which renovation and remodeling activities may create lead-based paint hazards. Based on the results of this study, section 402(c)(3) of TSCA directs EPA to revise today's regulations to address the lead-based paint hazards associated with renovation and remodeling. Thus, rather than requiring regulations now for all non-abatement activities, section 402 of TSCA directs EPA to defer such regulation pending further study to determine which, if any, renovation and remodeling-type activities create a lead-based paint hazard.

IV. Relationship of Sections 402 and 404 to Section 403 of TSCA

Under section 403 of TSCA, EPA is developing a rule that will identify conditions of lead-based paint, and lead levels and conditions in residential dust and soil that would result in a hazard to building occupants, especially children age 6 and under. In combination with the work practice standards contained in § 745.227 of today's final rule, the Agency expects that the levels and conditions identified in the TSCA section 403 rule will provide clear direction on how to identify, prioritize and respond to hazards from lead in and around target housing.

Promulgation of the TSCA section 403 rule, however, has been delayed until the Agency completes various information gathering and assessment activities. On January 3, 1996, the United States District Court for the Northern District of New York issued a decree, consented to by EPA and the Atlantic States Legal Foundation (ASLF), that requires EPA to propose the TSCA section 403 rule by November 30, 1996 and to issue a final rule by September 30, 1997 (Ref. 8).

In the interim, the Agency has published guidance to assist the public in identifying lead-based paint hazards, sources of lead exposure, and the need for control actions in environments where children may be present.

EPA originally issued this guidance in a July 14, 1994 memorandum from Lynn R. Goldman, Assistant Administrator for Prevention, Pesticides and Toxic Substances, to the Agency's Regional Division Directors, entitled "Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil" (the "section 403 Guidance"). Subsequently, copies of the section 403 Guidance have been available from the Agency upon request. To further disseminate the section 403 Guidance, the Agency published the full text of that document in the Federal Register on September 11, 1995 (60 FR 47248) (FRL–4969–6).

In the September 2, 1994 preamble, the Agency provided a lengthy discussion of the relationship between the section 402/404 regulations and the forthcoming section 403 regulation. The Agency explained why it believed it was appropriate to offer the section 402/404 rule for public comment, in the absence of a section 403 regulation (See 59 FR 45875).

In response, the Agency received several public comments. None of the comments stated that the Agency should not promulgate a final regulation for lead-based paint activities in target housing without a final section 403 rule. Seven comments were received from parties with an interest in public and commercial buildings, superstructures and bridges, urging the Agency to delay promulgating a TSCA section 402/404 rule covering those types of structures until the section 403 rule has been promulgated. As discussed previously, today's final rule does not address these building types, and thus these comments are not applicable.

Lastly, one commenter stressed the importance of publishing the TSCA section 403 rule as quickly as possible, but did not suggest that delaying action on the TSCA section 402/404 rule was necessary.

The Agency understands that without a final section 403 rule identifying lead-based paint hazards, full implementation of today's final rule will be difficult. The Agency has addressed this problem in the ASLF consent decree, by committing to promulgate a final rule under section 403 by September 30, 1997, well before subpart L of this rule will become effective in EPA administered States and Indian Country.

V. Response to Comments on the Accreditation of Training Programs in Target Housing and Child-Occupied Facilities

Section 745.225 includes various requirements and the application procedures that training programs must follow to become accredited by EPA to provide instruction in the lead-based paint activities and work practice standards described in this rule. These procedures and requirements apply to training programs that will offer both basic and refresher training courses.

Training programs may offer courses for one or more of the following five work disciplines: (1) Inspector, (2) risk assessor, (3) supervisor, (4) abatement worker, and (5) project designer. Minimum curricula requirements for each of these courses can be found at § 745.225(d).

The Agency has already developed and released model course curricula materials for the inspector, risk assessor, supervisor and abatement worker disciplines. The Agency is currently modifying and updating these materials, and developing a new model course for project designers, to reflect the course curricula contained in § 745.225(d). EPA will make these materials available prior to August 31, 1998.

The Agency received a variety of comments on the work disciplines, training courses and accreditation procedures in the proposed rule. Among the key issues raised were: the number of work disciplines; the length of the courses; their traditional classroom approach; the course curricula; the course test and hands-on assessment; instructor qualifications; and the procedures for applying for accreditation.

In response to these comments, the Agency has adjusted the proposed rule in several ways. EPA believes these the adjustments will result in a more flexible accreditation system for both training program providers and for individuals seeking training and certification through that system.

A. Framework for Training

Generally, most commenters agreed in principle with the tasks and responsibilities identified by the Agency under its five work disciplines: inspector, risk assessor, supervisor, worker, and project designer. On the other hand, commenters were divided on whether five separate work disciplines and training courses were needed to accomplish the tasks and objectives associated with inspection, risk assessment and abatement. In general, commenters were concerned with the potential for redundancy and overlap among the proposed five training courses.

Although the final rule retains five distinct work disciplines, as originally proposed, the Agency has made several changes to make the courses more modular in their design, eliminate potential redundancies in the course curricula, and reduce course length. Because of these changes, the Agency believes that the market will be better able to manage and more efficiently provide training to individuals responsible for performing lead-based paint inspection, risk assessment and abatement activities.

The Agency has consulted with OSHA to eliminate any redundancies between the course curricula contained in § 745.225(d)(3) and (5) for the abatement supervisor and worker, and the training program OSHA has established under its interim final lead standard (29 CFR 1926.62). Based on discussions with OSHA and a review of public comments, the Agency has decided that the best way to eliminate any redundancies or confusion regarding OSHA training versus EPA training is to remove OSHA's training program elements from the course curricula contained in § 745.225(d)(3) and (5).

As a result, training programs have the option of offering courses in: (1) OSHA training; (2) EPA training; or (3) both OSHA and EPA training. Only those programs that wish to offer EPA training would need to apply for accreditation under this rule.

A key difference between OSHA and EPA training is that OSHA training is primarily designed to reduce the occupational exposure to lead for construction workers. The OSHA standard establishes maximum limits of exposure to lead for all workers covered, including an action level of 30 $\mu g/m^3$ calculated as an 8–hour time-weighted average (TWA). At or above this action level, workers are subject to OSHA's training requirements, which primarily involve instruction in respirator use, engineering and work practice controls for the containment of lead, and OSHA's medical surveillance program.

In contrast, the primary purpose of EPA training for abatement workers, supervisors and project designers is to protect building occupants, particularly children ages 6 years and younger, from potential lead-based paint hazards and exposures both during and after an abatement.

The deletion of OSHA's training program elements has helped reduce the length of the abatement worker course from a proposed 32–hour course

(including 10 hours of hands-on instruction) to 16 hours (including 8 hours of hands-on instruction). The Agency has also reduced the emphasis on providing instruction in basic construction techniques and focused instead on the practical application of abatement methods and practices. The Agency believes providing adequate instruction on both construction and abatement techniques, even in a 32-hour course, would have been very difficult, if not impossible.

Furthermore, the final rule has retained 8 of the 10 hours of hands-on instruction, as proposed. Commenters were extremely supportive of the hands-on requirements of the rule, and the Agency believes that hands-on training helps trainees to retain the knowledge they acquire. Incorporating, as it does, 8 hours of hands-on training, the Agency believes that the 16-hour requirement in the final rule will enable workers to conduct safe, reliable and effective abatements.

Another change designed to reduce course length and eliminate overlap in the rule is the decision to establish one 32-hour course requirement that both supervisors and project designers will take, and to establish an additional 8-hour course supplement that project designers are required to take.

Under the proposed rule, supervisors and project designers would have been required to take one 40-hour course, and project designers would have been required to take an additional 16-hour course supplement. Most of the comments on the proposal suggested that the Agency could combine some of the course topics from the two classes.

As in the proposed rule, the Agency's premise for developing one course for both supervisors and project designers is the similarity in the job responsibilities of these two work disciplines. Areas where the supervisor and project designer share similar learning needs are listed in the course curriculum at § 745.225(d)(3). Some of the course topics (e.g., risk assessment/inspection report interpretation) reflect the Agency's decision to insert topics from the proposed project designer course into that of the final joint supervisor/project designer course.

For example, the ability to interpret inspection and risk assessment reports is a skill that both supervisors and project designers must have, since they are both responsible for either the oversight of abatement activities or are responsible for designing abatement plans based on the results of inspections and risk assessments.

The course supplement for project designers is intended to provide specific instruction in designing lead-based paint abatement activities in target housing and child-occupied facilities. Clearly, this 8-hour course cannot train an individual in all aspects of project design. However, the course will compliment the education and skills that project designers must have (e.g., a degree in engineering or 4 years experience in building construction and design) by providing lead-specific design instruction.

The Agency also received several comments regarding the training for inspectors and risk assessors. Many commenters requested clarification about whether an individual must take both the inspector and risk assessor course as a part of the process to become certified as a risk assessor. The simple answer is yes; however, the inspector and risk assessor courses do not necessarily have to be taken back-to-back. Training providers have the option of offering the inspector course separate from the risk assessor course, although the provider may choose to offer the two courses as one unit. More detail regarding the certification process for inspectors and risk assessors is provided in Unit VI. of this preamble.

An additional change to the rule is the allowance for alternative training methods, including supplemental at-home study programs. The Agency specifically requested comment on the use of at-home study materials and other alternative training methods in its September 2, 1994 proposal. Most of the comments received on this issue supported the use of alternative training methods in lieu of classroom instruction, with certain restrictions.

Commenters opposed to the use of alternative training methods generally expressed reservations regarding the quality of such methods and the need for the teacher/student interaction afforded in the classroom.

Based on a review of these comments, the final rule permits the use of alternative training techniques (e.g., video training, computer-based training) as a supplement to the hands-on skills assessment or as a substitute for the lecture portion of the training course requirements outlined in § 745.225(d). The Agency agrees with commenters who note that alternative training programs, such as at-home study, can result in the effective transfer of information, if certain restrictions are implemented to ensure the quality of these programs.

To ensure the quality of such alternative programs, the final rule requires training providers who opt to use alternative techniques to submit all materials as specified under § 745.225(b)(1) as a part of their application for accreditation. These materials include copies of the course agenda, and student and instructor manuals.

The accreditation of alternative training programs will be based on EPA's review of the training materials submitted under § 745.225(b)(1), including the course agenda and manuals. In its review, the Agency will consider on a case-by-case basis the provisions made by a training program to ensure the quality of its course materials. Based on that review, the Agency may accredit programs offering alternative training and instructional methods.

In addition, § 745.225(c)(6) of the final rule also requires all training programs, including those using alternative training methods, to meet the minimum hourly requirements for hands-on activities in their training courses. Under § 745.225(c)(7), all training programs are also required to administer a course test and conduct a hands-on skills assessment or a proficiency test as discussed below.

One specific example of alternative training/testing techniques that the rule mentions is the use of a proficiency test in lieu of a hands-on assessment and course test. A course that offers a proficiency test would consist primarily of an evaluation of the effectiveness and reliability of a student's ability to conduct a particular lead-based paint activity. The proficiency test must also cover all of the topics and skills addressed in a particular course. For instance, a proficiency-based course in inspection could involve a mix of lecture material with students conducting a mock inspection in a residential dwelling with known lead-based paint concentrations. The student would be evaluated on the accuracy of the results of their inspection.

One other issue raised by commenters was the lack of detail on specific activities for the "hands-on" component of a course. The Agency has not however, modified the final rule to specify activities that training programs must use for the hands-on component of their courses. The Agency still believes that qualified training programs should be able, without additional regulation, to develop specific hands-on activities based on their knowledge of lead-based paint activities and the industry. Furthermore, the Agency notes that, as the technologies for conducting lead-based paint activities develop, the focus of the elements of hands-on training will change. The course topics required to have a hands-on component are

marked with an asterisk in § 745.225(d) of the regulatory text.

B. Training Program Accreditation Requirements

1. *General comments.* The Agency received a significant number of comments on the qualifications proposed for instructors. Additionally, commenters requested clarification on whether the Agency requires training providers to offer courses for individuals who do not speak English, or who have low reading comprehension. Other commenters asked the Agency to clarify or change specific aspects of the proposed accreditation process.

For example, several commenters requested clarification on the number of instructors that a training program must employ to become accredited. Some commenters thought that under the September 2, 1994 proposal, a training program would be required to employ a minimum of three individuals to obtain accreditation: a training manager, a principal instructor and a work practice instructor. Other commenters interpreted the proposed rule to mean that at a minimum only one individual—the training manager—was required to staff a training program.

On this same topic, some commenters criticized the proposal for setting up an "exclusive" training system. They believed that the proposed experience, education and other qualifications for the training manager, and principal and work practice instructors were excessive. These commenters stated that the proposed qualifications were unnecessary, and that they would prevent competent and talented instructors from offering training in lead-based paint activities. Under the final rule, one person may be employed as both the training manager and the principal instructor, if the individual possesses the qualifications listed at § 745.225(c)(1) and (2).

Furthermore, the Agency observes that the final rule no longer includes work experience or educational prerequisites for work practice instructors, but instead allows training programs to employ guest work practice instructors, who may provide either lecture or hands-on instruction in a course.

Some commenters urged the Agency to stipulate specific qualifications for guest instructors, or to limit the amount of time a guest instructor may be employed by a training program. The final rule does not, however, set such limits. The Agency believes that it would be too difficult to regulate the qualifications of the many kinds of inter-disciplinary guest instructors that a training program might want to employ, given that their backgrounds and credentials will vary significantly. For example, physicians, certified abatement supervisors, lawyers, housing officials and other professionals could possibly be employed as guest instructors. Given the diversity in education, training and experience among these professionals, the Agency does not believe that establishing specific qualifications is either possible or useful and the final rule leaves that determination to the training manager.

In terms of setting a limit on the amount of time that a guest instructor may be used, the Agency has placed the responsibility for ensuring the quality of a training course on the training manager. The Agency believes that the decision for determining how much time a guest instructor should be used is a decision best made by the training manager, in consultation with the principal instructor.

Additionally, the Agency notes that the training manager ultimately is responsible for ensuring the quality of instruction, and that it is in the best interest of a training manager to account for the capabilities and experience of the principal instructors.

Lastly, the Agency notes that today's final rule does not require training providers to offer courses for individuals who do not speak English or who have a low reading comprehension. The Agency believes that training providers should be given the flexibility to offer special courses for such individuals, depending on demand. However, the Agency does recommend that training providers make special provisions to accommodate the needs of individuals who cannot speak English, or who have a low reading comprehension.

2. *Prerequisites—training manager.* In addition to these changes, today's final rule more clearly describes the prerequisites for the training manager.

For example, under the proposed rule the qualifications required for a training manager were flexible and intended to accommodate a broad range of work experience and educational backgrounds. Specifically, the proposal would have required that training managers, at a minimum, possess either some training or education in teaching adults. In addition, the proposal would have required that training managers possess experience or education in one of three additional areas, specifically: (1) A bachelor's or graduate degree in building construction technology, engineering, industrial hygiene, safety, or public health, or (2) 4 years of experience managing an occupational health and safety program, or (3) an additional 2 years of experience teaching adults.

The final rule has been revised, however, to require training managers to meet any one of the four prerequisites now listed at § 745.225(c)(1). As discussed later in this section of the preamble, the prerequisites contained in the final rule are different from those proposed and include the addition of a fourth alternative prerequisite under § 745.225(c)(1)(iv).

Additionally, the final rule no longer contains the requirement that all training managers possess either training or education in teaching adults. The Agency's decision to eliminate the training or educational requirement in adult education was based on its review of several comments. These comments suggested that, although training or experience in adult education may be valuable, it should not be required of all training managers, given that the primary function of the training manager is to administer and manage a training program—not necessarily to instruct adults. The Agency agrees with these comments, but notes that the final rule maintains the 2 years of experience in adult education as one of the four prerequisites that can now be used to qualify an individual as a training manager.

The decision to retain the 2 years of experience in adult education as one of the four available prerequisites for qualifying training managers is based on several factors. The most important factor is the Agency's desire to accommodate the broad range of work experience and educational backgrounds that training managers and instructors may bring to their work. This approach, which most commenters widely supported, has been retained and further extended under § 745.225(c)(1) of the final rule.

For instance, in addition to recognizing bachelor or graduate level degrees in building construction, engineering, industrial hygiene, safety or public health, the final rule also would permit individuals who possess a degree in business administration or education to assume the responsibilities of a training program manager.

Although these experiences may differ from one another, the Agency believes that an individual can effectively utilize them to ensure the development of a quality training program. Furthermore, the Agency's role in the accreditation process also will contribute to the development and establishment of quality lead-based paint activities training programs.

3. *Prerequisites—principal instructors.* The final rule also provides a great deal of flexibility in recognizing the work experience and educational backgrounds of principal instructors. For example, instead of specifically listing the type of training, experience or education in teaching adults that a principal instructor must possess—as had been proposed—the final rule now requires only that a principal instructor possess demonstrated experience in teaching adults. This change is based on numerous comments that objected to the specificity in the proposed rule, particularly the requirement that principal instructors do one of the following: (1) Complete a 40-hour train-the-trainer course, or (2) obtain a degree in adult education, or (3) possess at least 2 years of experience in teaching workers/adults.

Most of the comments on this requirement stated that a 40–hour train-the-trainer course was too long and/or that the educational degree or 2–year work experience requirement was excessive. Other commenters requested clarification on what constituted 2 years of work experience, and noted that a 40–hour train-the-trainer course was not available for the purposes of qualifying principal instructors.

Based on its review of this proposed requirement and in response to these comments, the Agency revised the final rule to require that principal instructors possess demonstrated experience, education or training in teaching workers/adults, as well as a minimum of 16 hours in lead-specific training. Commenters on the proposal also stated that requiring principal instructors to have 2 years experience in the construction industry would limit the number of qualified instructors. In response, the Agency now requires that principal instructors possess demonstrated experience, education or training in lead or asbestos abatement, painting, carpentry, renovation, remodeling, occupational safety and health or industrial hygiene.

Although the term "demonstrated" is very broad, the Agency believes that the final rule should accommodate the wide range of experiences that principal instructors may have acquired in teaching adults. This requirement will allow an instructor to demonstrate, through a variety of materials—official academic transcripts, resumes, letters of reference, certificates from training courses—that they possess the skills or experience necessary to provide effective instruction. This approach is preferable to attempting to develop an exhaustive list of work experiences or academic degrees, that will invariably omit an unthought-of, but relevant, job title.

C. Accreditation Application Process

The Agency received a variety of comments on the process of applying for accreditation. Some commenters indicated that the Agency should have required more documentation as a part of the application process, while other commenters felt that fewer documents and less information were needed to complete an application package.

The information and materials to be submitted by training programs as a part of the application process are specified at § 745.225(b)(1) in today's final rule. With some minor exceptions, as described below, EPA has retained most of the information and documentation requested from the proposed rule.

For example, the Agency will no longer require that training programs submit examples of course completion certificates, since it is unlikely that receipt of such copies will help prevent fraud or misrepresentation of such certificates.

As a matter of clarification, a few commenters thought that the proposed rule would have required that training programs submit to EPA the documentation listed at § 745.225(c)(4), as proof of the qualifications of its instructors. Under the final rule, the Agency has now clarified that it does not require these documents as part of the application process for accreditation. Rather, they are to be retained at the training site and must be made available to the Agency in the event of an inspection, audit or an enforcement action.

Comments also were received asking the Agency to specify the facilities and type of equipment needed to deliver quality training, and clarification on whether training programs should submit separate descriptions of facilities and equipment when conducting off-site training.

In its review of these requests, the Agency believes that some commenters felt EPA should assist the training community in establishing a floor for the type of equipment investments that a training facility should make. EPA disagrees that it should play a direct role as a part of the regulatory process in these matters. The Agency also believes it is not necessary to specify the facilities, type of equipment and other related details that training programs should employ as a part of their routine operations.

Rather, the Agency believes that training providers should review the course curriculum requirements contained in § 745.225(d) of the final rule, and, if possible, obtain copies of or information on the model course curricula developed by the Agency. This type of information should assist in determining the type of equipment and other materials that will be needed to provide instruction in lead-based paint activities.

Other commenters asked the Agency to specify the content of a course test blueprint and the activities that should be included as a part of the hands-on assessment. The test blueprint should outline the training objectives of the course. Presumably, these objectives will be the basis for developing course test questions, and providers should indicate that. The Agency does not believe it needs to further clarify, for qualified training providers, what activities constitute hands-on training. Training providers should be able to develop suitable hands-on exercises to meet the accreditation requirements given the direction provided in the rule.

Several comments were received on the Agency's requirement that, in order to provide refresher training courses in one or more disciplines, a training program must either simultaneously apply for accreditation to teach the corresponding full length course(s) or already be accredited to teach the corresponding course. Among the comments received on this requirement, a small majority favored it.

Despite this support, the Agency has eliminated this requirement for several reasons. One is that the Agency recognizes that under the grandfathering provisions contained in § 745.226(d) there is likely to be a high level of demand for refresher training, once § 745.225 becomes effective. Therefore, the Agency believes that maximizing the opportunities for providers to offer refresher training courses will be necessary to assist the training community in meeting the demand for these courses. Under § 745.225(e), training programs will be required to link the instruction and testing provided in a refresher training course with the course topics contained in § 745.225(d), as appropriate. This will help ensure consistency between EPA's full-length and refresher training curricula. Furthermore, the policy of permitting training programs to offer refresher-only training—without a precondition of offering full-length courses—is consistent with other Agency directives and policies issued under the Asbestos Hazard Emergency Response Act of 1986.

D. Re-accreditation of Training Programs and Quality of Instruction

Section 745.225(f) contains requirements to ensure the continued availability of quality training by requiring training providers to apply for re-accreditation every 4 years. The reaccreditation process is very similar to the initial application process.

Commenters were generally supportive of the requirements for re-accrediting training providers, although a few commenters suggested that training providers should be re-accredited more frequently than every 3 years. They reasoned that re-accreditation is necessary more than once every 3 years because of rapid technological changes in the lead-based paint activities field and the need to ensure that training courses provide instruction in the most current technology.

The Agency disagrees with this comment. Under the accreditation program established by today's final rule, EPA will maintain a list of accredited training programs. When a technological advance or other significant information develops that EPA believes would benefit the lead-based paint activities training community, EPA will provide this information to the accredited training providers. The Agency believes that keeping training providers informed of recent advances in technology allows training providers to be re-accredited every 4 years.

Some commenters expressed concern that the rule would not ensure that a training program would continue to offer the same quality of instruction in the years after initial accreditation. Further, these commenters were concerned that the proposed re-accreditation requirements did not fully address this issue. In response, the Agency has changed the final rule to require that training providers include a description of changes to training facilities or equipment since their last application was approved. This description should only include changes that would adversely affect the ability of students to learn. An example of such a change would be the loss of facilities to be used for hands-on instruction.

In order to further improve the quality of instruction, the Agency is exploring the possibility of providing pass/fail data from the third-party certification exam to training providers for their students. This information can be used by the provider to adjust their curriculum or instruction over time to maintain an acceptable (as determined by the provider) pass rate.

VI. Response to Comments on the Training and Certification of Individuals

Today's final rule recognizes five work disciplines: inspector, risk assessor, supervisor, abatement worker, and project designer. Training requirements and certification procedures for individuals working within these disciplines are established under § 745.226 of this rule. These include specific training, education and/or experience requirements and, for the inspector, risk assessor and supervisor disciplines, passage of a certification examination.

In response to comments, the Agency has simplified the titles for some of the work disciplines: the "inspector technician" is now called the "inspector"; the "inspector/risk assessor" is simply the "risk assessor"; and the "project designer/planner" is now the "project designer."

Under today's final rule, certified individuals may only perform lead-based paint activities in the following work disciplines:

Certified inspectors may perform inspection and abatement clearance activities as described in § 745.227(b) and (e)(8) and (e)(9);

Certified risk assessors may perform inspection, abatement clearance, lead-hazard screen or risk assessment activities, as described in § 745.227(b), (c), (d), and (e)(8) and (e)(9); and

Certified supervisors, abatement workers and project designers may perform abatement activities as described in § 745.227(e).

The final rule also does not limit or define the circumstances under which a project designer must be used. In the proposal, the Agency would have required the use of a project designer on all abatement projects of 10 residential dwellings or more. The Agency is concerned that such a requirement would be too inflexible and would not account for the varying complexity of abatement projects. The Agency did not find compelling support among commenters for this provision, and it has been eliminated. The Agency will provide training and certification for individuals who seek to offer abatement project design services, but it is the building owner who must decide if a project designer is needed on a particular project.

Another change to the final rule is the extension of the recertification interval from the 3 years proposed to 5 years, for individuals who have passed a proficiency test as part of their training. (See the discussion of proficiency training in Unit V. of this preamble). The rationale for this change is that such an individual will have demonstrated a high level of proficiency in the field in which they are certified, and thus it is presumed that they would require less frequent re-training.

Comments on the training and certification requirements for individuals working in the lead-based paint activities field focused on two key areas: the applicability of specific education and experience prerequisites as a part of the certification process; and the use of an examination in the certification process.

A. Training, Education and/or Experience Requirements

In general, commenters agreed with the proposed rule's five designated work disciplines and the lead-based paint activities associated with each, with some minor exceptions. A key issue raised by commenters, however, was the Agency's establishment of specific education and/or experience requirements.

Although the Agency neither proposed nor requested comment specifically on the possibility of exempting any industry or group of professionals from either part or all of its proposed training and certification requirements, several requests were received for such exemptions. Commenters submitted requests for some type of exemption for the following professions, among others: certified industrial hygienists, professional engineers, licensed architects, toxicologists, code enforcement officials, safety professionals, nurses, social workers and environmental professionals, and "experienced" State and local health officials.

Among the comments in support of exemptions, proposals ranged from blanket exemptions to, more commonly, various forms of partial exemptions. At least one commenter provided an alternative training course deemed more suitable to its members than the course proposed by EPA. This commenter also requested that the Agency recognize various levels of competency among the members of its organization, and suggested a tiered approach for exempting individuals from particular training requirements to address those levels of competency.

Although most of the commenters were seeking an exemption from the training and certification requirements for the risk assessor discipline, other similar requests were sought for the

supervisor, project designer and inspector disciplines.

Commenters representing various trade organizations based their reasons for seeking a training exemption on the level of education and/or experience their professional members already possess. In some instances, commenters also referenced an existing certification process that their members must undergo and implied that this certification process equaled or exceeded the certification process proposed by the Agency for lead-based paint professionals.

In general, the Agency agrees that the basic work experience and/or educational requirements of many nationally recognized certification programs either meet or exceed the experience and/or educational prerequisites contained in today's final rule under § 745.226(b) and (c). Several of these certification programs are covered by § 745.226(b)(1)(iii)(B)(3) of the rule, including programs sponsored by the American Board of Industrial Hygiene, the National Society of Professional Engineers and the Board of Certified Safety Professionals. Additionally, members of other organizations who possess the minimum work experience and/or educational requirements contained in § 745.226(b) or (c) also may qualify to become certified under today's final rule.

However, the Agency disagrees that work experience and/or educational prerequisites alone ought to be sufficient for the purposes of certifying individuals to conduct lead-based paint activities. Further, the Agency does not believe that the certification programs identified by commenters adequately address and specifically provide training in the identification, evaluation and abatement of lead-based paint and its associated hazards. Notably, none of the commenters provided the Agency with evidence of a currently available training course and/or module that expressly addresses lead-based paint activities as part of their professional certification process. Furthermore, commenters did not present evidence that their certification programs included hands-on instruction in the conduct of lead-based paint activities, which is a critical element of the training courses in today's final rule.

Therefore, although the certification requirements contained in § 745.226(b) and (c) recognize a broad range of work experiences and educational backgrounds as the first step in qualifying to become an inspector, risk assessor, supervisor, project designer or abatement worker, the final rule does not provide for any training exemptions. A primary reason is that the lead-based paint activities field is a new field, and that a majority of the individuals entering it—despite their expertise in similar fields—may not possess either direct experience, or an education that has focused on the identification and elimination of lead-based paint hazards. Consequently, the Agency believes that, in most cases, individuals entering the lead-based paint activities field will need specialized training. The Agency is willing to work with professional organizations and other groups that want to develop training courses for their members that meet EPA's accreditation requirements.

However, the Agency is aware that there are individuals and groups who have been working in the lead-based paint activities field prior to the promulgation of today's final rule. These individuals need to reference § 745.226(d) of the final rule which contains the Agency's criteria for recognizing the work experience, education and training, or on-the-job training that individuals may have received prior to the effective date of § 745.225.

If an individual determines that he or she meets the requirements contained in § 745.226(d), the individual may apply for certification under the reduced set of requirements and within the limitations contained in that section. Under these requirements, qualified individuals are required to successfully complete a refresher training course specific to the certification they are seeking, and if required under § 745.226(b), to pass a certification examination.

In addition to the broad issue of exemptions, comments also were received on various educational and experience requirements specific to the inspector, risk assessor and supervisor disciplines. Under the proposed rule, the Agency had opted not to impose educational and experience requirements for either the abatement worker or project designer. This was due primarily to language in Title X, section 1004(3)(B)'s definition of "certified contractor" as it pertains to these two disciplines.

However, based on overwhelming support among commenters, today's final rule adds educational and experience requirements for the project designers, though not for workers. These requirements are contained in § 745.226(c)(1)(ii)(B), and include either: (1) A bachelor's degree in engineering, architecture, or a related profession and 1 year of experience in building construction and design or a related field; or (2) 4 years of experience in building construction and design or a related field.

The basis for this requirement is EPA's belief, as reflected by a majority of commenters, that a project designer should have significant work experience, or a professional degree and some experience, in building design, or a related field, such as architecture or civil engineering.

Although the support was not nearly as broad or consistent, commenters also asked for modifications to the education and experience requirements for the inspector and risk assessor disciplines. Specifically, some commenters suggested that the Agency require that an inspector possess at least a high school diploma or equivalent to obtain certification. The Agency declined to include this requirement as a part of the certification process for inspectors, in part, based on its desire to provide individuals with an entry level position into the lead-based paint activities field. In response to comments that a high school degree or equivalent is needed to ensure a minimum level of competency among inspectors, the Agency believes that its training requirements and the certification examination will ensure an acceptable level of competency.

In the case of education and/or experience requirements for risk assessors, the proposed rule has been modified at § 745.226(b)(1)(iii)(B) to clarify the various mixes of education and experience that are acceptable for certification as a risk assessor. As discussed in the proposed rule, the educational and experience requirements for risk assessors are extremely important, given the pivotal role of a risk assessor in evaluating and presenting options to reduce lead-based paint hazards. The certified risk assessor must be qualified to make a competent, and rational assessment of the location and severity of any lead-based paint hazards. Based on that role, the Agency has developed work experience and/or educational prerequisites, which in combination with the training contained in § 745.225(d)(1) and (2) and the work practice standards contained in § 745.227(b), (c), (d) and (e), will enable the risk assessor to identify risks associated with lead-based paint hazards and to develop options to eliminate those hazards.

These credentials are very similar to those contained in the proposed rule with the exception that certified industrial hygienists, professional engineers, registered architects and other professionals listed under § 745.226(b)(1)(iii)(B)(3) are not required to possess 1 year of experience before becoming trained as risk assessors. The

decision to eliminate the 1 year of experience was based on the Agency's review of comments and the fact that many professional certification programs already incorporate various work experience prerequisites, which in some cases are comparable to the prerequisites listed in the proposed rule.

For example, to register as a professional engineer, an individual is required to possess a 4–year degree, and 4 years of progressive experience on engineering projects. The program for certified safety professionals also includes a 4–year degree and the 4–year work experience requirement.

Furthermore, the Agency notes that the academic training of these professionals also may cover subjects relating to building design, construction, environmental remediation and other areas relevant to lead-based activities.

The Agency also notes that it does not necessarily view the alternative work experience and/or educational prerequisites listed under § 745.226(b)(1)(iii)(B) for risk assessors; § 745.226(b)(1)(iii)(C) for supervisors; and § 745.226(c)(1)(ii)(B) for project designers as necessarily equivalent. Rather, as was the case in establishing experience and/or educational prerequisites for training program managers and principal instructors, the Agency's intention is to recognize a broad range of relevant qualifications that individuals entering the lead-based paint activities field are likely to possess.

For example, the experience and education of a certified industrial hygienist who has worked in the chemical industry may be very different from that of a professional engineer who has worked in building construction. However, the Agency believes that both these individuals can be trained as risk assessors.

B. Passage of the Certification Examination

In addition to training requirements and educational and experience requirements, individuals seeking to become certified as inspectors, risk assessors and supervisors are required to pass a certification examination, in addition to a course examination. The purpose of the certification examination is twofold.

One reason for the examination is to ensure that each individual certified under today's regulations will possess a minimum, acceptable level of knowledge and understanding of the tasks and responsibilities associated with the relevant work discipline. Other major functions of the certification examination are to provide a universal tool to measure an individual's knowledge, and to encourage States or Tribes to enter reciprocal certification arrangements with other States or Tribes.

Comments on the utility of a certification examination were generally supportive. Commenters understood the function of the examination and agreed to it in principle. Nonetheless, commenters, particularly State commenters, stressed that EPA incorporate security and quality control measures to ensure the integrity of the examination. Additionally, States indicated that they did not necessarily want to adopt EPA's certification examination, but might want to develop their own examination or use the EPA examination and add a State specific component.

In response, outside the regulatory framework of this rule, the Agency has been working closely with the States to develop a certification examination. In general, the goal of the certification examination process is to give each State the flexibility it desires to fashion its certification program, while at the same time ensure a consistent national level of competence in the lead-based paint activities workforce. As currently designed, the exam will include provisions to maintain the security of the item bank of questions.

VII. Framework for Work Practice Standards for Conducting Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities

A. Introduction

Section 745.227 establishes standards for conducting three lead-based paint activities: inspection, risk assessment and abatement. In addition, § 745.227 provides requirements for conducting three related tasks that may be performed as either single tasks or as a part of an inspection, risk assessment or abatement. These three tasks are: a lead hazard screen, laboratory analysis, and composite dust sampling. Section 745.227 also establishes certain recordkeeping requirements. This section of the rule also establishes the dates by which compliance with these standards and procedures is required.

The standards and procedures for conducting the lead-based paint activities contained in § 745.227 are being issued under authority of TSCA section 402(a), which directs EPA to issue such standards, taking into account reliability, effectiveness and safety.

B. Scope and Applicability

Under today's final rule, the standards for lead-based paint activities contained in § 745.227 apply only in target housing and child-occupied facilities. Standards for lead-based paint activities conducted in steel structures and public and commercial buildings, which had been proposed on September 2, 1994, will be addressed after further Agency review. A discussion of the Agency's decision to address steel structures and public and commercial buildings outside this rulemaking is presented in Unit II.A. of this preamble.

Another important feature of the standards contained in § 745.227 is that they do not mandate circumstances under which any particular lead-based paint activity must be performed. Instead the decision to, for example conduct an inspection, is left to the building owner.

Additionally, the Agency is preparing a rule under TSCA section 403 that will identify conditions of lead-based paint and lead levels and conditions in residential soil and dust that would result in a hazard to building occupants. Although the TSCA section 403 rule has not yet been proposed, Agency guidance on this subject was issued July 14, 1994, and is discussed in detail in Unit IV. of this preamble. The section 403 Guidance also includes recommendations on actions that can be taken in response to conditions of lead-based paint and lead levels and conditions in residential soil and dust.

Until the final section 403 rule is promulgated, the Agency recommends that individuals and firms refer to the section 403 Guidance for assistance in identifying the presence of a lead-based paint hazard and deciding whether to conduct lead-based paint activities.

The primary purpose of the standards in today's final rule is to provide certified individuals and firms with a set of minimum requirements to be followed when conducting inspection, risk assessment or abatement activities. These requirements are primarily procedural in nature: for inspection, risk assessment and abatement activities, the standards specify the steps that EPA believes must be taken to conduct those activities safely, effectively and reliably. For abatement activities, the standards also place restrictions on certain techniques used to eliminate lead-based paint.

C. Use of Guidance and Recordkeeping Requirements

Today's final rule does not prescribe detailed work practices that should be followed for each unique situation in

which lead-based paint activities may be conducted. For that level of detail, individuals should consult Federal and State guidance that provides specific instruction on how to conduct inspection, risk assessment and abatement activities. These guidance documents include: the U.S. Department of Housing and Urban Development's Guidelines for the Control of Lead-Based Paint Hazards in Housing (HUD Guidelines) (Ref. 6), the section 403 Guidance, EPA's *Residential Sampling for Lead: Protocols for Dust and Soil Sampling* (Ref. 7), and any additional guidance issued by States or Indian Tribes that have been authorized by EPA under § 745.324 of this rule. While not regulatory requirements, these documents are recommended by the Agency because they provide reliable and effective information on this subject. Additionally, training courses that have been accredited by EPA or an EPA-authorized State or Tribe will provide detailed instruction on inspection, risk assessment and abatement standards and methodologies.

To complement the existing guidance documents, the Agency is currently preparing a technical guidance document as a companion to this rule. The Agency will distribute this guidance document to accredited training providers, the lead-based paint activities contracting community, and State and local governments, prior to the date that compliance with § 745.225 of this rule is required.

In its decision to recommend guidance as an adjunct to the requirements at § 745.227, the Agency carefully considered several factors, including enforcement issues and comments received from the public on this approach.

With regard to enforcement, many of the work practice standards contained in § 745.227 of today's final rule, such as sampling methodologies and visual inspection techniques, refer to guidance. As a result, the Agency recognizes that there are questions about the extent to which it will be able to take an enforcement action against individuals who choose not to use the various guidance recommended by EPA. Nonetheless, the Agency has many reasons for deciding to reference and develop guidance as a supplement to this rule, rather than to promulgate rigid work practice standards.

The September 2, 1994 proposal specifically requested comments on the use of guidance as a supplement to the rule's basic regulatory requirements. In general, the majority of commenters support the use of guidance as a supplement to the regulatory requirements contained in § 745.227. In some cases, commenters directly expressed their support, whereas in other cases, commenters expressed neither support nor opposition. Overall, the Agency believes that commenters accepted its proposed approach of referring to guidance.

The Agency believes there are several reasons to recommend guidance rather than to establish detailed national work practice standards for the purposes of providing instruction on how to conduct specific lead-based paint activities.

First, as discussed in the September 1994 proposed rule, the Agency drew from a large body of existing information and research, and the input from a broad range of individuals and groups, to develop its proposed regulatory standards for lead-based paint activities. Based on that information and input, the standards proposed in September included strict reporting requirements and documentation of the quality control measures and methodologies employed when conducting inspection, risk assessment and abatement activities. These reporting and documentation requirements remain a critical component of the standards established by today's final rule. In combination with the rule's basic work practice standards, training, certification and accreditation requirements, the reporting/documentation activities will help to ensure the effectiveness of the standards and facilitate the use of guidance.

A second reason for relying on non-regulatory guidance instead of rule-based standards is the number of differences that can be found in the structure, design and occupant use patterns of the residential dwellings and child-occupied facilities covered by this rule. For example, under the standards for conducting a risk assessment at § 745.227(d)(4), a risk assessor is required to collect dust samples in rooms where children aged 6 years and under are most likely to come into contact with dust. The rule does not prescribe precisely which rooms or how many samples to collect, because the risk assessor needs to consider site-specific variables to determine which rooms should be sampled and the number of samples that should be taken from each room. These variables include: the size and number of rooms in the building; interior design elements in a building and differences in designated play areas for a child; the location of windows and doors; the condition of door frames, window troughs and stools; and occupant use patterns.

As a specific example, in a small residential dwelling, a child may not have a separate playroom, but may play in selected areas of one room or more, such as a corner in a living room or dining room, or may have a bedroom that doubles as a playroom. On the other hand, in a large residential dwelling, a child may have a separate playroom and bedroom, and certain areas in a living room or family room for play activity. Furthermore, a child's pattern of use in a residential dwelling can vary considerably, and that pattern may only be possible to determine through an interview with a guardian.

Based on these and other variables that may be encountered when conducting a risk assessment, inspection or abatement, the Agency believes that to try to anticipate and attempt to list all circumstances that may be encountered would make the regulation overly prescriptive and rigid. However, by establishing minimum requirements and basic procedures for conducting inspection, risk assessment and abatement activities, the Agency is setting a safe, reliable and effective baseline of steps for certified individuals and firms to follow to make sound decisions based on site-specific conditions.

A third reason for the Agency's decision to avoid being overly prescriptive is the state of technology within the lead-based paint activities field. Although there has been progress in the development of new technologies to support specific lead-based paint identification techniques and abatement methods, the Agency recognizes that the field is advancing and that the technologies and methods that will help define it are still evolving.

Consequently, the standards contained in today's final rule do not specify that certain technologies or methods be utilized for sampling and analysis. Additionally, the rule does not prescribe any specific methods or technologies for conducting an abatement, although it does restrict certain work practices known to pose risks to building occupants, workers and the environment.

As had been proposed, today's final rule relies on the use of documented methodologies that incorporate adequate quality control measures. These methodologies and measures are available in existing Federal and State guidance documents, and will be taught at accredited training programs.

Although not overly detailed or prescriptive, EPA believes that the work practice standards contained in today's

final rule under § 745.227 provide a baseline, which in combination with the training, certification and accreditation requirements contained in §§ 745.225 and 745.226, will ensure that lead-based paint activities are conducted reliably, safely and effectively.

VIII. Response to Comments on Work Practice Standards for Conducting Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities

A. Conflict of Interest

In its September 2, 1994 proposal, EPA requested comment on whether to preclude individuals or firms conducting abatement activities from performing inspection and risk assessment activities, and from performing clearance procedures following an abatement. Although many public commenters supported a requirement that inspection, risk assessment and clearance procedures be conducted by individuals and firms independent of the individuals and firms conducting abatements, today's final rule does not include such a requirement.

The Agency agrees with other commenters—those who did not support a conflict-of-interest requirement—that the potential convenience and cost savings of hiring one firm, as opposed to two or three firms, should not be denied to property owners. The Agency also notes that there may be instances in which, due to a regional scarcity of lead-based paint professionals, it may be cost prohibitive or logistically difficult for a building owner to hire two different companies.

Nonetheless, the Agency believes that parties involved in lead-based paint activities should avoid situations of potential conflict of interest. Through various public education and outreach programs, sponsored by both public and private organizations including EPA, the Agency believes that over time, the public's awareness and understanding of the options available for identifying and managing lead-based paint hazards will improve. With this knowledge, property owners and building occupants will be able to determine the value of hiring more than one firm to assist in evaluating, controlling or eliminating lead-based paint hazards.

Furthermore, to assist building owners and other individuals or firms that may contract for the services of a lead-based paint contractor, EPA recommends that inspectors, risk assessors and other lead-based paint activities contractors disclose any potential conflicting financial interest in the reports that they prepare pursuant to § 745.227(h).

B. Inspection

The objective of an inspection is to determine, and then report on, the existence of lead-based paint through a surface-by-surface investigation of a residential dwelling or child-occupied facility. As such, an inspection involves identifying the presence of lead in paint. An inspection does not include taking dust or soil samples. An inspection must be conducted by either a certified inspector or a certified risk assessor, and must include the provision of a report explaining the results of the investigation.

The inspection standards contained in § 745.227(b) reflect the Agency's decision not to provide detailed regulatory requirements on how to perform specific lead-based paint identification tasks, such as taking a paint chip sample or using an X-ray fluorescence (XRF) device. In the final rule, the Agency also has removed specific requirements to use the HUD Guidelines when collecting paint chip samples or when using an XRF device to test for the presence of lead-based paint.

Instead, the Agency requires that a lead-based paint inspection be conducted using documented methodologies and adequate quality control measures. These documented methodologies are defined as methods or protocols used to sample for the presence of lead in paint, dust, and soil. Documented methodologies that are appropriate for the purposes of this section may be found in: (1) The HUD Guidelines; the EPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil (60 FR 47248); the EPA's *Residential Sampling for Lead: Protocols for Dust and Soil Sampling* and other EPA sampling guidance; and (2) Regulations, guidance, methods or protocols issued by States and Indian Tribes that have been authorized under § 745.324. Additionally these methodologies will be included in EPA's technical guidance on lead-based paint activities.

Although commenters generally supported this approach, at least three responses suggested that the Agency provide detailed regulations for lead-based paint testing. However, one of these commenters indicated that guidance may be an acceptable approach for establishing testing protocols. These commenters were concerned about the enforcement issues associated with the rule's dependence on documented methodologies, which to date have only been issued by HUD, EPA and various State agencies, primarily as guidance.

However, other commenters did not object to the Agency's use of documented methodologies, provided that records are kept as part of the inspection, and that such methodologies are acknowledged as documented methodologies by EPA through future guidance or regulations. As discussed, the Agency is currently preparing a technical guidance document for conducting lead-based paint activities. Additionally, it is possible that the Agency may amend the regulation with more detailed standards in the future, if there is a need to do so.

One reason commenters suggested that the Agency not require certain inspection techniques is that such requirements often have the effect of discouraging the development of emerging or new technologies. For example, the Agency currently does not recommend that chemical test kits be used for lead-based paint testing (Ref. 8). However, EPA recognizes that at some point in the future, test kit technology is likely to be improved so that the kits can provide reliable test results. At that time, the Agency will be able to recommend chemical test kits for testing for the presence of lead in paint.

Two other key issues raised by commenters were: (1) Potential limitations of the proposed procedures for conducting an inspection, assuming that an inspection involves the investigation for lead-based paint throughout an entire residential dwelling or child-occupied facility, rather than a "partial inspection" of just one or more rooms in a residential dwelling or child-occupied facility; and (2) the standard contained in § 745.227(b)(2), which requires the testing of all components of a residential dwelling or child-occupied facility with a "distinct painting history," yet allows inspectors not to test those components determined by the inspector or risk assessor as having been replaced after 1978.

1. *Partial inspections.* The Agency recognizes that there may be a demand for lead-based paint identification services that do not involve a surface-by-surface investigation for the presence of lead-based paint throughout an entire residential dwelling or child-occupied facility. For example, a homeowner may only be interested in determining if lead is present in the paint in a child's bedroom, not necessarily the entire residential dwelling. In this instance, it is unlikely that the homeowner will want to pay for an inspection, as defined under today's regulations.

Although not required, the Agency recommends that a certified inspector or risk assessor be used in cases, such as these, where an individual or firm believes it is only necessary to conduct a "partial inspection" of a property.

More specifically, in response to commenters on this issue, the Agency believes that the definition of an inspection, which under § 745.227(b) requires that testing for lead-based paint take place throughout an entire residential dwelling or child-occupied facility, is appropriate for several reasons.

One reason is that the statutory definition of an inspection in section 401(7) of TSCA calls for a "surface-by-surface investigation to determine the presence of lead-based paint and the provision of a report explaining the results of the investigation." As discussed in the September 2, 1994 proposal, the Agency believes that an inspection is intended to provide a comprehensive inventory of all lead-based paint in a residential dwelling or child-occupied facility. As such, the Agency acknowledges, that the value of a lead-based paint inspection may appeal only to those individuals interested in getting a complete report on painted components in a residential dwelling or child-occupied facility. Although it is difficult to predict, the Agency believes that such a report may be of value to property owners or managers of large multi-family dwellings and child-occupied facilities and home buyers.

Furthermore, the Agency notes that its inspection requirements are consistent with general trends in the housing market, particularly in federally-owned housing or housing receiving federal assistance. That is, inspections are being conducted to ensure that building owners are informed of the presence of lead-based paint throughout a residential dwelling or child-occupied facility, not just one or two rooms.

Lastly, the Agency believes that by establishing requirements only for "whole house" inspections it will help ensure that the information needed to determine whether lead-based paint is present in a residential dwelling or child-occupied facility is accurately presented. Again, the Agency recognizes that an inspection, as defined under today's final rule, may not provide a value to all persons. Nonetheless, the Agency believes that by requiring that an inspection be conducted throughout a residential dwelling or child-occupied facility it will ensure that a person contracting for the inspection will obtain accurate and reliable information regarding the presence of lead-based paint throughout a residential dwelling and child-occupied facility.

2. *Distinct painting history.* On the issue of inspecting and sampling all components sharing a distinct painting history, except those components replaced after 1978, there are several points that commenters raised. First, some commenters suggested that the proposed requirement to take one sample per component in every room and one sample per exterior component with a distinct painting history was overly burdensome in that it required taking an excessive number of samples. The assumption of these commenters was that an inspection requires that each and every painted component throughout a residential dwelling had to be individually tested. The Agency would like to clarify that an inspection does not necessarily require that a large number of paint samples be taken.

To clarify this point, the Agency directs commenters to carefully review the definitions of "component" and "distinct painting history" as contained in § 745.223 of today's final rule. According to these definitions, in a room with four walls painted at the same time with the same paint, only one paint sample would need to be taken to characterize the lead content of the paint on the walls. This is because, although each wall can be considered a separate "component," the walls share the same distinct painting history. On the other hand, if there were window frames in the room that had been painted with a different paint than the walls (for example a semi-gloss instead of a flat), two samples would need to be taken, one from the walls and one from the windows. As this example demonstrates, the Agency does not believe that an inspection will involve excessive sampling.

In contrast, other commenters disagreed with these requirements for an inspection, suggesting that they would result in insufficient numbers of samples. Based on the definition of "distinct painting history," these commenters interpreted the proposal to mean that if all rooms in a residential dwelling had been painted recently with the same paint and in the same color (for example, a white latex paint), it would be possible for an inspector to take only one paint sample from the home.

In response, the Agency notes that in this case it would be clear to an inspector that trim, doors, and windows are usually painted with a different paint type. Determining the distinct paint history of such components involves not just an examination of the visible top coat, but the unique layers of paint beneath the surface. A visible examination of these paint layers is easily accomplished by making a discrete incision into the painted surface.

C. Risk Assessment Activities

TSCA section 401(16) provides that the objective of a risk assessment is to determine, and then report, the existence, nature, severity, and location of lead-based paint hazards in residential dwellings through an on-site investigation. The definition also identifies specific activities that will be employed when conducting a risk assessment, including: (1) The gathering of information regarding the age and history of the housing and occupancy by children aged 6 years and under, (2) visual inspection, (3) limited wipe sampling or other environmental sampling techniques, (4) other activity as may be appropriate, and (5) the provision of a report explaining the results of the investigation. This definition of risk assessment serves as the basis for the standards and procedures associated with a risk assessment contained in § 745.227(d).

The risk assessment procedures in today's final rule, as in the proposal, require the risk assessor to make a recommendation of lead hazard control strategies to address all lead-based paint hazards identified as a result of the risk assessment. This activity was not enumerated in the statutory definition, but was added pursuant to TSCA section 401(16), which stated that a risk assessment may include "other activities" as may be appropriate.

The Agency's reason for adding this requirement was to ensure that the individual or firm hiring or contracting for the services of a risk assessor was provided with some reliable guidance on how to respond to the results of a risk assessment.

1. *Lead hazard screen.* Pursuant to TSCA section 401(16), a risk assessment may include "other activities" as may be appropriate. Based on this language, today's final rule also includes the "lead hazard screen," as a risk assessment activity. The requirements for the screen are contained in § 745.227(c). The reason for including a lead hazard screen in the proposal and today's final rule is to, where appropriate, avoid the costs of conducting a comprehensive risk assessment, particularly in well-maintained housing and child-occupied facilities constructed after 1960, or in housing and child-occupied facilities considered unlikely to have significant lead paint, dust or soil hazards.

The Agency received two comments on the addition of a lead hazard screen

as a risk assessment activity; one commenter noted that the Agency needed to list more explicitly standards for conducting a lead hazard screen.

The commenters also agreed that the lead hazard screen should focus on determining the absence of a lead-based paint hazard, rather than the presence of such a hazard and the risks it may pose to building occupants. In response, today's final rule includes specific procedures and standards for conducting a lead hazard screen in § 745.227(c). Furthermore, because the lead hazard screen employs highly sensitive evaluation criteria and limited sampling, the Agency believes that these standards will provide the risk assessor with a basis for determining the absence of lead-based paint hazards.

If any one of the dust samples collected during a lead hazard screen contains a lead level greater than one-half of the applicable clearance level for the tested component, or if any sampled paint is found to be lead-based paint, that is an indication, but not a requirement, that the residential dwelling should undergo a full risk assessment. As discussed subsequently in this preamble, clearance levels for specific components can be found in the HUD Guidelines and in EPA's section 403 Guidance, as well as in several State guidance documents.

Clearance levels are used as the basis for determining whether a lead-based paint abatement has been successfully completed and that a residential dwelling or child-occupied facility may be re-occupied (if building occupants were relocated during an abatement). Currently, under the section 403 Guidance, clearance levels for dust also serve as the levels for determining the presence of lead-contaminated dust, which may pose a lead-based paint hazard. A standard for the lead hazard screen of one-half of the applicable clearance levels is extremely stringent. As such, the Agency believes that a dust sample containing less than that level is a reliable indicator that there are no lead-based paint hazards. The work practice standards and evaluation criteria for a lead hazard screen contained in § 745.227(c) are modeled after the HUD Guidelines recommendations for conducting a lead hazard screen.

As discussed previously in the preamble, the Agency recommends that the lead hazard screen be used primarily in well-maintained homes constructed after 1960. According to HUD, it is estimated that approximately 37 million privately owned homes and 428,000 public housing units, or roughly 90 percent of the nation's housing stock built prior to 1960, contain lead-based paint. Generally, if maintenance has been deferred on these homes, there is a high probability for the presence of some deteriorated lead-based paint and/or lead-contaminated dust.

Consequently, the value and any cost savings that may be achieved by conducting a lead hazard screen in poorly maintained, pre-1960 homes, rather than a full risk assessment, may not be realized. For instance, in a pre-1960 home with several components that have deteriorated paint, in practice, just as many deteriorated paint surfaces will be tested for a lead hazard screen as for a risk assessment. However, when conducting the lead hazard screen, a risk assessor is not required to attempt to determine whether those surfaces pose a lead-based paint hazard.

In fact, homeowners and building owners may decide that a lead hazard screen would merely add time and cost to the evaluation process in properties that would more likely benefit from a risk assessment. These benefits include a comprehensive report, not only on the existence of lead-based paint hazards, but also on the nature, severity, and location of those hazards. Furthermore, the risk assessment also would provide options on how to reduce or eliminate the lead-based paint hazards.

Other standards and activities required as a part of the lead hazard screen in § 745.227(c) include: (1) The collection of background information regarding the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause lead-based paint exposure to one or more children age 6 years and under, (2) a visual inspection, (3) the sampling of components with deteriorated paint with a distinct painting history in poor condition, (4) the collection of a minimum of two composite dust samples (one for floors and one for windows), and (5) the preparation of a report on the results of the screen. Specifically, § 745.227(c) requires that in a residential dwelling two composite samples be taken—one from the floors and one from the windows in rooms where one or more children, age 6 and under, are most likely to come into contact with dust. Additionally, in multi-family dwellings and child-occupied facilities, composite dust samples are to be taken from any common areas where one or more children age 6 years and under are likely to come into contact with dust.

2. *Risk assessment.* In addition to the requirements of a lead hazard screen, the standards for a risk assessment contained in § 745.227(d)(3) also involve the collection and review of background information regarding the physical characteristics of a building, and the occupant use patterns that may pose a lead-based paint hazard to children aged 6 years and under. More than two dust samples and soil samples also may be required under § 745.227(d)(4), (5), (6) and (7), respectively. Lastly, the risk assessment report must include options for reducing and/or eliminating lead-based paint hazards.

The requirements contained in § 745.227(d) of today's final rule differ from those proposed in September 1994 in that they reflect the Agency's decision to reduce the detail and specificity of the rule. However, based on the documentation and recordkeeping requirements for a risk assessment, and the rule's training, certification and accreditation requirements, the Agency believes that the standards contained in today's final rule will promote reliable, safe and effective risk assessments.

For example, the proposed rule specified several items of information to be collected as background information during a risk assessment, including the age of the building and any additions being evaluated, copies of any previous inspection reports, and a schematic site plan of the building. In its review of the comments on the proposed rule, the Agency noted that many of these requirements would be met during the preparation of a risk assessment report. For instance, among the items to be presented in a risk assessment report, as contained in § 745.227(d)(10) are: the date of construction of the building, data collected as a result of any previous inspection or other analyses available to the risk assessor, and the specific locations of any identified lead-based paint hazards or potential hazards.

In eliminating specific instructions regarding the background information to be collected, the Agency believes that the standards for conducting a risk assessment have been simplified without diminishing the reliability, safety, and effectiveness of those standards. This is because today's final rule has eliminated the duplicative reporting requirements included in the September 2, 1994 proposal by requiring that the information only be contained in the risk assessment report.

In addition to these changes, the Agency has slightly modified § 745.227(d)(10)(xviii), which requires a risk assessor to provide options for eliminating and/or reducing lead-based paint hazards in the risk assessment report. Under the proposed rule, the risk assessor would have been required to provide not only options, but to

recommend one option over another and to include a rationale or justification for his or her selected option. The final rule no longer requires the risk assessor to recommend one option over another, provided the recommended options are all presented in the risk assessment report.

These changes were largely based on comments urging the Agency to allow the individual or firm contracting for the risk assessment to select from the options presented in the report. Although the Agency does not necessarily believe that the proposed requirements would have forced a building owner to select the option recommended by a risk assessor, the Agency is willing to provide building owners with more flexibility in reviewing risk assessment reports and selecting among remediation options.

In response to comments on the latitude a risk assessor is given in determining dust sampling locations and the extent of paint deterioration, the Agency believes, as discussed in Unit VI.A. of this preamble, that because the risk assessor will be a trained specialist equipped with the requisite professional judgement needed to evaluate lead-based paint hazards, added specificity is unnecessary in the rule. The Agency also stresses that due to major differences in the structure, design and condition, and occupant use patterns of various buildings, it is best not to identify specific room locations, e.g., kitchen, playroom, bedroom, for the purposes of sampling dust. Instead, the regulations in § 745.227(d)(4), (d)(5), and (d)(6) require that dust samples be collected in rooms and areas where young children are most likely to come into contact with dust.

Similarly, the final rule clarifies that only deteriorated paint with a distinct paint history found to be in poor condition shall be sampled for the presence of lead. "Paint in poor condition" is defined in today's final rule as more than 10 square feet of deteriorated paint on exterior components with large surface areas; or more than 2 square feet of deteriorated paint on interior components with large surface areas (e.g., walls, ceilings, floors, doors); or interior or exterior components with small surface areas (window sills, baseboards, soffits, trim) on which more than 10 percent of the total surface area of the component is deteriorated. This determination is to be made by the risk assessor based on a documented methodology such as the HUD Guidelines.

As discussed earlier in Unit VII.C. of this preamble, such locations include the playrooms and bedrooms of children, kitchens, and living rooms, as well as common areas associated with a residential dwelling or child-occupied facility.

The Agency also reiterates that detailed instruction on where and how to sample dust is included in the HUD Guidelines, existing EPA guidance and various State regulations and guidance documents, and that these instructions will be taught in accredited training programs and included in future Agency guidance.

Lastly, the Agency has clarified the standards for collecting soil samples contained in § 745.227(d)(7) such that samples need only to be taken from exterior play areas and dripline/foundation areas where bare soil is present. This requirement is in keeping with the statutory definition of lead-contaminated soil, which basically is the same definition used in today's final rule. As defined in § 745.223, lead-contaminated soil means bare soil on residential real property and on the property of a child-occupied facility that contains lead at or in excess of levels determined to be hazardous as identified by the EPA Administrator pursuant to TSCA section 403. Guidance on how to collect bare soil samples is provided in EPA's *Residential Sampling for Lead: Protocols for Dust and Soil Sampling* document and the HUD Guidelines.

D. Composite Sampling

Under today's final rule, composite dust and soil sampling is expressly permitted for the purposes of conducting a lead hazard screen, risk assessment, or clearance following an abatement.

This change from the September 2, 1994 proposal is based on comments the Agency received in support of composite sampling for dust and soil, as well as limited evidence supporting the use of composite dust and soil sampling to determine the presence of lead in dust and soil. The Agency also believes that composite sampling is useful because it provides a means for "averaging" the potential for exposure to lead-based paint hazards in a residential dwelling or child-occupied facility. Furthermore, the Agency is permitting use of the technique due to laboratory cost savings generated by sampling analysis.

However, it is important that the individual who is receiving the results of a composite understand their limitations and can correctly interpret the results of a composite sample. A brief discussion of this subject can be found in this section, and a thorough discussion of this issue is contained in the HUD guidelines, and will be presented in the risk assessor and supervisor course.

Specific instruction on the taking of composite dust and soil samples is provided in the HUD Guidelines. The technique essentially involves combining several subsamples from the same types of components into one sample for analysis. A composite dust sample is different from a single-surface sample because it combines at least two dust samples from more than one sampling area into one sample.

Pursuant to § 745.227(g) of today's final rule, composite dust samples must consist of at least two subsamples. At this time the Agency recommends that a composite sample consist of no more than four subsamples, unless the laboratory contracted to analyze the composite sample agrees to accept a sample consisting of more than four subsamples. This recommendation is based on current limitations in the laboratory analysis of composite samples consisting of more than four subsamples (i.e., using available technology, composite samples that combine more than four subsamples are difficult to properly analyze). However, because some EPA-recognized laboratories are acquiring the ability to analyze composite samples consisting of more than four subsamples, the final rule does not explicitly restrict a composite sample from containing more than four subsamples.

Pursuant to § 745.227(g) of today's final rule, composite dust samples shall not consist of subsamples from more than one type of component. For example, subsamples from four uncarpeted floors from four rooms may be combined into one composite sample. However, in these same four rooms, the rule prohibits two subsamples from windows in two of the rooms from being composited with two subsamples from floors in the other two rooms.

This restriction is due to the varying levels of lead that may be present on different components, and the potential hazard that a component may present. For example, dust samples from floors generally tend to indicate a lower level of contamination, while the frequency of contamination is generally higher in windows. Consequently, the interpretation of the results from a composite sample consisting of subsamples from different component would not adequately characterize the location of the hazard.

One of the primary benefits derived from composite sampling is lower sampling costs due to fewer laboratory analyses. Lead levels generally vary

significantly from one component to another, and a single surface sample from one component alone (i.e. from one area of a floor in a room to another of the same floor) may not represent the potential for exposure. Composite sampling provides a means to determine potential exposures to lead-based paint hazards by obtaining a wide cross-section of possible exposure pathways.

However, composite sampling may yield laboratory results that are not as informative as single-surface sampling. For example, dust samples from the floors of three rooms might be composited where only one of the floors contains lead-contaminated dust higher than the clearance level contained in the section 403 Guidance for uncarpeted floors of 100 µg/ft2. This might cause the composited sample to fail clearance. On the other hand, if three single-surface floor dust samples were taken for clearance testing, the laboratory analyses would have precisely indicated which one of the three rooms exceeded the clearance level, and the inspector or risk assessor would know exactly which room needed to be recleaned and retested.

Because of these limitations, it is imperative that a risk assessor, inspector, or supervisor understands and correctly interprets composite samples.

E. Abatement

As discussed in Unit III.B. of this preamble, the issue that received the most comment associated with abatement was the proposed definition of abatement. The Agency's response to those comments is discussed in that unit of the preamble.

In addition to these comments, other comments on a number of the work practice standards, procedures and restrictions proposed for various abatement activities were received. These comments principally addressed the following issues: (1) "Prohibited" or restricted abatement work practices; (2) encapsulation; (3) the development of a pre-abatement plan; (4) clearance requirements following both interior and exterior abatements; (5) soil abatement; and (6) management of waste from lead abatement activities.

The Agency's response to these comments and changes that have been made to the corresponding standards for abatement are discussed below.

1. "*Prohibited practices.*" In the preamble of the proposed rule, the Agency indicated that it was considering banning certain abatement work practices in target housing, due to the potential risk of lead contamination posed to workers and/or the environment. The practices singled out by the Agency included:

i. Open-flame burning of painted surfaces.

ii. Dry scraping or sanding of painted surfaces.

iii. The use of heat guns on painted surfaces for abatement without proper protection.

Additionally, the Agency specifically requested comments and/or data related to exposure to lead-contaminated dust and fumes from these and other abatement work practices.

In response, an overwhelming majority of commenters on this issue urged the Agency to expressly ban the use of open-flame burning or torching on painted surfaces in target housing and child-occupied facilities, and to specifically restrict—not necessarily to ban—the other practices listed above, to reduce the risks they pose. Furthermore, commenters also requested that the Agency set restrictions on the use of machine sanding or grinding, abrasive blasting or sandblasting, and hydroblasting and high-pressure washing techniques in target housing and child-occupied facilities. Commenters also provided a number of references to studies to document their recommendations to the Agency.

The restrictions proposed by commenters generally were consistent with the HUD Guidelines, and have been the subject of several studies which support the restrictions in today's final rule. A review of these studies has been prepared by EPA titled *A Review of Studies Addressing Lead Abatement Effectiveness* (Ref. 9).

An important point related to restricting the abatement practices contained in § 745.227(e)(6) is that the public comments supporting such restrictions were expressly directed at target housing and other buildings, such as child-occupied facilities, where young children routinely and frequently spend time. In response, the Agency stresses that the restrictions on abatement practices contained in today's final rule apply only to target housing and child-occupied facilities.

In contrast, other commenters were opposed to prohibiting or restricting similar "deleading" activities, in public and commercial buildings, superstructures and bridges.

In public and commercial buildings, superstructures and bridges, most commenters were generally satisfied with existing OSHA regulations for the purposes of protecting the health and safety of workers. Concerns were, however, voiced over the lack of cost-effective work practice alternatives to open-flame burning, machine sanding or grinding, and abrasive blasting for removing lead-based paint from public and commercial buildings, superstructures and bridges. In response to these comments, the Agency will further review options for addressing lead-based paint activities conducted in public and commercial buildings, and superstructures and bridges.

On the other hand, commenters who favored restricting certain work practices in target housing and child-occupied facilities indicated that although OSHA regulations may protect workers, they are not designed to protect building occupants, especially children aged 6 years and under, from lead-based paint hazards that may be generated during an abatement. As discussed previously, these commenters also indicated that by restricting certain work practices, rather than banning them altogether, lead-contaminated dust and fumes could be effectively controlled. Furthermore, these commenters suggested that in some instances safer work practice alternatives are available.

Based on these comments and a review of studies referenced above, today's final rule in § 745.227(e)(6) imposes certain restrictions on selected work practices when conducted during an abatement in target housing and child-occupied facilities. Today's final rule also bans the use of open flame burning and torching when conducting abatements in target housing and child-occupied facilities.

These restrictions include the operation of a heat gun at a temperature above 1100 degrees Fahrenheit, due to the release of lead dust and fumes and the potential hazards posed to building occupants, particularly children aged 6 years and under. This restriction is supported by two studies that found significant problems with lead-based paint when volatilized by heat guns and propane torches operating above this temperature. These problems included large increases in the blood lead levels of children in homes where heat guns and torches were used at temperatures in excess of 1100 degrees Fahrenheit during abatement (Refs. 11 and 12).

The rule also restricts the use of machine sanding or grinding, abrasive blasting and sandblasting as abatement work practices, unless they are conducted using a High-Efficiency Particulate Air (HEPA) exhaust control which removes particles of 0.3 microns or larger from air at 99.97 percent or greater efficiency. Although studies indicate that the effectiveness of HEPA attachments has been limited in containing dust releases in the past, commenters indicate that recent

technology has improved performance. Consequently, if HEPA attachments meet or exceed the performance standard above, the Agency believes they can serve as a tool for ensuring that abatement activities involving the use of machine sanding or grinding, abrasive blasting and sandblasting are conducted safely, reliably and effectively.

Dry scraping and sanding are permitted under today's final rule only around electrical outlets, or when treating defective paint spots totaling no more than 2 square feet in any one interior room, or totaling no more than 20 square feet on exterior surfaces. These restrictions are based on high levels of dust generated by dry scraping and sanding, and the availability of techniques, such as wet spraying or the use of a heat gun below 1100 degrees Fahrenheit, to control dust generation. Additionally the restrictions placed on dry scraping provide allowances for convenience and safety when abating relatively small defective paint spots and areas around electrical outlets.

In regard to the establishment of restrictions for hydroblasting and high-pressure washing, the Agency does not have enough data to demonstrate that these practices may pose a lead-based paint hazard in target housing or child-occupied facilities. Nor is there sufficient data to support specific restrictions on how to effectively control or limit these practices to reduce any hazards they might pose. Consequently, the rule does not establish restrictions for hydroblasting and high-pressure washing. However, the Agency recommends that controls be used to contain any debris or wastewater that may be generated when hydroblasting and high-pressure washing are employed as abatement techniques.

2. *Encapsulation.* As discussed in the September 2, 1994 proposed rule, the definition of abatement includes the phrase "permanent containment or encapsulation." This phrase is part of the statutory definition of abatement under Title IV section 401, and it has been retained as part of the abatement definition in § 745.223 of today's final rule.

In the preamble of the proposed rule, however, the Agency also pointed out that all encapsulant will degrade over time, so therefore, no encapsulant is truly permanent. Consequently, the Agency requested comment on whether to include a periodic monitoring requirement when an encapsulant is used to abate lead-based paint.

The majority of commenters generally supported some kind of monitoring requirement, but were divided as to whether EPA should regulate such a requirement given that encapsulation technologies are still evolving. Although some commenters encouraged the Agency to include specific monitoring requirements (e.g., once every 6 months, 1 year, 3 years, etc.), others suggested that the Agency develop standards for encapsulant products and/or require that manufacturers provide guarantees regarding the durability and longevity of an encapsulant product. Other commenters requested that the Agency specify who is responsible for monitoring an encapsulant—either the building owner or a third party.

In response to these and other related issues raised by commenters, today's final rule does not specify a particular monitoring requirement, nor does it establish any other specific standards for the use of encapsulants. This decision is based primarily on the development of existing encapsulant technologies and ongoing voluntary efforts within the encapsulant industry to develop performance-based standards for encapsulants.

Three American Society of Testing and Materials (ASTM) standards, E 1795 ("Standard Specification for Non-Reinforced Liquid Coating Encapsulation Products for Leaded Paint in Buildings"), E 1797 ("Standard Specification for Reinforced Liquid Coating Encapsulation Products for Leaded Paint in Buildings"), and E 1796 ("Standard Guide for Selection and Use of Liquid Coating Encapsulation Products for Leaded Paint in Buildings") were approved in March 1996. The three standards were developed by a voluntary consensus-building process that included representatives from EPA, other Federal agencies, and a wide range of interests across the lead abatement industry. The standards cover what is considered by ASTM to be the minimum set of material performance requirements for these products, as well as guidance on how to select, apply, evaluate, and maintain the products under normal use conditions. The standards acknowledge that users (e.g., risk assessors, abatement supervisors) should evaluate their individual situation to assess whether additional requirements are needed to adequately protect the surface.

EPA endorses these standards and recommends their use, but has chosen not to require them as part of the work practice standards in this rule. EPA is confident that most States and local jurisdictions will evaluate these standards for their appropriateness for the conditions under which they will be expected to perform and specify additional performance requirements as needed. The standards will also be discussed in training course materials for risk assessors and abatement workers and supervisors.

3. *Pre-abatement plan.* In the proposed rule, the standards for conducting an abatement would have required the development of a "pre-abatement plan" for all abatement projects. Under the proposed rule the pre-abatement plan would have included the following: (1) Information regarding measures taken to protect workers; (2) measures taken to comply with existing Federal, State and local environmental regulations; and (3) an occupant protection plan. In its review of the comments on the pre-abatement plan, and of the occupant protection plan itself, the Agency has decided that the primary purpose of the occupant protection plan is to help ensure that *building occupants* are protected from potential lead-based paint exposures during an abatement.

This determination is based on comments that suggested the Agency minimize any overlap with existing Federal regulations. For example, if an abatement project resulted in the generation of a hazardous waste, commenters noted that the contractor and/or building owner may already be subject to certain reporting requirements under the Resource Conservation and Recovery Act (RCRA). These commenters argued that it would be duplicative and burdensome to resubmit its RCRA reports to EPA under a TSCA law. A similar rationale applies to the proposed provision of information regarding measures taken to protect workers. This proposed requirement would be duplicative of OSHA provisions to protect workers.

The Agency agrees with commenters on this point, and has removed parts 1 and 2 of the pre-abatement plan from today's rulemaking. Consequently, the only remaining part of the pre-abatement plan is the "occupant protection plan," which in today's final rule replaces the proposed pre-abatement plan.

4. *Clearance procedures.* Comments received on the clearance procedures contained in the proposed rule indicated a need to clarify the dust sampling requirements associated with clearance. Commenters were confused regarding the number of dust samples that needed to be collected and the locations within a residential dwelling or child-occupied facility that needed to be sampled as a part of the clearance procedures contained in the September 2, 1994 proposal.

Several commenters also suggested that the proposed rule required too many samples, which they believed

would add to the costs of an abatement without necessarily providing better information regarding the efficacy of an abatement. They urged the Agency to reduce the number of samples to be taken for the purposes of clearance following an abatement; some commenters suggested that composite sampling be employed to reduce the required number of clearance samples. And virtually all commenters agreed that the proposed 24-hour waiting period was too long to wait to conduct clearance sampling following an abatement.

In response to these comments, the clearance procedures contained in today's final rule have been presented more clearly and concisely. For example, commenters indicated that in the proposed rule it was not clear whether additional dust clearance samples were required following an abatement project that used containment, as opposed to an abatement that did not use containment. In today's final rule, § 745.227(e)(8)(v)(A) clearly indicates the number of dust samples that are to be taken following an abatement that employs containment. These include one sample from the floor, and one from the window (if available) in the rooms within the containment area. Additionally, the rule requires that one sample will be taken from the floor outside the containment area.

On the other hand, § 745.227(e)(8)(v)(B) clarifies that, if containment was not employed as a part of the abatement, two dust samples will be taken from rooms in the residential dwelling or child-occupied facility where the abatement was conducted.

The final rule also limits the number of rooms that are required to be sampled as part of clearance to four. Clearance inspectors are free to sample more than four rooms, but todays rule establishes a minimum of four rooms that must be sampled. The rooms shall be selected according to documented methodologies. The current HUD guidelines, one such documented methodology, recommend that the rooms be selected based on where most of the dust-generating work was done.

The rationale for this change is that given similar abatement techniques, and more importantly, similar post-abatement cleanup, if the four selected rooms pass clearance, then the other rooms will also likely pass.

Based on comments, the final rule, under § 745.227(e)(8)(iii), now requires a minimum 1-hour waiting period following the completion of post-abatement clean-up activities prior to the collection of dust samples for the purposes of clearance. The 1-hour waiting period is consistent with the HUD Guidelines and other State regulations and guidance on the appropriate amount of time needed prior to conducting clearance following an abatement. Supporting rationale in the HUD Guidelines have shown that 1-hour is sufficient time for airborne lead particles to fall on to horizontal surfaces and be collected (Ref. 12).

In regard to a reduction in the number of samples that will be taken as a part of clearance following an abatement, the final rule permits the use of composite sampling. Composite sampling should assist in reducing the number of samples that need to be taken as a part of clearance. As discussed in this Unit of the preamble in paragraph D, the Agency believes that composite sampling can be a reliable, safe and effective alternative to single surface sampling.

Sampling requirements also have been reduced when clearance is conducted following an exterior abatement. Again, several comments were received on clearance requirements following an exterior abatement suggesting that the proposed rule required too many samples. For example, the proposed rule would have required soil samples to be taken prior to an exterior abatement project, so that any lead levels found in the pre-abatement samples could be compared with post-abatement soil samples to determine if there was any contamination resulting from the exterior abatement.

The Agency agrees with commenters on this point, and has removed the requirement to take pre-abatement soil samples and the requirement to take soil samples following an exterior abatement. Rather, the final rule requires a visual inspection to determine the presence of any paint chips along the dripline or next to the foundation below any exterior surface abated. If paint chips are present, they must be removed and properly disposed. The Agency is allowing the individual or firm conducting the exterior abatement to determine the need to conduct any soil sampling, based on liability concerns the individual or firm may have based on potential claims that the actions of the abatement workers/supervisors caused soil contamination.

In general, the Agency believes that today's final rule more clearly articulates the number of samples that must be taken as a part of clearance testing following either an interior or exterior abatement. Through composite sampling, the rule also permits a reduction in the number of analyses to be done. In addition, § 745.227(f) of today's final rule requires that all samples must be sent to EPA-recognized laboratories, which will help ensure the reliability of sampling results.

Notably, under § 745.223 the final rule provides a definition for clearance levels and includes references to the section 403 Guidance, the HUD Guidelines and other guidance for specific numeric values. As discussed in the September 2, 1994 proposed rule, it is possible that numeric values for clearance will be a part of the final section 403 rulemaking, depending on the comments received on this matter under the section 403 proposal. Until numeric values are established for clearance through the regulatory process, certified individuals and firms, training providers and other persons should reference the guidance documents listed in the definition of clearance levels (contained in § 745.223) for numeric limits for clearance.

5. *Soil abatement.* Commenters requested clarification on various procedures proposed for soil abatement. Included among the items raised by commenters were: clarification as to whether the proposed soil abatement procedures applied only to target housing and child-occupied facilities, or to public and commercial buildings, superstructures and bridges, as well; requests that the Agency stipulate a lead level in soil to be used to determine when soil abatement must occur; and clarification as to whether both bare and covered soil should be abated.

In response, it should be clear under today's final rule that the procedures put forward for soil abatement under § 745.227(e)(7) apply only to target housing and child-occupied facilities. Regulations for the management of lead-contaminated soil at industrial sites currently are provided under RCRA and Superfund.

On the need for a specific lead level to determine when soil abatement is needed, the Agency refers commenters to its section 403 Guidance document. In the section 403 Guidance, Agency recommendations are provided for response activities to lead-contaminated soil based on a range of lead levels. These response actions also take into account whether the contaminated area under consideration is used by children.

For example, in the section 403 Guidance, interim control activities are recommended as a means to reduce possible lead exposures if lead levels in bare soil range between 400 and 5,000 parts per million (ppm) and if the area of concern is expected to be used by children. Such areas could include

residential backyards, and day-care and school yards. Appropriate interim control activities could include planting ground cover or shrubbery to reduce exposure to bare soil, moving play equipment away from contaminated bare soil, or restricting access through posting, fencing or other actions.

As discussed in the section 403 Guidance, however, the decision on whether interim controls or an abatement action is appropriate depends on several variables. For example, although the section 403 Guidance does not recommend soil abatement until lead levels in soil exceed 5,000 ppm, it is possible that a risk assessor may recommend abatement at a lower level. For instance, in a situation in which the blood lead levels of children that use an area under consideration for abatement are high and the risk assessor has determined that the soil may be the primary source of exposure, the risk assessor would consider presenting options that include soil abatement.

As discussed throughout this preamble, the Agency does not believe it is able, at this time, to effectively identify, list and regulate all the variables that may influence decisions on how to respond to lead-based paint hazards. Furthermore, today's final rule does not provide a specific lead level in soil for use as an abatement trigger. Rather, the Agency refers decision makers in this arena to the section 403 Guidance, which also shall be taught in accredited training courses.

In terms of conducting soil abatement, comments were received that requested clarification of the definition of permanent covering. In the proposed rule, the permanent covering of contaminated soil was listed as a soil abatement option. In today's final rule, soil abatements must be conducted in one of two ways: If soil is removed, the lead-contaminated soil shall be replaced with soil that is not lead-contaminated; or if soil is not removed, the lead-contaminated soil shall be permanently covered. In response to commenters, the final rule also defines permanently covered soil as soil which has been separated from human contact by the placement of a barrier consisting of solid, relatively impermeable materials, such as pavement or concrete. Grass, mulch, and other landscaping materials are not considered permanent covering.

Commenters also requested clarification as to whether any amount of newly added soil could represent a permanent covering. In response, the Agency has concluded that at this time, there is insufficient information to determine the amount or type of soil covering that would protect human health from the risk of exposure to lead contaminated soil. However, but the Agency believes that some depth of soil of a given type may provide adequate protection. The Agency is seeking information on this subject and will address this in the section 403 regulation as part of the discussion on lead-contaminated soil.

6. *Management of waste from lead abatement activity.* Lead-based paint abatement generates different types of solid waste, including paint chips, architectural components, and contaminated clothing, which may be subject to hazardous waste treatment, storage, and disposal regulations under RCRA Subtitle C (40 CFR part 261). RCRA establishes a comprehensive Federal program for the management of solid and hazardous wastes.

The training requirements in today's final rule for workers, supervisors and project planners include training in the proper management of wastes generated during abatement activity. These requirements will encourage compliance with RCRA during the conduct of such activities.

Management of architectural component debris waste was a particular concern of some commenters on the proposed rule. Comments indicated that RCRA Subtitle C waste sampling and testing requirements are impractical for debris, and that the costs associated with managing debris as hazardous waste are impeding progress in reducing lead-based paint hazards. The Agency wishes to minimize potential regulatory impediments to conducting and financing lead-based paint abatements. Thus, EPA intends to issue a separate rulemaking specifically addressing the disposal of architectural debris waste from lead-based paint abatements. Until the Agency promulgates such a rule, the requirements of RCRA continue to apply to lead abatement waste.

One important RCRA issue is the identification of the party deemed the generator of a waste, particularly in the context of contractual relationships such as those for lead-based paint activities. RCRA defines a generator in 40 CFR 260.10 as "any person, by site, whose act or process produces hazardous waste identified or listed in [40 CFR part 261] or whose act first causes a hazardous waste to become subject to regulation." In the proposal (59 FR 45890), EPA stated that contractors for lead-based paint activities (as opposed to building owners) are the generators of abatement waste and are therefore the parties responsible for RCRA compliance. EPA received a number of comments requesting a clarification and reconsideration of this issue.

EPA wishes to clarify that the property owner and the abatement contractor are co-generators of waste from lead-based paint activities, as both parties contribute to its generation. Under co-generator status, one party might manage the disposal of the waste (for example, the building owner might request that a contractor handle this task), but both parties remain legally responsible for proper disposal of the waste and for RCRA compliance. The Agency discussed cogenerator status in more detail in an FR notice issued on October 30, 1980 (45 FR 72026).

IX. State Programs

A. Introduction

This unit contains two parts: (1) A discussion of procedures for States and eligible Indian Tribes, including eligible Alaskan Native Villages, to obtain authorization from EPA to administer and enforce (a) a lead-based paint activities program and/or (b) a pre-renovation notification program; and (2) a description of a model program that will serve as a blueprint for these State and Tribal programs.

Section 404(a) of TSCA provides that any State that seeks to administer and enforce the standards, regulations, or other requirements established under sections 402 (lead-based paint activities) or 406 (pre-renovation notification) may submit an application to the Administrator for approval of such a program. As discussed, today's final rule contains the regulations established pursuant to section 402(a). The Agency has not, at this time, promulgated final regulations under section 406. States may begin to apply for program authorization of a pre-renovation once the final section 406 regulation is promulgated.

Section 404(b) states that the Administrator may approve such an application only after finding that the State Program is at least as protective of human health and the environment as the Federal program established according to the mandates of TSCA section 402 or 406 and that it provides adequate enforcement. The procedures for submitting an application are found in § 745.324 of this regulation and are discussed in more detail below. The Agency is developing an Application Guidance Document that it will distribute, to give additional guidance on how to develop and submit an application for program authorization.

Section 404(d) directs the Agency to promulgate a model State program, which any State that seeks approval to

administer and enforce may adopt. In response to this mandate, the Agency has promulgated, at §§ 745.325, 745.326, and 745.327 minimum requirements and enforcement provisions that a State or Tribal program must have to receive authorization from the Agency to administer a lead-based paint activities program (§ 745.325) and/or a pre-renovation notification program (§ 745.326). These requirements are discussed in more detail in Unit IX.E. of this preamble.

No political subdivisions (e.g., cities, towns, counties, etc.) other than States, as defined by TSCA section 3, and Indian Tribes (see discussion in Unit IX.F. of this preamble), are eligible for authorization under this program.

B. Submission of an Application

Before developing an application for authorization, a State or Indian Tribe must publicly distribute a notice of intent to seek such authorization and provide an opportunity for a public hearing. The State or Indian Tribe is free to conduct this hearing and provide an opportunity for comment in any manner it chooses. Upon completion of the final application that reflects this public participation, the State or Indian Tribe shall submit the application to the appropriate EPA Regional Office.

As described at § 745.324(a), an application for program authorization must include the following elements: a transmittal letter from the Governor or Tribal Chairperson (or equivalent official); a summary of the State or Tribal program; a description and analysis of the program; an Attorney General's or Tribal equivalent's statement attesting to the adequacy of the State's or Indian Tribe's program authority; and copies of all applicable State or Tribal statutes, regulations, standards and other materials that provide the State or Indian Tribe with the authority to administer and enforce a lead-based paint program.

1. *Program description.* A program application must contain information, specified in § 745.324(b), that describes the program. The program description is the portion of the application that the State or Indian Tribe will use to characterize the elements of their program. The Agency will use this information to make an approval or disapproval decision on a State or Indian Tribe's application. The program description contains five distinct sections. In the first (§ 745.324(b)(1)), the State or Indian Tribe must list the name of the State or Tribal agency that will administer and enforce the program, and if there will be more than one agency administering or enforcing the program, describe the relationship between or among these agencies.

Second, the State or Indian Tribe must, in the application, demonstrate that the program meets the requirements of § 745.325 or 745.326 or both. These elements represent the minimum authorities that a State or Tribal program must have to be considered for program authorization. These elements are discussed in greater detail in Unit IX.E.1. and IX.E.2. of this preamble.

Third, the application must provide an analysis of the entire State or Tribal program that describes any dissimilarity from the Federal program in subpart L "Requirements for Lead-Based Paint Activities," or regulations developed pursuant to TSCA section 406. The analysis should address each element of a State or Tribal program: for a lead-based paint activities training and certification program, those elements found at § 745.325(a) (i.e., accreditation of training programs, certification of individuals, and work practice standards for the conduct of lead-based paint activities); and for a pre-renovation notification program, those elements found at § 745.326(a) (i.e., distribution of lead hazard information and a lead hazard information pamphlet).

The analysis must then explain why, considering these differences, the State or Tribal program is at least as protective as the respective Federal program. The Agency is inclined to give deference to a State or Indian Tribes determination that its program is sufficiently protective and appropriate for their State or Indian Tribe. The Agency will use this analysis, along with its own comparison, to evaluate the protectiveness of the State or Tribal program. This issue is discussed in more detail in Unit IX.E. of this preamble discussion.

Fourth, the State's or Indian Tribe's application must demonstrate that the program meets the requirements of § 745.327. These elements represent the enforcement elements that a program must have to receive authorization. This section of the application is discussed in more detail in Unit IX.E.3. of this preamble.

In addition to the above, the program description for an Indian Tribe must also include a map, legal description, or other information that will identify the geographical extent of the territory over which the Indian Tribe exercises its jurisdiction. The Indian Tribe shall also include a demonstration that it is: (1) Recognized by the Secretary of the Interior; (2) has an existing government exercising substantial governmental duties and powers; (3) has adequate civil regulatory jurisdiction over the subject matter and entities regulated; and (4) is reasonably expected to be capable of administering the Federal program for which it is seeking authorization.

If the Administrator has previously determined that an Indian Tribe has met these prerequisites for another EPA program authorization, then the Indian Tribe need provide only that additional information unique to its lead-based paint program. The rationale for requiring the tribe to provide this information is discussed in detail in Unit IX.F. of this preamble.

2. *Attorney General's statement.* The State or Indian Tribe must provide an assurance that the State or Indian Tribe has the legal authority necessary to administer and enforce the program. The State or Tribal Attorney General (or equivalent Tribal official) must sign this statement. (See discussion in Unit IX.F. of this preamble for specific Tribal program requirements).

3. *Public availability of application.* Section 404(b) of TSCA requires the Agency to provide notice and an opportunity for public hearing on a State or Tribal application for authorization. Accordingly, the Agency will publish in the Federal Register, a notice announcing the receipt of a State's or Tribe's application, a summary of the State or Tribal program, the location of copies of the application available for public review, and the dates and times that the application will be available for public review. Individuals may at that time submit a request to the Agency for a public hearing on the State or Tribal application. It should be noted that this opportunity for public hearing is separate and distinct from the public comment, discussed in part B. of this unit of the preamble, that the State or Indian Tribe must seek before preparing an application for program approval (§ 745.324(a)(2)).

C. State Certification

Pursuant to section 404(a), at the time of submitting an application for program authorization, a State may also certify to the Administrator that the State program meets the requirements of TSCA section 404(b)(1) and 404(b)(2).

If this certification is contained in a State application, the program is deemed authorized, until the Administrator disapproves the program's application or withdraws the program's authorization. This certification must be contained in a letter from the Governor or the Attorney General, to the Administrator, and must reference the program analysis

contained in the program description portion of the application as the basis for concluding that the State program is at least as protective as the Federal program and provides for adequate enforcement.

This provision is not available to Indian Tribes because Indian Tribes must first demonstrate to the Agency that they meet the criteria at § 745.324(b)(4) for Treatment as a State ("TAS"). Although Indian Tribes may be able to demonstrate that they have been approved for "Treatment as a State" for any other environmental program (satisfying two of the four TAS criteria), the Agency must make a separate determination that an Indian Tribe has adequate jurisdictional authority and administrative and programmatic capability regarding its lead program before it can determine that the Tribe should be treated as a State. These criteria are discussed in greater detail in Unit IX.F. of this preamble.

As stated at § 745.324(d)(3), if the application does not contain such certification, the State's program will be considered authorized only after the Administrator approves the State application.

EPA encourages both States and Indian Tribes to submit their authorization applications as soon as possible after October 28, 1996. Because the Agency anticipates needing the full 180 days to properly review and act on an application, States and Indian Tribes are strongly encouraged to submit a completed application before March 2, 1998.

D. EPA Approval

Within 180 days following receipt of a complete State or Tribal application, the Administrator will approve or disapprove the application. The Administrator will approve a program only if, after notice and opportunity for public hearing, the Administrator finds that:

(1) The program is at least as protective of human health and the environment as the Federal program contained in subpart L or in regulations developed pursuant to TSCA section 406; and

(2) The program provides adequate enforcement of the appropriate State or Tribal regulations.

The Agency will notify the State or Indian Tribe in writing of the Administrator's decision. As described in § 745.324(c), upon authorization of a State or Tribal program, it will be unlawful under TSCA section 15 and section 409, for any person to violate, fail or refuse to comply with any requirements of such a program.

The Agency believes that section 404 and the decision criteria above give it reasonably broad latitude in approving or disapproving State and Tribal programs. EPA interprets the section 404(b) standard ". . . at least as protective as . . ." to mean that a program need not be identical to, or administered in a manner identical to, the Federal program for that program to be authorized. Indeed, the Agency expects to receive applications for State and Tribal programs that will differ in some respects from the Federal program established in this rulemaking. This is unavoidable (and even desirable) given the differences that undoubtedly exist between lead-based paint problems and approaches to dealing with them at the State and Tribal level. The Agency will make every attempt to accommodate these differences while following the statutory requirement of ensuring that every State or Tribal program is at least as protective as the Federal program.

1. *Establishment of the Federal program.* If a State or Indian Tribe does not have a program authorized under this rule and in effect by the August 31, 1998, the Administrator will, by such date, establish the Federal program under subpart L, or regulations developed pursuant to TSCA section 406, as appropriate in that State or Indian Country.

2. *Withdrawal of authorization.* As required by section 404(c) of TSCA, if a State or Indian Tribe is not administering and enforcing its authorized program according to the standards, regulations, and other requirements of TSCA Title IV, including section 404(b)(1) and (b)(2), the Agency will so notify the State or Indian Tribe. If corrective action is not completed within a reasonable time, not to exceed 180 days, the Administrator shall withdraw authorization of such program and establish a Federal program pursuant to TSCA Title IV in that State or Tribal land. Procedures for withdrawal of authorization can be found in § 745.324(i).

E. Model State Program—Guidance to States and Indian Tribes; EPA Approval Criteria

TSCA section 404(d) directs the Agency to promulgate a MSP that may be adopted by any State or Indian Tribe that seeks to administer and enforce a lead-based paint activities program. As interpreted by EPA, this model is intended to serve two purposes. First, the model is intended to give States and Tribes guidance as to the contents of a program that they could develop to receive program authorization from EPA. Second, the model is also intended to provide overall guidance to States that have not, until this point, developed legislation or regulations for a training and certification or a pre-renovation notification program.

In the proposed rule, the Agency offered the entire Federal program as a model. The Agency stated that, because section 404(a) requires that an authorized State or Tribal program be at least as protective as the Federal program, a State or Tribal program seeking authorization should resemble, in significant respects, the Federal program. Therefore, the entire Federal program for lead-based paint activities was offered as a model for States and Indian Tribes to use in developing their own programs.

Many commenters, however, stated that the proposal did not articulate in sufficient detail the specific elements a program must have to be authorized by EPA. Some commenters also believed that, as written, the proposal implied that a State or Tribal program must be identical to the Federal program. The Agency did not intend to give this impression, and in developing a separate model program has attempted to clarify what is expected of a State or Tribal program applying for authorization.

Other commenters stated that the Agency should develop a model program that would dictate all requirements that must be in a State or Tribal program. These commenters expressed the belief that, because the Agency is required to evaluate the protectiveness of a State or Tribal program compared to the Federal program, the Agency should specify all elements of a State or Tribal program or require that a State or Tribe adopt the entire Federal program. Commenters believed this approach would alleviate any uncertainty regarding the interpretation of the statutory phrase ". . . at least as protective as . . ." The Agency has rejected this approach because it would not allow the flexibility that EPA believes is necessary for the effective administration of this program at the State or Tribal level.

In response to comments the Agency has modified the final rule in two significant ways. First, the Agency has developed a set of minimum programmatic elements (§§ 745.325 and 745.326 and discussed in sections 1 and 2 of this Unit of the Preamble) that a State or Tribal program must have to receive authorization from the Agency. This section was developed in response to commenters who requested specific direction from the Agency on the

elements that must be contained in a State or Tribal program seeking authorization. The requirements at §§ 745.325 and 745.326 represent the elements EPA believes a State or Tribal program must have to successfully administer a lead-based paint training and certification or a pre-renovation notification program. These elements are discussed in more detail later in this Unit of the preamble.

Second, as required by Title X, a State or Tribal program must also be found, by the Agency, to be at least as protective as the Federal program. In today's final rule a State or Indian Tribe is required to develop and submit an analysis of their entire program that describes the program in comparison to the Federal program. This analysis should highlight the differences between the two programs and should provide an explanation why the State or Indian Tribe believes that these differences do not make their program any less protective than the Federal program. The analysis can focus on each of the program elements (e.g., procedures for the accreditation of training providers) and explain why the program element, as a whole, is at least as protective (or not) as the equivalent element in the Federal program.

Alternatively, the analysis can focus on the State or Tribal program as a whole, explaining why the entire State or Tribal program is at least as protective as the Federal program. This approach allows a State or Tribe to design a program that may fall short of the Federal program in one element, but would exceed it for another element.

Either approach allows a State or Indian Tribe to diverge as necessary and appropriate from the specific elements of the Federal program. The critical factor is that, on balance, a State or Tribal program element will be as protective as the corresponding Federal element. For example, a State training program may require fewer initial training hours for a particular discipline than the Federal program, but it would surpass the Federal program in requiring annual refresher training for certification. The State could argue that, on balance, this system is as protective as the Federal program. In this example, the specific State requirements diverge from the Federal program, but the State has concluded that it achieves the same result—properly trained lead-based paint professionals.

In reviewing State or Tribal applications, the Agency will employ this method of analysis as it examines the entire State or Tribal program and compares it with the entire Federal program. The State's or Tribe's own analysis will facilitate EPA review of a State or Tribal program, but more importantly it will allow each State and Indian Tribe to fully describe and explain to EPA their program and the success they believe it will have in meeting the goals of Title X.

The Agency anticipates that each State or Indian Tribe will develop a program that will best serve the needs of both consumers and lead-based paint professionals in that State or Indian Tribe. The Federal program should serve as a model for States or Indian Tribes as they develop or refine their own programs.

1. *Program elements: lead-based paint activities requirements.* At § 745.325, the Agency has promulgated specific program elements representing the minimum programmatic requirements that a State or Tribal program must contain to receive authorization from the Agency to administer and enforce this program.

Section 745.325(a) requires that a State or Indian Tribe seeking authorization must have the regulatory authority to require the training and certification of individuals engaged in lead-based paint activities. The State or Tribal regulations must also establish work practice standards for the conduct of these activities.

As discussed previously in Unit IV. of this preamble, the Agency has not, at this time, promulgated a regulation pursuant to section 403 of TSCA. When final, that rule will identify hazardous conditions of lead-based paint and levels of lead and conditions in soil and dust that would result in a hazard to building occupants. Accordingly, the Agency has not established specific lead-based paint hazard values or standards (or post-abatement clearance levels) that a State or Indian Tribe must have in order to receive program authorization. However, a State or Indian Tribe is required to develop and implement its own post-abatement clearance requirements.

The Agency believes the lack of section 403 standards will not adversely affect its ability to evaluate the protectiveness of State or Tribal programs. Hazard levels are only one component of an overall lead-based paint activities program, and the presence of a State or Tribal hazard level for lead in dust or soil will not, by itself, guarantee the effective detection and remediation of lead-based paint hazards. Other factors such as quality of training and competency of the workforce are of equal or greater importance to the overall success of a State or Tribal program.

Thus, the Agency believes that it can adequately evaluate the protectiveness of State or Tribal programs without Federal standards identifying hazardous levels of lead in paint, soil and dust.

The remainder of § 745.325 describes requirements that a State or Tribal certification and accreditation program must also contain. Incorporation of these elements into a State or Tribal program will be a significant factor in the Agency's evaluation of the protectiveness of a State or Tribal program.

The Agency has included, in the next two sections of this preamble, a discussion of the goals and objectives that the Agency considered when developing its requirements for the Federal program. The Agency believes that each State and Indian Tribe should also consider these goals and objectives as it develops or refines its own program in response to this regulation. While not regulatory requirements, they should provide States and Indian Tribes an insight into the factors that the Agency will consider when it evaluates their programs.

a. *Accreditation of training programs.* Pursuant to § 745.325(b), the State or Tribal program must contain either regulations or procedures for the accreditation of training programs, or procedures or regulations, for the acceptance of training offered by an accredited training provider in a State or Tribe authorized by EPA.

If the State or Tribe chooses to develop an accreditation program, the regulations or procedures must contain the following: (1) Training curriculum requirements, (2) training hour requirements, (3) hands-on training requirements, (4) trainee competency and proficiency requirements, and (5) requirements for training program quality control. The State or Tribal regulations must also establish procedures for the re-accreditation of training programs, and procedures for the oversight and control of training program activities.

A State or Tribal program for training program accreditation should achieve three objectives: (1) Establish common elements in which certified contractors must be trained, (2) provide training that enhances the knowledge and expertise of contractors, and (3) allow the State or Indian Tribe to suspend, revoke or modify the accreditation of training providers who offer substandard training or who violate the requirements of the State or Tribal accreditation program.

Alternatively, the State or Tribe can, for the purposes of certification, accept training offered by an accredited

training provider in a State or Tribe authorized by EPA. This approach may appeal to a smaller State or Tribe that would like to have a certification program that would oversee the conduct of lead-based paint activities, but, because of low demand, are unwilling to establish an accreditation program for training providers. Under this approach, the State's or Tribe's certification program would accept training offered at an accredited training provider in any State or Tribe authorized by EPA.

b. *Certification of individuals.* Section 745.325(c) describes the requirements for the certification of individuals that a State or Tribal program must have to be considered at least as protective as the Federal program. The State or Tribal program must require that certified contractors are properly trained and are conducting lead-based paint activities in a way that meets the work practice standards established by the State or Indian Tribe. The State or Tribal regulations or procedures must also establish procedures for the re-certification and the possible suspension, revocation or modification of certificates. In general, the State's or Indian Tribe's certification program should be designed so that a State or Indian Tribe can oversee the conduct of contractors engaged in lead-based paint activities to ensure that they are conducting their activities according to all applicable regulations.

The State or Tribal program must also establish requirements for the administration of a third-party certification exam. The exam should serve as a confirmation of the individual's retention and understanding of the information taught in an accredited training course. (The exam may also provide insight into the relative quality of accredited training providers.) Such an exam should be administered to applicants after completion of an accredited training program. The exam should be tailored to a particular work discipline and must not be offered by an accredited training provider. The Agency is currently developing an item bank of test questions that EPA will make available to States and Indian Tribes to use, if they choose, as their third-party exam.

c. *Work practice standards for lead-based paint activities.* The State or Tribal agency must establish work practice standards for performing lead-based paint activities, taking into account reliability, effectiveness, and safety. In § 745.325(d), the Agency has established minimum requirements for three lead-based paint activities: inspection, risk assessment, and abatement. In a future rulemaking, the Agency will address the need for work practice standards for the remaining lead-based paint activities, e.g., deleading, identification of lead-based paint and demolition in public buildings, commercial buildings, bridges and superstructures.

All of the work practice standards or regulations that a State or Indian Tribe develops for the conduct of lead-based paint activities must require that these activities, if conducted, be conducted by certified individuals. The work practice standards and regulations that a State or Indian Tribe adopts for the conduct of inspections must ensure that an inspection accurately identifies and reports the presence or absence of lead-based paint within the interior or on the exterior of a residential dwelling. A State's or Indian Tribe's work practice standards or regulations for the conduct of risk assessments must ensure that a risk assessment accurately identifies and reports on the existence, nature, severity and location of lead-based paint hazards, as defined by the State or Indian Tribe, within a residential dwelling or on the dwelling's property.

A State's or Indian Tribe's work practice standards or regulations for the conduct of abatement must ensure that abatements are conducted in a way that permanently eliminates lead-based paint hazards, and does not increase the hazards of lead-based paint to building occupants. The State or Tribal work practice standards or regulations must also include requirements for post-abatement clearance sampling. Additionally, the State or Indian Tribe must adopt or develop a lead-in-dust post-abatement clearance standard.

As described at § 745.325(a)(6), a State or Indian Tribe must develop the appropriate infrastructure to administer and enforce such a program successfully. A State or Indian Tribe must establish a State or Tribal agency or agencies (or designate an existing agency or agencies) to implement, administer, and enforce the program. Given the scope of the program, it is likely that more than one State or Tribal agency will be involved in the implementation and enforcement of this program. States and Indian Tribes are required to identify one agency or organization within a State or Indian Tribe (the primary agency) that will serve to coordinate the activities of these agencies. States and Indian Tribes are also encouraged to, whenever possible, utilize existing certification and accreditation programs and procedures.

2. *Program elements--pre-renovation notification.* At § 745.326, the Agency has promulgated specific program elements that specify minimum procedures and elements that a State or Tribal program must contain to receive authorization from the Agency to administer and enforce this program. Section 406(a) directs the Agency to develop and publish a lead hazard information pamphlet. Section 406(b) directs the Agency to develop a regulation to ensure that individuals engaged in performing renovation activities for compensation in target housing provide a lead hazard information pamphlet to the owner and occupant of such housing prior to commencing the renovation activity. These Federal regulations will be promulgated as final at 40 CFR part 745.

Section 745.326 requires that a State or Indian Tribe seeking authorization must, at a minimum, promulgate regulations that will achieve the objectives of the statutory mandate. The State or Tribal program must contain regulations or procedures that require the following: (1) Procedures and requirements for distribution of a lead hazard information pamphlet before the renovations (for compensation in target housing) commence; (2) an approved lead hazard information pamphlet meeting the requirements of TSCA section 406 as approved by EPA; and (3) provisions for the adequate enforcement of compliance with the above program.

Section 745.326(b) describes the requirements for distribution of the lead information that a State or Indian Tribe must have to be considered at least as protective as the Federal program. EPA believes State or Tribal programs should contain clear standards for identifying home improvement activities that trigger the pamphlet distribution requirements. It should also contain acceptable procedures for distributing the lead hazard information to the owners and the occupants of such housing before the actual renovation activity begins.

At § 745.326(c), the Agency has established minimum requirements for the distribution of lead hazard information. The State or Indian Tribe may either: (1) Distribute the lead hazard information pamphlet developed by EPA (under section 406(a) of TSCA) titled, "Protect Your Family From Lead in Your Home," or (2) distribute an alternative pamphlet or package of lead hazard information that has been submitted by the State or Tribe and approved by EPA for use in that State or Tribe. Any pamphlet or package of information submitted for approval must contain the content and design elements as Congressionally mandated by TSCA section 406(a).

In addition to the content requirements laid out in section 406(a), EPA believes that some additional discussion of Federal priority information may help States who seek to develop alternate pamphlets. In order to educate the public about lead-based paint hazards in the home, the pamphlet should provide citizens with clear and understandable information regarding the health risks associated with exposure to lead hazards, especially the risks to children less than 6 years of age, pregnant women, and women of childbearing age. In light of the exposure prevention goals of the overall Federal lead hazard reduction program, EPA believes that State pamphlets should also include a thorough discussion regarding measures that can be taken to reduce or avoid exposure to lead hazards from paint, dust, and soil in residential areas.

Since renovations may disturb lead and create hazards, it is essential that renovators and occupants of these homes be encouraged to take special precautions to reduce or avoid exposure during renovations. By providing a reference section including Federal, State, and local sources of assistance, citizens will be able to find certified contractors and information about inspections, risk assessments, interim controls, and abatement procedures available in their areas.

Nevertheless, the Agency recognizes the need for flexibility in the amount of detail to be included in a State's or Indian Tribe's information pamphlet, due to specific needs of each State or Indian Tribe. In covering all of the elements, States or Indian Tribes may determine the breadth of coverage of each element as they deem necessary. For example, the Agency recognizes that it may be infeasible to list all Federal, State, and local agencies in a reference section. Rather, States and Indian Tribes should focus on providing the main sources of access to that information. In general, more emphasis should be placed on the risks and exposure prevention recommendations. Furthermore, the Agency recommends that: (1) The information be written at no higher than a ninth-grade reading level; and (2) appropriate layout and type size be used to maximize readability and ensure that the information can be utilized by as wide an audience as possible.

3. *Program elements—enforcement provisions.* As previously discussed, the Agency is required to determine if a State or Tribal program will provide for the adequate enforcement of its regulations. Many commenters expressed concern that the proposed rule did not provide clear guidance as to how the Agency would interpret this phrase. Further, the Agency realizes that it has not provided a benchmark or model for States and Indian Tribes to follow as they develop the compliance and enforcement portions of their lead-based paint programs. As discussed previously, the proposed and final Federal regulations developed pursuant to sections 402(a) and 406 will serve as an example that States and Indian Tribes can use as they develop their own programs. These regulations also help in defining the scope of the terms "... at least as protective as. . . ."

Because there is not a comparable Federal enforcement program to emulate, and in response to the concerns of the commenters seeking more guidance on this issue, the Agency has developed, at § 745.327(b), (c) and (d), requirements that a State or Tribal lead-based paint compliance and enforcement program must meet in order to receive authorization. The Agency believes that a State or Indian Tribe that develops an enforcement program based on these requirements would provide adequate enforcement as that term is used in TSCA section 404(b)(2).

These requirements were developed based on the Agency's experience evaluating and approving other State and Tribal compliance and enforcement programs, as well as the Agency's experience in enforcing its own regulations. Further, the Agency's own compliance and enforcement program for these lead-based paint regulations will contain the elements described at § 745.327.

Section 745.327(b) describes the required standards, regulations and authorities that a State or Tribal program must have. Section 745.327(c) describes specific performance elements that a State or Tribal program must have. Section 745.327(d) describes the required summary of progress and performance that a State or Indian Tribe must agree to submit.

Because these elements are required of a State or Indian Tribe and will require some time to fully implement and develop, the Agency is providing for a phase-in of a State or Tribal lead-based compliance and enforcement program.

This phase-in is achieved by allowing States or Indian Tribes to seek either interim or final approval of the enforcement and compliance portion of their lead-based paint program. Either type of approval is sufficient for a State or Tribal program to receive authorization, provided the other portions of its program are judged at least as protective as the Federal program. A State or Indian Tribe that receives interim approval for its lead-based paint compliance and enforcement program must seek and receive final approval within 3 years of the date of receiving EPA's interim approval. One hundred and eighty days prior to that date, a State or Indian Tribe must apply to EPA for final approval of the compliance and enforcement program portion of a State or Tribal lead-based paint program. Final approval will be given to any State or Indian Tribe which has in place all of the elements of § 745.327(b), (c), and (d). If final approval is not received within 3 years, the Agency will initiate the process to withdraw the State's or Indian Tribe's authorization.

Interim approval of the compliance and enforcement program portion of the State or Tribal lead-based paint program can be granted by EPA once only, and will expire no later than 3 years from the date of EPA's interim approval. In order to be considered adequate for purposes of obtaining interim approval for the compliance and enforcement program portion of a State or Tribal lead-based paint program, a State or Indian Tribe must include the following elements in its application for program authorization. The State or Indian Tribe must certify it has the legal authority and ability to immediately implement the elements at § 745.327(b). This certification shall include a statement that the State or Indian Tribe, during the interim approval period, will carry out a level of compliance monitoring and enforcement necessary to ensure that the State or Indian Tribe addresses any significant risks posed by noncompliance with lead-based paint requirements.

The State or Indian Tribe must also present a plan with time frames identified for implementing in the field all of the elements described at § 745.327(c) within 3 years from the date of interim approval. A statement of resources must be included in the State or Tribal plan, which identifies the resources the State or Indian Tribe intends to devote to the administration of its lead-based paint compliance and enforcement program.

Finally, the State or Indian Tribe must agree to submit to EPA the Summary on Progress and Performance of lead-based paint compliance and enforcement activities as described at § 745.327(d) and discussed below. This report must be submitted by the primary agency for each State or Indian Tribe that has an authorized program to EPA beginning 12 months after the date of program authorization. Each authorized program

shall submit the report to the EPA Regional Administrator for the Region in which the State or Indian Tribe is located. The report shall be submitted at least once every 12 months for the first 3 years after program approval. As long as these reports indicate that the authorized program is successful, the reporting interval will automatically be extended to every 2 years. If the subsequent reports demonstrate problems with implementation, EPA will require a return to annual reporting in order to assist the State or Indian Tribe in resolving the problems. These programs will return to biannual reporting after demonstration of successful program implementation.

Final approval of the compliance and enforcement program portion of a State or Tribal lead-based paint program can be granted by EPA either as part of a State's or Indian Tribe's initial application (described at § 745.324(a)) or, for States or Indian Tribes which previously received interim approval as discussed above (described at § 745.327(a)(1)), through a separate application.

In order for the compliance and enforcement program to be considered adequate for final approval as a result of the State's or Indian Tribe's initial application, the State or Indian Tribe must certify it has the legal authority and ability to immediately implement both the elements at § 745.327(b) and 745.327(c).

The State or Indian Tribe must also submit a statement of resources which identifies the resources the State or Indian Tribe intends to devote to the administration of its lead-based paint compliance and enforcement program. Finally, the State or Indian Tribe must agree to submit to EPA the Summary on Progress and Performance of lead-based paint compliance and enforcement activities as described at § 745.327(d).

States or Indian Tribes with interim approval must submit to the Agency 180 days before their interim approval expires, a separate application addressing only the compliance and enforcement program portion of their program. The State or Indian Tribe must in this application certify that it has the legal authority and ability to immediately implement the elements at § 745.327(b) and (c).

The application must include a statement of resources which identifies the resources a State or Indian Tribe intends to devote to the administration of its lead-based paint compliance and enforcement program. The State or Indian Tribe must also agree to submit to EPA the Summary on Progress and Performance of lead-based paint compliance and enforcement activities as described at § 745.327(d). To the extent not previously submitted through the initial application described at § 745.324(a), States or Indian Tribes must submit copies of all applicable State or Tribal statutes, regulations, standards and other material that provide the State or Indian Tribe with authority to administer and enforce the lead-based paint compliance and enforcement program, and copies of the polices, certifications, plans, reports, and any other documents that demonstrate that the program meets the requirements established at § 745.327.

The remainder of this preamble section describes in more detail the elements at § 745.327(b), (c) and(d). Section 745.327(b) "Adequate Standards, Regulations, and Authority" requires that a State or Tribal program must have the elements discussed below.

1. *Lead-based paint activities and requirements.* Lead-based paint programs must demonstrate establishment of lead-based paint requirements for those acts described under TSCA sections 402(a) and/or 406 and regulations developed pursuant to those regulations.

2. *Authority to enter.* Officials must be able to enter, through consent, warrant, or other authority, premises or facilities where violations may occur for purposes of conducting inspections.

3. *Flexible remedies.* Lead-based paint programs must provide for a diverse and flexible array of enforcement remedies, which must be reflected in an enforcement response policy. The lead-based paint program should be able to select from among the available alternatives, an enforcement remedy that is particularly suited to the gravity of the violation, taking into account potential or actual risk, including:

(1) Warning letters, or notices of noncompliance, or notices of violation, or the equivalent;

(2) Administrative or civil actions (e.g., accreditation or certification suspension, revocation or modification, and/or administrative or civil penalty assessment); and

(3) Authority to apply criminal sanctions or other criminal authority using existing State or Tribal laws, as applicable.

The Agency understands that Indian Tribes may have certain restrictions on their ability to levy criminal sanctions. This limitation will not necessarily have a negative impact on an Indian Tribe's ability to receive program authorization. The Indian Tribe should, however, explain in its application the nature and extent of any limitation on its ability to levy criminal sanctions.

Federal law bars Indian Tribes from trying criminally or punishing non-Indians in the absence of express authority in a treaty or statute to the contrary. *Oliphant* v. *Suquamish Indian Tribe*, 435 U.S. 191(1978). In addition, the Indian Civil Rights Act prohibits any Indian court or Tribunal from imposing for any one offense a criminal penalty greater than $5,000 on Indians within its jurisdiction (25 U.S.C. section 1302(7)).

The Agency realizes that requiring Indian Tribes to demonstrate the same criminal authority as States would affectively prohibit any Indian Tribe from obtaining program authorization. The Agency, in part F of this unit of the preamble, provides that Indian Tribes are not required to exercise comprehensive criminal enforcement jurisdiction as a condition for lead-based paint activities program authorization. Under this rule, Indian Tribes are required to provide for the timely and appropriate referral of criminal enforcement matters to the EPA Regional Administrator when Tribal enforcement authority does not exist or is not sufficient (e.g., those concerning non-Indians or violations meriting penalties over $5,000). This section also requires that such procedures be established in a formal Memorandum of Agreement with the Regional Administrator. This approach is the same that the Agency has taken in the context of Tribal programs under the Safe Drinking Water Act and the Clean Water Act.

It should be noted that, as in authorized States, EPA has the authority to take enforcement action if an authorized Indian Tribe did not (or could not) take such action or did not enforce adequately (e.g., did not or could not impose a sufficient penalty). EPA emphasizes that this referral mechanism is available only in those cases where the limitations on Tribal enforcement arises under Federal law.

The Memorandum of Agreement will be executed by the Indian Tribe's counterpart to the State Director (e.g., the Director of Tribal Environmental Office, Program or Agency). The Memorandum of Agreement must include a provision for the timely and appropriate referral to the Regional Administrator for those criminal enforcement matters where that Indian Tribe does not have the authority (e.g., those addressing criminal violations by non-Indian or violations meriting penalties over $5,000). The Agreement must also identify any enforcement agreements that may exist between the Indian Tribe and any State.

Section 745.327(c) "Performance Elements" for a lead-based paint compliance and enforcement program requires that a State or Tribal program include the following elements:

a. *Training.* Lead-based paint compliance and enforcement programs must, at a minimum, implement a process for training inspection personnel and ensuring that they have well-trained enforcement inspectors. Inspectors must successfully demonstrate knowledge of the requirements of the particular discipline (e.g., abatement supervisor, and/or abatement worker, and/or lead-based paint inspector, and/or risk assessor, and/or project planner) for which they have compliance monitoring or enforcement responsibilities. For example, for State compliance/enforcement inspectors, completion of the applicable accredited training course would successfully demonstrate knowledge of these requirements. Instruction should take the form of both hands-on or on-the-job training and the use of prepared training materials.

b. *Compliance assistance.* Lead-based paint compliance and enforcement programs must provide compliance assistance to the public and the regulated community to facilitate awareness and understanding of and compliance with the State or Indian Tribes lead-based paint program(s).

c. *Sampling techniques.* Lead-based paint compliance and enforcement programs must have in place the technological capability to ensure compliance with the lead-based paint program requirements.

d. *Tracking tips and complaints.* The lead-based paint compliance and enforcement program must demonstrate the ability to process and react to tips and complaints or other information indicating a violation. EPA expects that the ability to process and react to tips and complaints would, as appropriate, include:

(1) A method for funneling complaints to a central organizational unit for review;

(2) A logging system to record the receipt of the complaint and to track the stages of the follow-up investigation;

(3) A mechanism for referring the complaint to the appropriate investigative personnel;

(4) A system for allowing a determination of the status of the case and ensuring correction of any violations; and

(5) A procedure for notifying citizens of the ultimate disposition of their complaints.

e. *Targeting inspections.* Lead-based paint compliance and enforcement programs must demonstrate the ability to target inspections to ensure compliance with the lead-based paint program requirements.

f. *Follow-up to inspection reports.* Lead-based paint compliance and enforcement programs must demonstrate the ability to reasonably, and in a timely manner, process and follow-up on inspection reports and other information generated through enforcement-related activities associated with a lead-based paint program. The State or Indian Tribe must be in a position to ensure correction of violations, and, as appropriate, effectively develop and issue enforcement remedies/responses in follow-up to the identification of violations.

g. *Compliance monitoring and enforcement.* A lead-based paint compliance and enforcement program must demonstrate that it is in a position to implement a compliance and enforcement program. Such a compliance monitoring and enforcement program must ensure correction of violations, and encompass either planned and/or responsive lead hazard reduction inspections and development/issuance of State or Tribal enforcement responses which are appropriate to the violations.

Section 745.327(d) "Summary on Progress and Performance" requires the State or Indian Tribe to submit a report which summarizes the results of implementing the State's or Indian Tribe's lead-based paint compliance and enforcement program, including a summary of the scope of the regulated community within the State or Indian Tribe (which would include the number of individuals and firms certified in lead-based activities and the number of training programs accredited), the inspections conducted, enforcement actions taken, compliance assistance provided, and the level of resources committed by the State or Indian Tribe to these activities and any other lead-based paint administrative and compliance/enforcement activities.

The report should describe any significant changes in the enforcement of the State or Tribal lead hazard reduction program implemented during the last reporting period. The report should also summarize the results of the State's or Indian Tribe's implementation activities and what the State or Indian Tribe discovered, in general, with regard to lead-based paint compliance and enforcement in the State or Indian Tribe as a result of these activities during the period covered by the report. The report should also describe how any measures of success were achieved, and directly assess the impact of compliance/enforcement activities on reducing threats to public health.

4. *Reciprocity.* EPA strongly encourages each State or Indian Tribe to establish reciprocal arrangements with other States and/or Indian Tribes with authorized programs. Such arrangements might address cooperation in certification determinations, the review and accreditation of training programs, candidate testing and examination administration, curriculum development, policy formulation, compliance monitoring, or the exchange of information and data. The benefits to be derived from these arrangements include a potential cost-saving from the reduction of duplicative activity and attainment of a more professional workforce as States and Tribes can refine and improve the effectiveness of their programs based upon the experience and methods of other States and Tribes.

Several elements of the EPA accreditation and certification programs in § 745.225 through 745.226 are intended to facilitate reciprocity. One of the most critical elements is the certification examination. The examination will serve to ensure that each individual certified under this program has a minimum level of knowledge in his or her particular discipline. At the same time, the certification examination development procedures (previously outlined in this preamble), will allow a State or Indian Tribe the flexibility to either adopt a "standardized" examination, or develop its own examination according to "standardized" guidelines. A second element is the inclusion of a refresher training course in the Federal program. Successful completion of a State or Tribal accredited refresher course may serve as an ideal requirement for individuals seeking a reciprocal certification in another State or Tribe.

F. Treatment of Tribes as a State

Today, EPA is also providing Federally recognized Indian Tribes the opportunity to apply for and receive lead-based paint program authorization similar to that available to States. Providing Indian Tribes with this opportunity is consistent with EPA's Policy for the Administration of Environmental Programs on Indian Reservations. This policy, formally adopted in 1984 and reaffirmed on March 14, 1994 by the Administrator, ". . . views Tribal Governments as the appropriate non-Federal parties for making decisions and carrying out program responsibilities affecting Indian reservations, their environments, and

the health and welfare of the reservation populace."

A major goal of EPA's Indian Policy is to eliminate all statutory and regulatory barriers to Tribal administration of Federal environmental programs. Today's final rule represents another step in the Agency's continuing commitment toward achieving this goal. However, EPA recognizes, that some eligible Indian Tribes may choose not to apply for program authorization. Despite the choice made, the Agency remains committed to providing technical assistance and training when possible to Tribal entities as they work to resolve their lead-based paint management concerns.

EPA believes that adequate authority exists under TSCA to allow Indian Tribes to seek lead-based paint program authorization. EPA's interpretation of TSCA is governed by the principles of *Chevron, U.S.A., Inc.* v. *Natural Resources Defense Council*, 467 U.S. 837 (1984). Where Congress has not explicitly stated its intent in adopting a statutory provision, the Agency charged with implementing that statute may adopt any interpretation which, in the Agency's expert judgment, is reasonable in light of the goals and purposes of the statute as a whole. Id. 844. Interpreting TSCA to allow Indian Tribes to apply for program authorization satisfies the *Chevron* test.

TSCA does not explicitly define a role for Indian Tribes under Sections 402 or 404 and reflects an undeniable ambiguity in Congressional intent. Indian Tribes are not subject to State law except in very limited circumstances. See, *California* v. *Cabazon Band of Mission Indians*, 480 U.S. 202 (1987). Indian Tribes are sovereign governments. See *Worcester* v. *Georgia*, 31 U.S. (10 Pet.) 515 (1832); and *United States* v. *Mazurie*, 419 U.S. 544, 557–58 (1975). There is no indication in the legislative history that Congress intended to abrogate any sovereign Tribal authority by denying Indian Tribes the opportunity to apply for authorization to run lead-based paint programs on Tribal lands or subjecting Indian Tribes to State law for TSCA purposes. Moreover, it is a well-established principle of statutory construction that Federal statutes which are ambiguous as to whether they abridge Tribal powers of self-government must generally be construed in favor of retaining Tribal rights. F. Cohen, *Handbook of Federal Indian Law*, 224 (1982); See, e.g., *Ramah Navajo School Board* v. *Bureau of Revenue*, 458 U.S. 832, 846 (1982).

Failure to authorize Tribal lead-based paint programs would deny Indian Tribes the option currently available to States to administer their programs in lieu of the Federal program. With this rule, however, regulated lead-based paint activities in Indian country could be under the jurisdiction of the closest sovereign with program and enforcement authority, the Indian Tribe, rather than the Federal government. Extending the ability to receive program authorization to Indian Tribes is consistent with the general principles of Federal Indian law and the Agency's Indian Policy, which states that environmental programs (e.g., TSCA Section 402/404) in Indian country will be implemented to the maximum extent possible by Tribal governments. Thus, EPA believes that allowing Indian Tribes to apply for program authorization reflects the sovereign authority of Indian Tribes under Federal law.

In the case of other environmental statutes (e.g., the Clean Water Act), EPA has worked to revise them to define explicitly the role for Indian Tribes under these programs. Yet, EPA also has stepped in on at least two occasions to allow Indian Tribes to seek program approval despite the lack of an explicit Congressional mandate. Most recently, EPA recognized Indian Tribes as the appropriate authority under the Emergency Planning and Community Right-to-Know Act (EPCRA), despite silence on the Tribal role under EPCRA (55 FR 30632; July 26, 1990). EPA reasoned that since EPCRA has no Federal role to back-up State planning activities, failure to recognize Indian Tribes as the authority under EPCRA would leave gaps in emergency planning on Indian lands. (54 FR 13000; March 29, 1989).

EPA filled a similar statutory gap much earlier as well, even before development of its formal Indian Policy. In 1974, EPA promulgated regulations which authorized Indian Tribes to redesignate the level of air quality applicable to Indian Lands under the Prevention of Significant Deterioration (PSD) program of the Clean Air Act in the same manner that States could redesignate for other lands. See *Nance* v. *EPA* (upholding regulations). EPA promulgated this regulation despite the fact that the Clean Air Act at that time made no reference whatsoever to Indian Tribes or their status under the Act.

One court already has recognized the reasonableness of EPA's actions in filling such regulatory gaps on Indian lands. In *Nance*, the U.S. Court of Appeals for the Ninth Circuit affirmed EPA's PSD redesignation regulations described in the previous paragraph. The Court found that EPA could reasonably interpret the Clean Air Act to allow for Tribal redesignation; rather than allowing the States to exercise that authority or exempting Indian lands from the redesignation process. 745 F.2d 713. The Court noted that EPA's rule was reasonable in light of the general existence of Tribal sovereignty over activities on Indian Lands. Id. 714.

Today's final rule is analogous to the rule upheld in *Nance*. EPA is proposing to fill a gap in jurisdiction on Indian lands. As with the redesignation program, approving Tribal lead-based paint activities programs ensures that the Federal government is not the entity exercising authority that Congress intended to be exercised at a more local level. Furthermore, the case law supporting EPA's interpretation is even stronger today than at the time of the *Nance* decision. First, the Supreme Court has reaffirmed EPA's authority to develop reasonable controlling interpretations of environmental statutes. *Chevron, supra*. Second, the Supreme Court has emphasized since *Nance* that Indian Tribes may regulate activities on Indian Lands, including those of non-Indians, where the conduct directly threatens the health and safety of the Indian Tribe or its members. *Montana* v. *United States*, 450 U.S. 544, 565 (1981).

In the case of lead-based paint, EPA believes that improperly conducted activities could directly threaten human health (including that of Tribal members) and the environment (including Indian lands). Indian Tribes are likely to be able to assert regulatory authority over activities conducted on Indian lands to protect these interests. Thus, as in *Nance*, EPA believes that allowing Indian Tribes to apply for program authorization reflects the sovereign authority of Indian Tribes under Federal law.

To have its lead-based paint program authorized by EPA under today's final rule, an Indian Tribe would have to have adequate authority over the regulated activities. The jurisdiction of Indian Tribes clearly extends "over both their members and their territory." *United States* v. *Mazurie*, 419 U.S. 544, 557 (1975). However, Indian reservations may include lands owned in fee by nonmembers. "Fee lands" are privately owned by non-members and title to the lands can be transferred without restriction. The extent of Tribal authority to regulate activities by non-Tribal members on fee lands depends whether those activities threaten or have a direct effect on the political integrity the economic security, or the health or welfare of the Indian Tribe. *Montana U.S.*, 450 U.S. 544, 565–66 (1981).

The Supreme Court in several post—*Montana* cases has explored several criteria to assure that the impacts upon Indian Tribes of the activities of non-Indians on fee land, under the *Montana* test, are more than *de minimis*. To date, however, the Court has not agreed in a case on point on any one reformulation of the test. In response to this uncertainty, the Agency will apply, as an operating rule, a formulation of the *Montana* standard that will expect a showing that the potential impacts of regulated activities of non-members on the Indian Tribe are serious and substantial. See 56 FR 64876, 64878; December, 12, 1991.

EPA will, thus, require that an Indian Tribe seeking lead-based paint program authorization over activities of non-members on fee lands demonstrate jurisdiction, i.e., make a showing that the potential impacts on Indian Tribes from lead-based paint activities of non-members on fee lands are serious and substantial. The choice of an Agency operating rule containing this standard is taken solely as a matter of prudence in light of judicial uncertainty and does not reflect an Agency endorsement of that standard *per se*. See 56 FR 64878. Whether an Indian Tribe has jurisdiction over activities by non-members on fee lands, will be determined case-by-case, based on factual findings. The determination as to whether the required effect is present in a particular case depends on the circumstances and will likely vary from Indian Tribe to Indian Tribe. The Agency believes, however, that the activities regulated under the various environmental statutes, including TSCA, generally have the potential for direct impacts on human health and welfare that are serious and substantial. See 56 FR 64878.

The process that the Agency will use for Indian Tribes to demonstrate their authority over non-members on fee lands includes a submission of a statement pursuant to § 745.324(c) explaining the legal basis for the Indian Tribes' regulatory authority. However, EPA will also rely on its generalized findings regarding the relationship of lead-based paint activities and related hazards to Tribal health and welfare. Thus, the Tribal submission will need to make a showing of facts that there are or may be activities regulated under TSCA Title IV by non-members on fee lands within the territory for which the Indian Tribe is seeking authorization, and that the Indian Tribe or Tribal members could be subject to exposure to lead-based paint hazards from such activities through, e.g., dust, soil, air, and/or direct contact. The Indian Tribe must explicitly assert and demonstrate jurisdiction, i.e., it should make a showing that lead-based paint activities conducted by non-members on fee lands could have direct impacts on the health and welfare of the Indian Tribe and its members that are serious and substantial. Appropriate governmental entities (e.g., an adjacent Indian Tribe or State) will have an opportunity to comment on the Indian Tribe's jurisdictional assertions during the public comment period prior to EPA's action on the Indian Tribe's application.

The Agency recognizes that jurisdictional disputes between Indian Tribes and States can be complex and difficult and that it will, in some circumstances, be forced to address such disputes by attempting to work with the parties in a mediative fashion. However, EPA's ultimate responsibility is protection of human health and the environment. In view of the mobility of environmental problems, and the interdependence of various jurisdictions, it is imperative that all affected sovereigns work cooperatively for environmental protection.

Under the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Clean Air Act (CAA), Congress has specified certain criteria by which EPA is to determine whether an Indian Tribe may be treated in the same manner as a State. These criteria generally require that the Indian Tribe (1) Be recognized by the Secretary of the Interior; (2) have an existing government exercising substantial governmental duties and powers; (3) have adequate civil regulatory jurisdiction over the subject matter and entities to be regulated; and (4) be reasonably expected to be capable of administering the Federal environmental program for which it is seeking approval.

As discussed below, EPA is requiring Indian Tribes seeking program authorization and grants under TSCA section 404 to demonstrate in the Program Description that they meet the four criteria listed above. The process EPA is proposing for Indian Tribes to make this showing, however, generally is not an onerous one. The Agency has simplified its process for determining Tribal eligibility to administer environmental programs under several other environmental statutes. See 59 FR 64339 (December 14, 1994) ("Treatment as a State (TAS) Simplification Rule"). The proposed process for determining eligibility for TSCA Section 404 programs parallels the simplification rule. Generally, the fact that an Indian Tribe has met the recognition or governmental function requirement under another environmental statute allowing for Tribal assumption of environmental programs (e.g., the Clean Water Act, Safe Drinking Water Act, Clean Air Act) will establish that it meets those particular requirements for purposes of TSCA Section 404 authorization. To facilitate review of Tribal applications, EPA requests that the Indian Tribe demonstrate that it has been approved for "TAS" (under the old "TAS" process) or been deemed eligible to receive authorization (under the simplified process) for any other program.

If an Indian Tribe has not received "TAS" approval or been deemed eligible to receive authorization, the Indian Tribe must demonstrate, pursuant to § 745.324(b)(5)(ii), that it meets the recognition and governmental function criteria described above. A discussion on how to make these showings can be found at 59 FR 64339 (December 14, 1994).

EPA believes, on the other hand, that the Agency must make a separate determination that an Indian Tribe has adequate jurisdictional authority and administrative and programmatic capability before it approves each Tribal lead-based paint program.

In particular, if the Indian Tribe is asserting jurisdiction over lead-based paint activities conducted by non-members on fee lands, it must explicitly show, in its submission, that the activities of non-members on fee lands regarding lead-based paint could have serious and substantial effects on the health and welfare of the Indian Tribe. Copies of all documents, such as treaties, constitutions, bylaws, charters, executive orders, codes, ordinances, and/or resolutions which support the Indian Tribe's assertions of jurisdiction must also be included. EPA will review this documentation and any comments given during the public comment period, and then will make a determination whether there has been an adequate demonstration of Tribal jurisdiction over Tribal, and if asserted, non-member activities on fee lands within the boundaries of the reservations.

Finally, capability is a determination that will be made on a case-by-case basis. Ordinarily, the information provided in the application for program approval submitted by an Indian Tribe or State, will be sufficient. Nevertheless, EPA may request, in individual cases, that the Indian Tribe provide a narrative statement or other documents showing that the Indian Tribe is capable of

administering the program for which it is seeking approval. See 59 FR 64341.

Consistent with the simplification rule, no prequalification process will be required for Indian Tribes to obtain program approval for the lead-based paint program. EPA will evaluate whether Indian Tribes have met the four eligibility criteria listed above during the program approval process.

Today's final rule also authorizes grants to eligible tribes as well as States under TSCA section 404(g). Under the statutory scheme, seetion 404(g) grants are specifically designed to aid in developing and implementing authorized TSCA lead-based paint activities programs. Given the Agency's interpretation that TSCA section 404 is properly read to allow EPA to authorize qualifying Tribes to administer a lead-based paint program in lieu of the Federal program, it follows that these Tribes should also be eligible to receive grant funding under TSCA section 404(g) to "develop and carry out authorized programs . . . ." The Agency's interpretation is consistent with well established statutory construction that ambiguous statutes should be construed in favor of Tribes. See, e.g., *Ramah Navajo School Board* v. *Bureau of Revenue*, 458 U.S. 832, 846 (1982); see also, *F. Cohen, Handbook of Federal Indian Law*, 224–225 (1982).

X. Regulatory Assessment Requirements

A. Executive Order 12866

Pursuant to Executive Order 12866 (58 FR 51735, October 4, 1993), it has been determined that this is a "significant regulatory action" because this regulation may raise novel legal or policy issues arising out of the initial implementation of the new legal mandates. As such, this action was submitted to the Office of Management and Budget (OMB) for review. Any comments or changes made during that review have been documented in the public record.

In addition, as specified by the Executive Order, the Agency has prepared a regulatory impact analysis (RIA) of the economic impacts associated with this regulation. The complete RIA document, titled *TSCA Title IV Sections 402(a) and 404: Target Housing and Child-Occupied Facilities Final Rule Regulatory Impact Analysis*, has been included in the public record for this regulation and is available for inspection in the TSCA public docket office. The central issue in the analysis is to identify, quantify and value the private and social benefits and costs of requiring that all lead-based paint abatement activities be performed by certified personnel trained by an accredited program, and that all lead-based paint activities meet certain minimum work practice standards. In attempting to conduct such an analysis, EPA encountered several difficulties related to the availability of data associated with the activity-specific costs and the benefits attributable to having trained and accredited personnel conduct the activities in accordance with specific standards. Using available information, the resulting analysis was issued with the proposed rule and any comments received were considered in the development of the final rule, as well as in the development of the corresponding final RIA. The following is a brief summary of the final RIA:

1. *Costs of regulatory action.* Cost estimates for performing lead-based paint activities pursuant to today's final rule are based on the number of inspections, lead hazard screens, risk assessments, and abatement activities and the unit costs associated with performing such activities. The first-year costs are estimated to be $31 million. Since the benefits and costs of this regulation occur at different times during the 50-year analysis period, EPA estimated their present value by discounting them. The selection of a discount rate has a direct bearing on the analysis, because cost and benefit estimates are sensitive to variations in the discount rate. As such, learned opinions vary on which discount rate should be used in certain circumstances. In this analysis, EPA uses a 3% discount rate for the core analysis and a 7% discount rate in the sensitivity analysis. Using a 3% discount rate, the present value of the costs over the 50-year time period total $1.114 billion. At a 7% discount rate, total costs fall to $530 million.

Total costs of compliance with work practice standards are estimated at $637 million and account for 57% of the discounted costs. The work practice standard costs are the main source of costs, due primarily to the cost of following these standards when conducting risk assessments and abatements in target housing and child-occupied facilities.

Certain assumptions that are a result of data limitations affect the estimates of the incremental costs of the rule. The analysis assumes current practices and training rates make up the baseline to be compared to the changes that will result from the rule provisions. This analysis accounts for the fact that lead-based paint activities are presently occurring, but does not account for the potential increase in such activities over time as a result of EPA regulations implementing other portions of Title X, resulting in greater costs. However, under these circumstances the attendant benefits would also be greater. Also, current training rate estimates assume that on average, lead-based paint activities do not provide full-time employment. If lead-based paint activities do constitute full-time employment, then fewer people will require training.

2. *Benefits of regulatory action.* The objective of the benefit analysis is to identify the benefits attributable to the regulation, which in this case are the incremental benefits associated with sections 402(a) and 404 or the value of any incremental risk reduction brought about by performing these activities using trained labor that complies with the work practice standards, which are also contained in the rule. These benefits consist of the value to consumers of being able to purchase lead-based paint activities services of more reliable quality. As a result of the reduced uncertainty about the quality of such services, more inspections, lead hazard screens, risk assessments, and abatements will be performed. In addition, the average quality of the services that are performed will rise as the low-quality lead-based paint activities are curtailed or eliminated by the accreditation, training, certification and work-practice standard requirements. The quantification and valuation of these benefits—the ability to purchase a service of more reliable quality and the improvement in quality—would require information about the distribution of quality of lead-based paint activities that building owners may purchase if this rule were promulgated, and in its absence. Due to data limitations, it was not possible to estimate the benefits of the rule. Total benefits of abatement, however, were estimated. The number of quantifiable and monetizable benefit categories in the analysis of abatement benefits is limited because dose-response function necessary to assess the potential impact of lead-based paint hazard reductions on human health and the environment are not available, and knowledge of national blood-lead levels pre- and pos implementation of sections 402(a) and 404 is also unavailable.

The second-year total measurable benefits of abatement are estimated at $625 million. Total measurable benefi of abatement, discounted over a 50-ye period at 3% percent are estimated at $16.1 billion, and discounted at 7% over the same time period are estimat at $1.55 billion. These benefits accrue from reductions of negative impacts c

children's intelligence, with an estimated present value of total measured benefits of abatement equal to $16.1 billion ($13.1 billion in target housing and $3 billion in child-occupied facilities).

In addition to the measured benefits of abatement in the base analysis, which focuses on protection of children age 6 years or younger, other qualitative benefit categories exist. These categories include:

(1) Neonatal mortality;

(2) Adult resident health effects such as hypertension, coronary heart disease and stroke;

(3) Infant/child neurological effects;

(4) Occupational health effects such as hypertension, coronary heart disease, and stroke; and

(5) Environmental risk reductions.

With the exception of (1) and (2), it is not possible to value these benefits due to data limitations. The contributions of these two benefit categories are estimated and included in the sensitivity analysis below. Were the values of these additional benefit categories included in the primary analysis, the measured benefits of the rule could be as much as $54 billion when discounted at 3% over 50 years.

3. *Benefit-cost comparison.* The purpose of this Regulatory Impact Analysis (RIA) was to analyze the benefits, costs, and economic impacts of the final rule implementing sections 402(a)/404. As discussed in the RIA, there are benefits to society associated with the reduction of lead-based paint hazards in general and there are also benefits associated with the establishment of certification programs for ensuring that only trained individuals perform the lead-based paint activities. Although there is insufficient data to allow for a quantification of those benefits, EPA believes that the analysis it conducted with regard to the benefits from reducing lead-based paint hazards indicates that sections 402(a)/404 provide a vehicle that will aid in the realization of those benefits and that the costs of this rule are reasonable in light of the potential magnitude of those benefits, quantified or not.

It is important to point out that while the total costs of the rule are comprehensively quantified, benefits of abatement are only partially quantified. If benefits to adult residents of target housing, lead-based paint abatement workers, individuals who live, work, or travel near abatement activities, and the environment were included, the benefits of the rule would be increased substantially. Estimates for possible benefits to two groups of potential beneficiaries (workers and adult residents of target housing) are provided in the sensitivity analysis discussion below.

4. *Sensitivity analysis.* Six sets of sensitivity analyses examine the effects on key categories of the benefits of abatements and cost categories. Two sets affected the costs: alternative work practice standard costs (resulting from alternative estimates of likely soil abatement practices) and alternative training costs (resulting from alternative assumptions of likely workload). In addition, varying assumptions of changes in blood-lead levels attributable to the rule provide estimated potential benefits for neonatal mortality, adult residents of abated units and workers. Finally, an alternative discount rate of 7%, which affects both the estimated costs and benefits of the rule, is applied.

Use of an alternate discount rate and inclusion of adult resident benefits had the greatest impact on benefits and costs. Simply discounting the stream of costs by 7% decreases the present value of the 50-year incremental cost estimate by 52%. Correspondingly, the use of the 7% discount rate decreases the present value of the 50-year benefit stream by 90%. Incorporation of adult resident benefits increases total benefits by $17.9 billion per 0.1 μg/dL change in blood lead when discounted at 3% over 50 years, without impacting the costs.

5. *Response to comments on the RIA.* The Agency received comments on the RIA from 16 parties. The comments are in five major categories: types of structures covered by the rule, estimation of benefits, estimation of costs, analytic assumptions, and factors left out of the analysis. In several cases, the rule and/or the analysis were revised to respond to these comments. In other cases, the Agency determined that the rule and analysis were appropriate. The comments and responses are summarized here.

Comments on the types of structures covered address the impacts of the rule on public and commercial buildings and steel structures. The Agency plans to develop separate regulations affecting public and commercial buildings and steel structures, and comments will be addressed at that time.

Several commenters stated that EPA had overestimated the benefits of the rule. While it is not possible to isolate the incremental benefits resulting from the rule, estimating the total value of certain categories of benefits due to properly performed abatements provides a useful benchmark against which to compare the incremental costs of the rule. This is especially true since poorly performed activities can result in further exposures and thus negative benefits. The RIA benefit estimates rely on IQ-related benefits to children age 6 years and younger; neonatal and adult hypertension benefits which are also assumed to result from the proposed rule are presented in the sensitivity analysis. The benefit estimates include the benefits derived from the reductions in lead-contaminated dust that occur with a lead-based paint abatement.

On the cost side of the analysis, some commenters argued that the costs were overestimated, while others that costs were underestimated. In response to comments that costs were overestimated, the Agency notes that the estimates were conservative. In response to the comments, the costs were underestimated; the Agency notes that the estimated costs are incremental not total. The per unit costs are estimated by comparing current industry practices to those required under the rule, identifying the additional actions the rule would impose, and calculating the costs of these actions. The current analysis accounts for the fact that some households will choose to skip the inspection step and start the process with a lead hazard screen or risk assessment. Changes were also made in the regulations governing soil abatements and the analysis of these costs. The Agency has reviewed the analysis and determined that costs are not underestimated.

A few of the comments challenged various analytic assumptions or approaches. Some argued that EPA's Integrated Exposure Uptake Biokinetic (IEUBK) Model should not be used in estimating the benefits. The Agency believes the use of this model to be appropriate; the Agency currently uses it for risk assessments at sites covered under the Superfund program and the Resource Conservation and Recovery Act. Other comments challenged the discount rate used in the analysis and the handling of productivity growth. The analysis is performed in real, as opposed to nominal, terms and thus it is not necessary to adjust for inflation. The 3% discount rate is consistent with other environmental regulations; the effects of using a higher rate are presented in the sensitivity analysis.

Several comments asserted that the analysis had not accounted for important factors. This is not the case. The final RIA includes the effect of OSHA rules, which was one factor noted by commenters. The impact of the rule on the demand for lead-based paint activities is modeled using data from Massachusetts, where similar regulations have been in effect for a few years. Attempts to uncover other

sources of data have been unsuccessful. In addition, the analysis now uses a single definition of lead-based paint hazards (paint with lead content of 1 mg/cm² and in deteriorated condition or good condition on friction surfaces).

B. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), the Agency considered whether today's regulatory action will have a significant economic impact on a substantial number of small entities. Based on the Agency's analysis, EPA determined that this action is likely to have a modest adverse economic impact on a substantial number of small entities. EPA conducted a regulatory flexibility analysis for the rule, the results of which are summarized in today's preamble and discussed in detail in supporting documents in the rulemaking record. In light of that analysis and public comments received, the Agency took numerous steps to minimize any adverse impact associated with the final rule, with particular emphasis on reducing any potential adverse impact on small entities. For example, in the final rule, the Agency reduced the recordkeeping requirements associated with the work practice standards, and reduced the length of the abatement worker course.

Previous sections of the preamble to this final rule include discussions summarizing the need for and objective of this rule, responses to the significant comments received on the proposed rule, and a summary of the analysis of small entity impacts. In addition, a Response to Public Comment Document presents EPA's detailed response to all the significant comments received on the proposal (including the initial regulatory flexibility analysis prepared for the proposed rule); and a Regulatory Impact Analysis (RIA) includes a complete description of the small entities potentially impacted, the projected requirements that small entities might be subject to, a summary of the changes made to the proposed rule which minimize the burden in the final rule, and an analysis of the projected impacts on small entities. These documents are available in the public docket supporting this rulemaking.

The following is a brief summary of EPA's analysis of the potential economic impacts on small entities. Basically, section 402(a) does not require or mandate the abatement of lead-based paint, nor require that any particular enterprise participate in the abatement of lead-based paint. However, section 402(a) does require that if an abatement is voluntarily conducted, certain training requirements and work practices must be followed. The costs of required training, certification, and work practice standards may create competitive differences that could result in unfair burdening of small firms. This analysis estimates both the absolute and the relative burden on small and large businesses.

The section 402(a) compliance costs consist of two components that may impact small businesses: (1) Accreditation and training costs for workers and supervisors, as well as certification costs for firms, and (2) incremental costs of work practice standards for abatement procedures. These two components coincide with the two decision points faced by firms interested in performing lead-based paint abatement work (including soil abatement). In order to participate in this industry, a firm must be certified and its employees must be trained and certified. Firms incur these expenses in anticipation of work, based on its assessment of the future demand for such services, its competition, and the price it will be able to charge. If the market demand does not meet these expectations, the firm may not recoup these costs, thus decreasing its profits.

The costs resulting from work practice standards are of a different nature. Firms that perform lead-based paint activities often perform similar work in settings that do not involve lead and are not affected by this rule. Occurring at the second decision point, work practice standards costs will be incurred by a firm only if it chooses to undertake a given lead-based paint job. In each situation, the firm can assess the impact of the work practice standards on its sales and profit levels. If the impact is adverse (i.e., results in profit levels below those available for other work), the firm has the option to decline the work. Most firms that perform lead-based paint activities are also active in the non-lead-based paint markets. In this voluntary setting, the work practice standards will not have an adverse impact on the profits of businesses because these firms can focus, instead, on the non-lead-based paint business. Therefore, no estimates of work practice standards burden were made. Likewise, owners of property will incur the work practice standards costs only if they determine that an abatement is to their benefit.

To determine the impact of the training and certification requirements on large and small businesses, the ratios of compliance costs to annual sales were calculated. By using first-year training costs, the largest impacts were estimated (a worst-case scenario). Impacts on firms in subsequent years would be significantly smaller because the demand for training in later years would decrease from the first year "start up" levels. Incremental certification and training costs per establishment were calculated by multiplying the average number of workers per establishment by the per person certification and training costs. Training costs vary by discipline and certification fees of $60 per individual and $350 per firm were estimated. While it is likely that firms will be able to pass some or all of the training and certification costs on to their customers in the form of higher prices, this analysis investigates the worst case in which the firm must absorb all the costs.

Assuming that none of the training and certification costs are shifted forward in the form of higher prices, the ratios of compliance costs to annual sales for small establishments range between 0.6 and 3.2%. For large firms, the ratios tend to be slightly lower, ranging from 0.6 and 1%. In the case of both large and small establishments, the largest cost ratio occurs for Standard Industrial Code 8743, testing laboratories.

As discussed above, firms are likely to pass these costs on to their customers in the form of higher prices because the regulations apply to all firms involved in lead-based paint activities. Therefore, the ratios tend to overestimate the impacts. Since training and licensing costs are a small percent of annual sales, and these percentages are only slightly higher for small businesses than for large ones, the impact of this regulation on small businesses will be small, as is the differential between impacts on large and small businesses.

While this shifting of costs will alleviate the burden on abatement firms the incremental costs of the regulations may affect building owners. Consistent with the arguments presented above, under this rule abatement is a voluntary action. As such, property owners are unlikely to undertake an abatement unless they are able to pass the cost on to tenants or otherwise recoup the costs in terms of higher property values. Where abatements are mandated under a State law or local ordinance, however the costs of this rule may have an adverse impact on landlords. While abandonment could possibly be the result, existing information indicates that this is unlikely. Therefore, analysis of potential impacts on property owners or tenants were not performed.

The comparison of impacts on small and large training providers was not performed for two reasons. First, except for the Regional Lead Training Center

(RLTCs), most training providers are small, so there would be no differential effect based on size of the firm. In addition, it is likely that training providers will pass the additional costs on to their trainees. This impact is analyzed above under the assumption that firms undertaking lead-based paint activities will bear these costs. Since the changes will be required by Federal regulations, they will apply to all training providers. Second, there will be heightened concern about lead-based paint hazards and thus a greater willingness to pay for trained personnel who will presumably provide higher quality services. In fact, these regulations are likely to create a market for training services and thus may be beneficial to small businesses.

C. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA (EPA ICR No. 1715.02) and a copy may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., SW.; Washington, DC 20460; by calling (202) 260–2740; or by e-mail from "farmer.sandy@epamail.epa.gov." The information requirements are not effective until OMB approves them.

Under today's final rule, four entities may be affected by new information collection and reporting requirements. These entities are: (1) States and Indian Tribes; (2) training program providers; (3) individuals engaged in lead-based paint activities; and (4) firms engaged in lead-based paint activities.

Importantly, States and Indian Tribes have the option of choosing to seek authorization to administer lead-based paint activities programs under TSCA section 404; thus the information collection and recordkeeping requirements are voluntary activities for these entities. In those States and Indian Tribes that do not seek program authorization, however, it is assumed that EPA will administer a lead-based paint activities program.

Likewise, individuals and firms that engage in lead-based paint activities, as well as training providers delivering training in such activities also have the option of providing these services. Thus, for those individuals and firms that choose to provide instruction or to contract their services for the purposes of conducting lead-based paint activities, the information collection and recordkeeping requirements also are voluntary.

Nonetheless, it must be noted that the information collection and recordkeeping requirements contained in the rule become mandatory once an entity chooses to administer a program; provide instruction; or contract its services in the lead-based paint activities field. The Agency notes that the rule's information collection and recordkeeping requirements have been designed so as to assist the Agency in meeting the core objectives of section 402(a) and section 404 of TSCA Title IV. These objectives are to ensure the integrity of an accreditation program for training providers; enable individuals and firms to become certified; and substantiate that programs administered by States and Indian Tribes are as protective as EPA's federal program. The Agency believes that the information collection and recordkeeping requirements generated by the rule are balanced in that they will permit the Agency to achieve the statutory objectives of TSCA Title IV without imposing an undue burden on those entities that choose to become involved in the lead-based paint activities field. The projected burden for these entities is summarized below.

For the purposes of this discussion, the term "burden" refers to the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

The average burden per training provider for the first effective year of the rule is estimated to be 28.3 hours with a cost per training provider of $681.40, and lesser burden in subsequent years. The estimated burden for the first effective year of the rule for the total number of training providers is 5,667 hours at a cost of $136,279.

The estimated, average burden per firm or contractor (individuals may be employed as firms or contractors) engaging in lead-based paint activities is 115.7 hours with a cost of $2,473, with lesser burden in subsequent years. For the total number of firms performing lead-based paint activities the burden is estimated to be 326,724 hours at a cost of $6,985,059.

The estimated, average burden per individual seeking certification to engage in lead-based paint activities depends on the length of the required training, plus 1 additional hour. For the total of individuals, the first effective year burden is 407,448 hours at a cost of $16,092,230 with lesser burden in subsequent years.

The first effective year burden per State or Indian Tribe depends on whether the entity must put legislation into place before implementing a regulatory program. For States or Indian Tribes that assume legislative and regulatory development the burden is 1,715 hours; for those States or Indian Tribes that need only to acquire program authorization the burden is 138 hours. The total burden for States and Indian Tribes in the first effective year is 48,713 hours at a cost of $959,534, with lesser burden in subsequent years. For EPA the estimated burden in the first effective year of the rule is 5,940 hours at a cost of $197,285.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

Send comments on the burden estimates and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., SW.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., NW., Washington, DC 20503, marked "Attention: Desk Officer for EPA." Include the ICR number in any correspondence.

D. Unfunded Mandates Reform Act

Pursuant to Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4), EPA has determined that this regulatory action does not contain any "Federal mandates," as described in the Act, for the States, local, or Tribal governments or the private sector because the rule implements mandates specifically and explicitly set forth by the Congress in TSCA section 402(a) and section 404 without the exercise of any political discretion by EPA.

In any event, EPA has determined that this action does not result in the expenditure of $100 million or more by

any State, local or tribal governments, or by anyone in the private sector. The costs associated with this action are described as required by Executive Order 12866 in section A of this Unit in the preamble.

As specified by Executive Order 12875 (58 FR 58093, October 28, 1993), titled *Enhancing the Intergovernmental Partnership*, the Agency has sought input from State, local and tribal government representatives throughout the development of this rule. EPA anticipates that these governments will play a critical role in the implementation of a national lead-based paint activities training and certification program. Consequently, the Agency felt that their input and participation were needed to ensure the success of the program.

Specifically, before it began the development of today's final rule, EPA informally met with a broad range of interested parties, including State, local and tribal governments to solicit information on the subject of lead-based paint activities training, accreditation, certification and standards. Communication and input from the States also was actively sought as the Agency developed a proposed rule, and after the proposed rule was published for public comment on September 2, 1994.

During the public comment period, at least three meetings were held with State representatives under the auspices of the "Forum on State and Tribal Toxics Action" or "FOSTTA." FOSTTA is an organization that serves as a forum for State and Tribal officials to jointly participate in addressing national toxics issues, including lead. Under FOSTTA, a "lead project" has been formed to work with the States and tribes on lead-related issues. In addition to meetings with FOSTTA representatives, the Agency met on December 5 and 6, 1994, with 93 State representatives from 49 State health and environmental agencies. Twelve representatives from 10 tribes also participated in the December meeting. Furthermore, the Agency received written comments from 83 State and local agencies representing 49 States.

The input received from State, Tribal and local agencies has been very useful in the final development of today's final rule. The Agency believes that this input has helped produce an efficient rule that will support the development of a workforce qualified to reduce and eliminate lead-based paint and its associated hazards. By working with the States, Tribes and local agencies, EPA also has initiated preliminary discussions intended to facilitate cooperation and program reciprocity.

E. Executive Order 12898—Environmental Justice Considerations

Pursuant to Executive Order 12898 (59 FR 7629, February 16, 1994), the Agency has considered environmental justice related issues with regard to the potential impacts of this action on the environmental and health conditions in low-income and minority communities. This examination shows that existing lead-based paint hazards are a risk to all segments of the population living in pre-1978 housing. However, literature indicates that some segments of our society are at relatively greater risk than others.

Although the baseline risks from lead-based paint fall disproportionately on poorer sub-populations, it may be more likely that abatements will take place in residential dwellings occupied by mid- to upper-level income households. Abatements will be voluntary, and wealthier households are more likely to have the financial resources to abate an existing problem in their home, or to avoid lead-based paint hazards by not moving into a residential dwelling with lead-based paint. Even though a national strategy of eliminating lead-based paint hazards targets a problem affecting a greater share of poor households and minorities, the impact of income on the ability to undertake voluntary abatements may result in a more inequitable distribution of the risks in the future.

In response to this situation, several Federal agencies have established grant programs that will provide financial support to reduce the prevalence of lead poisoning among disadvantaged children. The EPA also has several information initiatives designed to educate the public, with a particular emphasis on this socio-economic group, of the dangers of lead.

XI. Submission to Congress and the General Accounting Office

This action is not a "major rule" as defined by 5 U.S.C. 804(2) of the Administrative Procedure Act. Pursuant to 5 U.S.C. 801 (a)(1)(A), EPA submitted this action to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to its publication in today's Federal Register.

XII. Rulemaking Record

EPA has established a record for this rulemaking (docket control number OPPTS–62128B). A public version of the record, without any information claimed as confidential business information, is available in the TSCA Public Docket Office, from 12 noon to 4 p.m., Monday through Friday, except legal holidays. The TSCA Public Docket Office is located at EPA headquarters, in Rm. G102, 401 M St., SW., Washington, DC. 20460.

The rulemaking record contains information considered by EPA in developing this final rule. The record includes: (1) All Federal Register notices, (2) relevant support documents, (3) reports, (4) memoranda and letters, and (5) hearing transcripts responses to comments, and other documents related to this rulemaking.

Unit XIII. of this preamble contains the list of documents which the Agency relied upon while developing today's regulation and can be found in the docket. Other documents, not listed there, such as those submitted with written comments from interested parties, are contained in the TSCA Docket office as well. A draft of today's final rule submitted by the Administrator to the OMB for an interagency review process prior to publication of the rule is also contained in the public docket.

XIII. References

(1) Minutes from the December 5 and 6, 1994 National Lead Conference; and minutes from Forum on State and Tribal Toxics Action (FOSTTA) meetings from 1994 and 1995.

(2) Lead; Requirements for Lead-Based Paint Activities; Proposed Rule; Summary of Public Comments; prepared by the Office of Pollution Prevention and Toxics, (January 31, 1995).

(3) Lead; Requirements for Lead-Based Paint Activities; Proposed Rule; Response to Public Comment Document; prepared by the Office of Pollution Prevention and Toxics, (August 1, 1996).

(4) Mathematica Policy Research, Inc. 1990. *Profile of Child care Settings*; and U.S. Department of Education, National Center for Education Statistics. 1993. Fast Response Survey, Kindergarten Teacher Survey on Student Readiness.

(5) U. S. Census Bureau, School Enrollment Supplement. 1994. *Current Population Survey*. (October 1994).

(6) U.S. Department of Housing and Urban Development (HUD), Office of Lead-Based Paint Abatement and Poisoning Prevention. 1995. *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*. (June 1995).

(7) USEPA. 1995. *Residential Sampling for Lead: Protocols for Dust and Soil Sampling*. (EPA 747–R–95–001, March 1995).

(8) USEPA. 1995. *A Field Test of Lead-Based Paint Testing Technologies: Summary Report.* (EPA 747–R–95–002a, May 1995).
(9) USEPA. 1995. *A Review of Studies Addressing Lead Abatement Effectiveness.* (EPA 747–R–95–006, June 1995).
(10) Amitai, Y. Brown, M.J., Graef, J.W., and Cosgrove, E. 1991. "Residential Deleading: Effects on the Blood Lead Levels of Lead-Poisoned Children." *Pediatrics.* 88(5):893–897.
(11) Farfel, M.R. and Chisolm, J.J. Jr. 1990. "Health and Environmental Outcomes of Traditional and Modified Practices for Abatement of Residential Lead-Based Paint." *American Journal of Public Health.* 80(10):1240–1245.
(12) HUD, Office of Lead-Based Paint Abatement and Poisoning Prevention. 1995. HUD Guidelines Appendix 11–1 "One-Hour Waiting Period Rationale for Clearance Sampling." (June 1995).

List of Subjects in 40 CFR Part 745

Environmental protection, Hazardous substances, Lead, Recordkeeping and reporting requirements.

Dated: August 21, 1996.

Carol M. Browner,

Administrator.

Therefore, 40 CFR part 745 is amended as follows:

PART 745—[AMENDED]

1. The authority citation for part 745 is revised to read as follows:

Authority: 15 U.S.C. 2605, 2607, and 2681–2692.

2. By adding new subparts L and Q and reserving subparts G–K and M–P to read as follows:

Subparts G–K [Reserved]

Subpart L—Lead-Based Paint Activities

Sec.

Subparts M–P [Reserved]

Subpart Q—State and Indian Tribal Programs

Sec.

Subparts G–K [Reserved]

Subpart L—Lead-Based Paint Activities

§745.220 Scope and applicability.

(a) This subpart contains procedures and requirements for the accreditation of lead-based paint activities training programs, procedures and requirements for the certification of individuals and firms engaged in lead-based paint activities, and work practice standards for performing such activities. This subpart also requires that, except as discussed below, all lead-based paint activities, as defined in this subpart, be performed by certified individuals and firms.

(b) This subpart applies to all individuals and firms who are engaged in lead-based paint activities as defined in § 745.223, except 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 owner's immediate family while these activities are being performed, or a child residing in the building has been identified as having an elevated blood lead level. This subpart applies only in those States or Indian Country that do not have an authorized State or Tribal program pursuant to § 745.324 of subpart Q.

(c) Each department, agency, and instrumentality of the executive, legislative, and judicial branches of the Federal Government having jurisdiction over any property or facility, or engaged in any activity resulting, or which may result, in a lead-based paint hazard, and each officer, agent, or employee thereof shall be subject to, and comply with, all Federal, State, interstate, and local requirements, both substantive and procedural, including the requirements of this subpart regarding lead-based paint, lead-based paint activities, and lead-based paint hazards.

(d) While this subpart establishes specific requirements for performing lead-based paint activities should they be undertaken, nothing in this subpart requires that the owner or occupant undertake any particular lead-based paint activity.

§745.223 Definitions.

The definitions in subpart A apply to this subpart. In addition, the following definitions apply.

Abatement means any measure or set of measures designed to permanently eliminate lead-based paint hazards. Abatement includes, but is not limited to:

(1) The removal of lead-based paint and lead-contaminated dust, the permanent enclosure or encapsulation of lead-based paint, the replacement of lead-painted surfaces or fixtures, and the removal or covering of lead-contaminated soil; and

(2) All preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures.

(3) Specifically, abatement includes, but is not limited to:

(i) Projects for which there is a written contract or other documentation, which provides that an individual or firm will be conducting activities in or to a residential dwelling or child-occupied facility that:

(A) Shall result in the permanent elimination of lead-based paint hazards; or

(B) Are designed to permanently eliminate lead-based paint hazards and are described in paragraphs (1) and (2) of this definition.

(ii) Projects resulting in the permanent elimination of lead-based paint hazards, conducted by firms or individuals certified in accordance with § 745.226, unless such projects are covered by paragraph (4) of this definition;

(iii) Projects resulting in the permanent elimination of lead-based paint hazards, conducted by firms or individuals who, through their company name or promotional literature, represent, advertise, or hold themselves out to be in the business of performing lead-based paint activities as identified and defined by this section, unless such projects are covered by paragraph (4) of this definition; or

(iv) Projects resulting in the permanent elimination of lead-based paint hazards, that are conducted in

response to State or local abatement orders.

(4) Abatement does not include 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, 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.

Accredited training program means a training program that has been accredited by EPA pursuant to § 745.225 to provide training for individuals engaged in lead-based paint activities.

Adequate quality control means a plan or design which ensures the authenticity, integrity, and accuracy of samples, including dust, soil, and paint chip or paint film samples. Adequate quality control also includes provisions for representative sampling.

Certified firm means a company, partnership, corporation, sole proprietorship, association, or other business entity that performs lead-based paint activities to which EPA has issued a certificate of approval pursuant to § 745.226(f).

Certified inspector means an individual who has been trained by an accredited training program, as defined by this section, and certified by EPA pursuant to § 745.226 to conduct inspections. A certified inspector also samples for the presence of lead in dust and soil for the purposes of abatement clearance testing.

Certified abatement worker means an individual who has been trained by an accredited training program, as defined by this section, and certified by EPA pursuant to § 745.226 to perform abatements.

Certified project designer means an individual who has been trained by an accredited training program, as defined by this section, and certified by EPA pursuant to § 745.226 to prepare abatement project designs, occupant protection plans, and abatement reports.

Certified risk assessor means an individual who has been trained by an accredited training program, as defined by this section, and certified by EPA pursuant to § 745.226 to conduct risk assessments. A risk assessor also samples for the presence of lead in dust and soil for the purposes of abatement clearance testing.

Certified supervisor means an individual who has been trained by an accredited training program, as defined by this section, and certified by EPA pursuant to § 745.226 to supervise and conduct abatements, and to prepare occupant protection plans and abatement reports.

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.

Clearance levels are values that indicate the maximum amount of lead permitted in dust on a surface following completion of an abatement activity.

Common area means a portion of a building that is generally accessible to all occupants. Such an area may include, but is not limited to, hallways, stairways, laundry and recreational rooms, playgrounds, community centers, garages, and boundary fences.

Component or building component means specific design or structural elements or fixtures of a building, residential dwelling, or child-occupied facility that are distinguished from each other by form, function, and location. These include, but are not limited to, interior components such as: ceilings, crown molding, walls, chair rails, doors, door trim, floors, fireplaces, radiators and other heating units, shelves, shelf supports, stair treads, stair risers, stair stringers, newel posts, railing caps, balustrades, windows and trim (including sashes, window heads, jambs, sills or stools and troughs), built in cabinets, columns, beams, bathroom vanities, counter tops, and air conditioners; and exterior components such as: painted roofing, chimneys, flashing, gutters and downspouts, ceilings, soffits, fascias, rake boards, cornerboards, bulkheads, doors and door trim, fences, floors, joists, lattice work, railings and railing caps, siding, handrails, stair risers and treads, stair stringers, columns, balustrades, window sills or stools and troughs, casings, sashes and wells, and air conditioners.

Containment means a process to protect workers and the environment by controlling exposures to the lead-contaminated dust and debris created during an abatement.

Course agenda means an outline of the key topics to be covered during a training course, including the time allotted to teach each topic.

Course test means an evaluation of the overall effectiveness of the training which shall test the trainees' knowledge and retention of the topics covered during the course.

Course test blue print means written documentation identifying the proportion of course test questions devoted to each major topic in the course curriculum.

Deteriorated paint means paint that is cracking, flaking, chipping, peeling, or otherwise separating from the substrate of a building component.

Discipline means one of the specific types or categories of lead-based paint activities identified in this subpart for which individuals may receive training from accredited programs and become certified by EPA. For example, "abatement worker" is a discipline.

Distinct painting history means the application history, as indicated by its visual appearance or a record of application, over time, of paint or other surface coatings to a component or room.

Documented methodologies are methods or protocols used to sample for the presence of lead in paint, dust, and soil.

Elevated blood lead level (EBL) means an excessive absorption of lead that is a confirmed concentration of lead in whole blood of 20 µg/dl (micrograms of lead per deciliter of whole blood) for a single venous test or of 15–19 µg/dl in two consecutive tests taken 3 to 4 months apart.

Encapsulant means a substance that forms a barrier between lead-based pain and the environment using a liquid-applied coating (with or without reinforcement materials) or an adhesively bonded covering material.

Encapsulation means the application of an encapsulant.

Enclosure means the use of rigid, durable construction materials that are mechanically fastened to the substrate in order to act as a barrier between lea based paint and the environment.

Guest instructor means an individu designated by the training program manager or principal instructor to provide instruction specific to the lecture, hands-on activities, or work practice components of a course.

Hands-on skills assessment means evaluation which tests the trainees' ability to satisfactorily perform the w practices and procedures identified i § 745.225(d), as well as any other ski taught in a training course.

Hazardous waste means any wast defined in 40 CFR 261.3.

Inspection means a surface-by-surface investigation to determine the presence of lead-based paint and the provision of a report explaining the results of the investigation.

Interim certification means the status of an individual who has successfully completed the appropriate training course in a discipline from an accredited training program, as defined by this section, but has not yet received formal certification in that discipline from EPA pursuant to § 745.226. Interim certifications expire 6 months after the completion of the training course, and is equivalent to a certificate for the 6-month period.

Interim controls means a set of measures designed to temporarily reduce human exposure or likely exposure to lead-based paint hazards, including specialized cleaning, repairs, maintenance, painting, temporary containment, ongoing monitoring of lead-based paint hazards or potential hazards, and the establishment and operation of management and resident education programs.

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 activities means, in the case of target housing and child-occupied facilities, inspection, risk assessment, and abatement, as defined in this subpart.

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.

Lead-contaminated dust means surface dust in residential dwellings, or child-occupied facilities that contains an area or mass concentration of lead at or in excess of levels identified by the Administrator pursuant to TSCA section 403.

Lead-contaminated soil means bare soil on residential real property and on the property of a child-occupied facility that contains lead at or in excess of levels identified by the Administrator pursuant to TSCA section 403.

Lead-hazard screen is a limited risk assessment activity that involves limited paint and dust sampling as described in § 745.227(c).

Living area means any area of a residential dwelling used by one or more children age 6 and under, including, but not limited to, living rooms, kitchen areas, dens, play rooms, and children's bedrooms.

Multi-family dwelling means a structure that contains more than one separate residential dwelling unit, which is used or occupied, or intended to be used or occupied, in whole or in part, as the home or residence of one or more persons.

Paint in poor condition means more than 10 square feet of deteriorated paint on exterior components with large surface areas; or more than 2 square feet of deteriorated paint on interior components with large surface areas (e.g., walls, ceilings, floors, doors); or more than 10 percent of the total surface area of the component is deteriorated on interior or exterior components with small surface areas (window sills, baseboards, soffits, trim).

Permanently covered soil means soil which has been separated from human contact by the placement of a barrier consisting of solid, relatively impermeable materials, such as pavement or concrete. Grass, mulch, and other landscaping materials are not considered permanent covering.

Person means any natural or judicial person including any individual, corporation, partnership, or association; any Indian Tribe, State, or political subdivision thereof; any interstate body; and any department, agency, or instrumentality of the Federal government.

Principal instructor means the individual who has the primary responsibility for organizing and teaching a particular course.

Recognized laboratory means an environmental laboratory recognized by EPA pursuant to TSCA section 405(b) as being capable of performing an analysis for lead compounds in paint, soil, and dust.

Reduction means measures designed to reduce or eliminate human exposure to lead-based paint hazards through methods including interim controls and abatement.

Residential dwelling means (1) a detached single family dwelling unit, including attached structures such as porches and stoops; or (2) a single family dwelling unit in a structure that contains more than one separate residential dwelling unit, which is used or occupied, or intended to be used or occupied, in whole or in part, as the home or residence of one or more persons.

Risk assessment means (1) an on-site investigation to determine the existence, nature, severity, and location of lead-based paint hazards, and (2) the provision of a report by the individual or the firm conducting the risk assessment, explaining the results of the investigation and options for reducing lead-based paint hazards.

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.

Training curriculum means an established set of course topics for instruction in an accredited training program for a particular discipline designed to provide specialized knowledge and skills.

Training hour means at least 50 minutes of actual learning, including, but not limited to, time devoted to lecture, learning activities, small group activities, demonstrations, evaluations, and/or hands-on experience.

Training manager means the individual responsible for administering a training program and monitoring the performance of principal instructors and guest instructors.

Visual inspection for clearance testing means the visual examination of a residential dwelling or a child-occupied facility following an abatement to determine whether or not the abatement has been successfully completed.

Visual inspection for risk assessment means the visual examination of a residential dwelling or a child-occupied facility to determine the existence of deteriorated lead-based paint or other potential sources of lead-based paint hazards.

§ 745.225 Accreditation of training programs: target housing and child-occupied facilities.

(a) *Scope.* (1) A training program may seek accreditation to offer lead-based paint activities courses in any of the following disciplines: inspector, risk assessor, supervisor, project designer, and abatement worker. A training program may also seek accreditation to offer refresher courses for each of the above listed disciplines.

(2) Training programs may first apply to EPA for accreditation of their lead-based paint activities courses or refresher courses pursuant to this section on or after August 31, 1998.

(3) A training program shall not provide, offer, or claim to provide EPA-accredited lead-based paint activities courses without applying for and receiving accreditation from EPA as required under paragraph (b) of this section on or after March 1, 1999.

(b) *Application process.* The following are procedures a training program shall follow to receive EPA

accreditation to offer lead-based paint activities courses:

(1) A training program seeking accreditation shall submit a written application to EPA containing the following information:

(i) The training program's name, address, and telephone number.

(ii) A list of courses for which it is applying for accreditation.

(iii) A statement signed by the training program manager certifying that the training program meets the requirements established in paragraph (c) of this section. If a training program uses EPA-recommended model training materials, or training materials approved by a State or Indian Tribe that has been authorized by EPA under subpart Q of this part, the training program manager shall include a statement certifying that, as well.

(iv) If a training program does not use EPA-recommended model training materials or training materials approved by an authorized State or Indian Tribe, its application for accreditation shall also include:

(A) A copy of the student and instructor manuals, or other materials to be used for each course.

(B) A copy of the course agenda for each course.

(v) All training programs shall include in their application for accreditation the following:

(A) A description of the facilities and equipment to be used for lecture and hands-on training.

(B) A copy of the course test blueprint for each course.

(C) A description of the activities and procedures that will be used for conducting the assessment of hands-on skills for each course.

(D) A copy of the quality control plan as described in paragraph (c)(9) of this section.

(2) If a training program meets the requirements in paragraph (c) of this section, then EPA shall approve the application for accreditation no more than 180 days after receiving a complete application from the training program. In the case of approval, a certificate of accreditation shall be sent to the applicant. In the case of disapproval, a letter describing the reasons for disapproval shall be sent to the applicant. Prior to disapproval, EPA may, at its discretion, work with the applicant to address inadequacies in the application for accreditation. EPA may also request additional materials retained by the training program under paragraph (i) of this section. If a training program's application is disapproved, the program may reapply for accreditation at any time.

(3) A training program may apply for accreditation to offer courses or refresher courses in as many disciplines as it chooses. A training program may seek accreditation for additional courses at any time as long as the program can demonstrate that it meets the requirements of this section.

(c) *Requirements for the accreditation of training programs.* For a training program to obtain accreditation from EPA to offer lead-based paint activities courses, the program shall meet the following requirements:

(1) The training program shall employ a training manager who has:

(i) At least 2 years of experience, education, or training in teaching workers or adults; or

(ii) A bachelor's or graduate degree in building construction technology, engineering, industrial hygiene, safety, public health, education, business administration or program management or a related field; or

(iii) Two years of experience in managing a training program specializing in environmental hazards; and

(iv) Demonstrated experience, education, or training in the construction industry including: lead or asbestos abatement, painting, carpentry, renovation, remodeling, occupational safety and health, or industrial hygiene.

(2) The training manager shall designate a qualified principal instructor for each course who has:

(i) Demonstrated experience, education, or training in teaching workers or adults; and

(ii) Successfully completed at least 16 hours of any EPA-accredited or EPA-authorized State or Tribal-accredited lead-specific training; and

(iii) Demonstrated experience, education, or training in lead or asbestos abatement, painting, carpentry, renovation, remodeling, occupational safety and health, or industrial hygiene.

(3) The principal instructor shall be responsible for the organization of the course and oversight of the teaching of all course material. The training manager may designate guest instructors as needed to provide instruction specific to the lecture, hands-on activities, or work practice components of a course.

(4) The following documents shall be recognized by EPA as evidence that training managers and principal instructors have the education, work experience, training requirements or demonstrated experience, specifically listed in paragraphs (c)(1) and (c)(2) of this section. This documentation need not be submitted with the accreditation application, but, if not submitted, shall be retained by the training program as required by the recordkeeping requirements contained in paragraph (i) of this section. Those documents include the following:

(i) Official academic transcripts or diploma as evidence of meeting the education requirements.

(ii) Resumes, letters of reference, or documentation of work experience, as evidence of meeting the work experience requirements.

(iii) Certificates from train-the-trainer courses and lead-specific training courses, as evidence of meeting the training requirements.

(5) The training program shall ensure the availability of, and provide adequate facilities for, the delivery of the lecture, course test, hands-on training, and assessment activities. This includes providing training equipment that reflects current work practices and maintaining or updating the equipment and facilities as needed.

(6) To become accredited in the following disciplines, the training program shall provide training courses that meet the following training hour requirements:

(i) The inspector course shall last a minimum of 24 training hours, with a minimum of 8 hours devoted to hands-on training activities. The minimum curriculum requirements for the inspector course are contained in paragraph (d)(1) of this section.

(ii) The risk assessor course shall last a minimum of 16 training hours, with a minimum of 4 hours devoted to hands-on training activities. The minimum curriculum requirements for the risk assessor course are contained in paragraph (d)(2) of this section.

(iii) The supervisor course shall last a minimum of 32 training hours, with a minimum of 8 hours devoted to hands-on activities. The minimum curriculum requirements for the supervisor course are contained in paragraph (d)(3) of this section.

(iv) The project designer course shall last a minimum of 8 training hours. The minimum curriculum requirements for the project designer course are contained in paragraph (d)(4) of this section.

(v) The abatement worker course shall last a minimum of 16 training hours, with a minimum of 8 hours devoted to hands-on training activities. The minimum curriculum requirements for the abatement worker course are contained in paragraph (d)(5) of this section.

(7) For each course offered, the training program shall conduct either a course test at the completion of the course, and if applicable, a hands-on

skills assessment, or in the alternative, a proficiency test for that discipline. Each individual must successfully complete the hands-on skills assessment and receive a passing score on the course test to pass any course, or successfully complete a proficiency test.

(i) The training manager is responsible for maintaining the validity and integrity of the hands-on skills assessment or profiency test to ensure that it accurately evaluates the trainees' performance of the work practices and procedures associated with the course topics contained in paragraph (d) of this section.

(ii) The training manager is responsible for maintaining the validity and integrity of the course test to ensure that it accurately evaluates the trainees' knowledge and retention of the course topics.

(iii) The course test shall be developed in accordance with the test blueprint submitted with the training accreditation application.

(8) The training program shall issue unique course completion certificates to each individual who passes the training course. The course completion certificate shall include:

(i) The name, a unique identification number, and address of the individual.

(ii) The name of the particular course that the individual completed.

(iii) Dates of course completion/test passage.

(iv) Expiration date of interim certification, which shall be 6 months from the date of course completion.

(v) The name, address, and telephone number of the training program.

(9) The training manager shall develop and implement a quality control plan. The plan shall be used to maintain and improve the quality of the training program over time. This plan shall contain at least the following elements:

(i) Procedures for periodic revision of training materials and the course test to reflect innovations in the field.

(ii) Procedures for the training manager's annual review of principal instructor competency.

(10) The training program shall offer courses which teach the work practice standards for conducting lead-based paint activities contained in § 745.227, and other standards developed by EPA pursuant to Title IV of TSCA. These standards shall be taught in the appropriate courses to provide trainees with the knowledge needed to perform the lead-based paint activities they are responsible for conducting.

(11) The training manager shall be responsible for ensuring that the training program complies at all times with all of the requirements in this section.

(12) The training manager shall allow EPA to audit the training program to verify the contents of the application for accreditation as described in paragraph (b) of this section.

(d) *Minimum training curriculum requirements.* To become accredited to offer lead-based paint courses instruction in the specific disciplines listed below, training programs must ensure that their courses of study include, at a minimum, the following course topics. Requirements ending in an asterisk (*) indicate areas that require hands-on activities as an integral component of the course.

(1) *Inspector.* (i) Role and responsibilities of an inspector.

(ii) Background information on lead and its adverse health effects.

(iii) Background information on Federal, State, and local regulations and guidance that pertains to lead-based paint and lead-based paint activities.

(iv) Lead-based paint inspection methods, including selection of rooms and components for sampling or testing.*

(v) Paint, dust, and soil sampling methodologies.*

(vi) Clearance standards and testing, including random sampling.*

(vii) Preparation of the final inspection report.*

(viii) Recordkeeping.

(2) *Risk assessor.* (i) Role and responsibilities of a risk assessor.

(ii) Collection of background information to perform a risk assessment.

(iii) Sources of environmental lead contamination such as paint, surface dust and soil, water, air, packaging, and food.

(iv) Visual inspection for the purposes of identifying potential sources of lead-based paint hazards.*

(v) Lead hazard screen protocol.

(vi) Sampling for other sources of lead exposure.*

(vii) Interpretation of lead-based paint and other lead sampling results, including all applicable State or Federal guidance or regulations pertaining to lead-based paint hazards.*

(viii) Development of hazard control options, the role of interim controls, and operations and maintenance activities to reduce lead-based paint hazards.

(ix) Preparation of a final risk assessment report.

(3) *Supervisor.* (i) Role and responsibilities of a supervisor.

(ii) Background information on lead and its adverse health effects.

(iii) Background information on Federal, State, and local regulations and guidance that pertain to lead-based paint abatement.

(iv) Liability and insurance issues relating to lead-based paint abatement.

(v) Risk assessment and inspection report interpretation.*

(vi) Development and implementation of an occupant protection plan and abatement report.

(vii) Lead-based paint hazard recognition and control.*

(viii) Lead-based paint abatement and lead-based paint hazard reduction methods, including restricted practices.*

(ix) Interior dust abatement/cleanup or lead-based paint hazard control and reduction methods.*

(x) Soil and exterior dust abatement or lead-based paint hazard control and reduction methods.*

(xi) Clearance standards and testing.

(xii) Cleanup and waste disposal.

(xiii) Recordkeeping.

(4) *Project designer.* (i) Role and responsibilities of a project designer.

(ii) Development and implementation of an occupant protection plan for large scale abatement projects.

(iii) Lead-based paint abatement and lead-based paint hazard reduction methods, including restricted practices for large-scale abatement projects.

(iv) Interior dust abatement/cleanup or lead hazard control and reduction methods for large-scale abatement projects.

(v) Clearance standards and testing for large scale abatement projects.

(vi) Integration of lead-based paint abatement methods with modernization and rehabilitation projects for large scale abatement projects.

(5) *Abatement worker.* (i) Role and responsibilities of an abatement worker.

(ii) Background information on lead and its adverse health effects.

(iii) Background information on Federal, State and local regulations and guidance that pertain to lead-based paint abatement.

(iv) Lead-based paint hazard recognition and control.*

(v) Lead-based paint abatement and lead-based paint hazard reduction methods, including restricted practices.*

(vi) Interior dust abatement methods/ cleanup or lead-based paint hazard reduction.*

(vii) Soil and exterior dust abatement methods or lead-based paint hazard reduction.*

(e) *Requirements for the accreditation of refresher training programs.* A training program may seek accreditation to offer refresher training courses in any of the following disciplines: inspector, risk assessor, supervisor, project

designer, and abatement worker. To obtain EPA accreditation to offer refresher training, a training program must meet the following minimum requirements:

(1) Each refresher course shall review the curriculum topics of the full-length courses listed under paragraph (d) of this section, as appropriate. In addition, to become accredited to offer refresher training courses, training programs shall ensure that their courses of study include, at a minimum, the following:

(i) An overview of current safety practices relating to lead-based paint activities in general, as well as specific information pertaining to the appropriate discipline.

(ii) Current laws and regulations relating to lead-based paint activities in general, as well as specific information pertaining to the appropriate discipline.

(iii) Current technologies relating to lead-based paint activities in general, as well as specific information pertaining to the appropriate discipline.

(2) Each refresher course, except for the project designer course, shall last a minimum of 8 training hours. The project designer refresher course shall last a minimum of 4 training hours.

(3) For each course offered, the training program shall conduct a hands-on assessment (if applicable), and at the completion of the course, a course test.

(4) A training program may apply for accreditation of a refresher course concurrently with its application for accreditation of the corresponding training course as described in paragraph (b) of this section. If so, EPA shall use the approval procedure described in paragraph (b) of this section. In addition, the minimum requirements contained in paragraphs (c) (except for the requirements in paragraph (c)(6)), and (e)(1), (e)(2) and (e)(3) of this section shall also apply.

(5) A training program seeking accreditation to offer refresher training courses only shall submit a written application to EPA containing the following information:

(i) The refresher training program's name, address, and telephone number.

(ii) A list of courses for which it is applying for accreditation.

(iii) A statement signed by the training program manager certifying that the refresher training program meets the minimum requirements established in paragraph (c) of this section, except for the requirements in paragraph (c)(6) of this section. If a training program uses EPA-developed model training materials, or training materials approved by a State or Indian Tribe that has been authorized by EPA under § 745.324 to develop its refresher training course materials, the training manager shall include a statement certifying that, as well.

(iv) If the refresher training course materials are not based on EPA-developed model training materials or training materials approved by an authorized State or Indian Tribe, the training program's application for accreditation shall include:

(A) A copy of the student and instructor manuals to be used for each course.

(B) A copy of the course agenda for each course.

(v) All refresher training programs shall include in their application for accreditation the following:

(A) A description of the facilities and equipment to be used for lecture and hands-on training.

(B) A copy of the course test blueprint for each course.

(C) A description of the activities and procedures that will be used for conducting the assessment of hands-on skills for each course (if applicable).

(D) A copy of the quality control plan as described in paragraph (c)(9) of this section.

(vi) The requirements in paragraphs (c)(1) through (c)(5), and (c)(7) through (c)(12) of this section apply to refresher training providers.

(vii) If a refresher training program meets the requirements listed in this paragraph, then EPA shall approve the application for accreditation no more than 180 days after receiving a complete application from the refresher training program. In the case of approval, a certificate of accreditation shall be sent to the applicant. In the case of disapproval, a letter describing the reasons for disapproval shall be sent to the applicant. Prior to disapproval, EPA may, at its discretion, work with the applicant to address inadequacies in the application for accreditation. EPA may also request additional materials retained by the refresher training program under paragraph (i) of this section. If a refresher training program's application is disapproved, the program may reapply for accreditation at any time.

(f) *Re-accreditation of training programs.* (1) Unless re-accredited, a training program's accreditation (including refresher training accreditation) shall expire 4 years after the date of issuance. If a training program meets the requirements of this section, the training program shall be re-accredited.

(2) A training program seeking re-accreditation shall submit an application to EPA no later than 180 days before its accreditation expires. If a training program does not submit its application for re-accreditation by that date, EPA cannot guarantee that the program will be re-accredited before the end of the accreditation period.

(3) The training program's application for re-accreditation shall contain:

(i) The training program's name, address, and telephone number.

(ii) A list of courses for which it is applying for re-accreditation.

(iii) A description of any changes to the training facility, equipment or course materials since its last application was approved that adversely affects the students ability to learn.

(iv) A statement signed by the program manager stating:

(A) That the training program complies at all times with all requirements in paragraphs (c) and (e) of this section, as applicable; and

(B) The recordkeeping and reporting requirements of paragraph (i) of this section shall be followed.

(4) Upon request, the training program shall allow EPA to audit the training program to verify the contents of the application for re-accreditation as described in paragraph (f)(3) of this section.

(g) *Suspension, revocation, and modification of accredited training programs.* (1) EPA may, after notice and an opportunity for hearing, suspend, revoke, or modify training program accreditation (including refresher training accreditation) if a training program, training manager, or other person with supervisory authority over the training program has:

(i) Misrepresented the contents of a training course to EPA and/or the student population.

(ii) Failed to submit required information or notifications in a timely manner.

(iii) Failed to maintain required records.

(iv) Falsified accreditation records, instructor qualifications, or other accreditation-related information or documentation.

(v) Failed to comply with the training standards and requirements in this section.

(vi) Failed to comply with Federal, State, or local lead-based paint statutes or regulations.

(vii) Made false or misleading statements to EPA in its application for accreditation or re-accreditation which EPA relied upon in approving the application.

(2) In addition to an administrative or judicial finding of violation, execution of a consent agreement in settlement of an enforcement action constitutes, for purposes of this section, evidence of a

failure to comply with relevant statutes or regulations.

(h) *Procedures for suspension, revocation or modification of training program accreditation.* (1) Prior to taking action to suspend, revoke, or modify the accreditation of a training program, EPA shall notify the affected entity in writing of the following:

(i) The legal and factual basis for the suspension, revocation, or modification.

(ii) The anticipated commencement date and duration of the suspension, revocation, or modification.

(iii) Actions, if any, which the affected entity may take to avoid suspension, revocation, or modification, or to receive accreditation in the future.

(iv) The opportunity and method for requesting a hearing prior to final EPA action to suspend, revoke or modify accreditation.

(v) Any additional information, as appropriate, which EPA may provide.

(2) If a hearing is requested by the accredited training program, EPA shall:

(i) Provide the affected entity an opportunity to offer written statements in response to EPA's assertions of the legal and factual basis for its proposed action, and any other explanations, comments, and arguments it deems relevant to the proposed action.

(ii) Provide the affected entity such other procedural opportunities as EPA may deem appropriate to ensure a fair and impartial hearing.

(iii) Appoint an official of EPA as Presiding Officer to conduct the hearing. No person shall serve as Presiding Officer if he or she has had any prior connection with the specific matter.

(3) The Presiding Officer appointed pursuant to paragraph (h)(2) of this section shall:

(i) Conduct a fair, orderly, and impartial hearing within 90 days of the request for a hearing.

(ii) Consider all relevant evidence, explanation, comment, and argument submitted.

(iii) Notify the affected entity in writing within 90 days of completion of the hearing of his or her decision and order. Such an order is a final agency action which may be subject to judicial review.

(4) If EPA determines that the public health, interest, or welfare warrants immediate action to suspend the accreditation of any training program prior to the opportunity for a hearing, it shall:

(i) Notify the affected entity of its intent to immediately suspend training program accreditation for the reasons listed in paragraph (g)(1) of this section. If a suspension, revocation, or modification notice has not previously been issued pursuant to paragraph (g)(1) of this section, it shall be issued at the same time the emergency suspension notice is issued.

(ii) Notify the affected entity in writing of the grounds for the immediate suspension and why it is necessary to suspend the entity's accreditation before an opportunity for a suspension, revocation or modification hearing.

(iii) Notify the affected entity of the anticipated commencement date and duration of the immediate suspension.

(iv) Notify the affected entity of its right to request a hearing on the immediate suspension within 15 days of the suspension taking place and the procedures for the conduct of such a hearing.

(5) Any notice, decision, or order issued by EPA under this section, any transcripts or other verbatim record of oral testimony, and any documents filed by an accredited training program in a hearing under this section shall be available to the public, except as otherwise provided by section 14 of TSCA or by part 2 of this title. Any such hearing at which oral testimony is presented shall be open to the public, except that the Presiding Officer may exclude the public to the extent necessary to allow presentation of information which may be entitled to confidential treatment under section 14 of TSCA or part 2 of this title.

(6) The public shall be notified of the suspension, revocation, modification or reinstatement of a training program's accreditation through appropriate mechanisms.

(7) EPA shall maintain a list of parties whose accreditation has been suspended, revoked, modified or reinstated.

(i) *Training program recordkeeping requirements.* (1) Accredited training programs shall maintain, and make available to EPA, upon request, the following records:

(i) All documents specified in paragraph (c)(4) of this section that demonstrate the qualifications listed in paragraphs (c)(1) and (c)(2) of this section of the training manager and principal instructors.

(ii) Current curriculum/course materials and documents reflecting any changes made to these materials.

(iii) The course test blueprint.

(iv) Information regarding how the hands-on assessment is conducted including, but not limited to:

(A) Who conducts the assessment.

(B) How the skills are graded.

(C) What facilities are used.

(D) The pass/fail rate.

(v) The quality control plan as described in paragraph (c)(9) of this section.

(vi) Results of the students' hands-on skills assessments and course tests, and a record of each student's course completion certificate.

(vii) Any other material not listed above in paragraphs (i)(1)(i) through (i)(1)(vi) of this section that was submitted to EPA as part of the program's application for accreditation.

(2) The training program shall retain these records at the address specified on the training program accreditation application (or as modified in accordance with paragraph (i)(3) of this section for a minimum of 3 years and 6 months.

(3) The training program shall notify EPA in writing within 30 days of changing the address specified on its training program accreditation application or transferring the records from that address.

§ 745.226 Certification of individuals and firms engaged in lead-based paint activities: target housing and child-occupied facilities.

(a) *Certification of individuals.* (1) Individuals seeking certification by EPA to engage in lead-based paint activities must either:

(i) Submit to EPA an application demonstrating that they meet the requirements established in paragraphs (b) or (c) of this section for the particular discipline for which certification is sought; or

(ii) Submit to EPA an application with a copy of a valid lead-based paint activities certification (or equivalent) from a State or Tribal program that has been authorized by EPA pursuant to subpart Q of this part.

(2) Individuals may first apply to EPA for certification to engage in lead-based paint activities pursuant to this section on or after March 1, 1999.

(3) Following the submission of an application demonstrating that all the requirements of this section have been meet, EPA shall certify an applicant as an inspector, risk assessor, supervisor, project designer, or abatement worker, as appropriate.

(4) Upon receiving EPA certification, individuals conducting lead-based paint activities shall comply with the work practice standards for performing the appropriate lead-based paint activities as established in § 745.227.

(5) It shall be a violation of TSCA for an individual to conduct any of the lead-based paint activities described in § 745.227 after August 30, 1999, if that individual has not been certified by EPA pursuant to this section to do so.

(b) *Inspector, risk assessor or supervisor.* (1) To become certified by EPA as an inspector, risk assessor, or

supervisor, pursuant to paragraph (a)(1)(i) of this section, an individual must:

(i) Successfully complete an accredited course in the appropriate discipline and receive a course completion certificate from an accredited training program.

(ii) Pass the certification exam in the appropriate discipline offered by EPA; and,

(iii) Meet or exceed the following experience and/or education requirements:

(A) Inspectors. (*1*) No additional experience and/or education requirements.

(*2*) [Reserved]

(B) Risk assessors. (*1*) Successful completion of an accredited training course for inspectors; and

(*2*) Bachelor's degree and 1 year of experience in a related field (e.g., lead, asbestos, environmental remediation work, or construction), or an Associates degree and 2 years experience in a related field (e.g., lead, asbestos, environmental remediation work, or construction); or

(*3*) Certification as an industrial hygienist, professional engineer, registered architect and/or certification in a related engineering/health/environmental field (e.g., safety professional, environmental scientist); or

(*4*) A high school diploma (or equivalent), and at least 3 years of experience in a related field (e.g., lead, asbestos, environmental remediation work or construction).

(C) Supervisor: (*1*) One year of experience as a certified lead-based paint abatement worker; or

(*2*) At least 2 years of experience in a related field (e.g., lead, asbestos, or environmental remediation work) or in the building trades.

(2) The following documents shall be recognized by EPA as evidence of meeting the requirements listed in (b)(2)(iii) of this paragraph:

(i) Official academic transcripts or diploma, as evidence of meeting the education requirements.

(ii) Resumes, letters of reference, or documentation of work experience, as evidence of meeting the work experience requirements.

(iii) Course completion certificates from lead-specific or other related training courses, issued by accredited training programs, as evidence of meeting the training requirements.

(3) In order to take the certification examination for a particular discipline an individual must:

(i) Successfully complete an accredited course in the appropriate discipline and receive a course completion certificate from an accredited training program.

(ii) Meet or exceed the education and/or experience requirements in paragraph (b)(1)(iii) of this section.

(4) The course completion certificate shall serve as interim certification for an individual until the next available opportunity to take the certification exam. Such interim certification shall expire 6 months after issuance.

(5) After passing the appropriate certification exam and submitting an application demonstrating that he/she meets the appropriate training, education, and/or experience prerequisites described in paragraph (b)(1) of this section, an individual shall be issued a certificate by EPA. To maintain certification, an individual must be re-certified as described in paragraph (e) of this section.

(6) An individual may take the certification exam no more than three times within 6 months of receiving a course completion certificate.

(7) If an individual does not pass the certification exam and receive a certificate within 6 months of receiving his/her course completion certificate, the individual must retake the appropriate course from an accredited training program before reapplying for certification from EPA.

(c) *Abatement worker and project designer.* (1) To become certified by EPA as an abatement worker or project designer, pursuant to paragraph (a)(1)(i) of this section, an individual must:

(i) Successfully complete an accredited course in the appropriate discipline and receive a course completion certificate from an accredited training program.

(ii) Meet or exceed the following additional experience and/or education requirements:

(A) Abatement workers. (*1*) No additional experience and/or education requirements.

(*2*) [Reserved]

(B) Project designers. (*1*) Successful completion of an accredited training course for supervisors.

(*2*) Bachelor's degree in engineering, architecture, or a related profession, and 1 year of experience in building construction and design or a related field; or

(*3*) Four years of experience in building construction and design or a related field.

(2) The following documents shall be recognized by EPA as evidence of meeting the requirements listed in this paragraph:

(i) Official academic transcripts or diploma, as evidence of meeting the education requirements.

(ii) Resumes, letters of reference, or documentation of work experience, as evidence of meeting the work experience requirements.

(iii) Course completion certificates from lead-specific or other related training courses, issued by accredited training programs, as evidence of meeting the training requirements.

(3) The course completion certificate shall serve as an interim certification until certification from EPA is received, but shall be valid for no more than 6 months from the date of completion.

(4) After successfully completing the appropriate training courses and meeting any other qualifications described in paragraph (c)(1) of this section, an individual shall be issued a certificate from EPA. To maintain certification, an individual must be re-certified as described in paragraph (e) of this section.

(d) *Certification based on prior training.* (1) Any individual who received training in a lead-based paint activity between October 1, 1990, and March 1, 1999 shall be eligible for certification by EPA under the alternative procedures contained in this paragraph. Individuals who have received lead-based paint activities training at an EPA-authorized State or Tribal accredited training program shall also be eligible for certification by EPA under the following alternative procedures:

(i) Applicants for certification as an inspector, risk assessor, or supervisor shall:

(A) Demonstrate that the applicant has successfully completed training or on-the-job training in the conduct of a lead-based paint activity.

(B) Demonstrate that the applicant meets or exceeds the education and/or experience requirements in paragraph (b)(1)(iii) of this section.

(C) Successfully complete an accredited refresher training course for the appropriate discipline.

(D) Pass a certification exam administered by EPA for the appropriate discipline.

(ii) Applicants for certification as an abatement worker or project designer shall:

(A) Demonstrate that the applicant has successfully completed training or on-the-job training in the conduct of a lead-based paint activity.

(B) Demonstrate that the applicant meets the education and/or experience requirements in paragraphs (c)(1) of this section; and

(C) Successfully complete an accredited refresher training course for the appropriate discipline.

(2) Individuals shall have until August 30, 1999 to apply to EPA for certification under the above procedures. After that date, all individuals wishing to obtain certification must do so through the procedures described in paragraph (a), and paragraph (b) or (c) of this section, according to the discipline for which certification is sought.

(e) *Re-certification.* (1) To maintain certification in a particular discipline, a certified individual shall apply to and be re-certified by EPA in that discipline by EPA either:

(i) Every 3 years if the individual completed a training course with a course test and hands-on assessment; or

(ii) every 5 years if the individual completed a training course with a proficiency test.

(2) An individual shall be re-certified if the individual successfully completes the appropriate accredited refresher training course and submits a valid copy of the appropriate refresher course completion certificate.

(f) *Certification of firms.* (1) All firms which perform or offer to perform any of the lead-based paint activities described in § 745.227 after August 30, 1999 shall be certified by EPA.

(2) A firm seeking certification shall submit to EPA a letter attesting that the firm shall only employ appropriately certified employees to conduct lead-based paint activities, and that the firm and its employees shall follow the work practice standards in § 745.227 for conducting lead-based paint activities.

(3) From the date of receiving the firm's letter requesting certification, EPA shall have 90 days to approve or disapprove the firm's request for certification. Within that time, EPA shall respond with either a certificate of approval or a letter describing the reasons for a disapproval.

(4) The firm shall maintain all records pursuant to the requirements in § 745.227.

(5) Firms may first apply to EPA for certification to engage in lead-based paint activities pursuant to this section on or after March 1, 1999.

(g) *Suspension, revocation, and modification of certifications of individuals engaged in lead-based paint activities.* (1) EPA may, after notice and opportunity for hearing, suspend, revoke, or modify an individual's certification if an individual has:

(i) Obtained training documentation through fraudulent means.

(ii) Gained admission to and completed an accredited training program through misrepresentation of admission requirements.

(iii) Obtained certification through misrepresentation of certification requirements or related documents dealing with education, training, professional registration, or experience.

(iv) Performed work requiring certification at a job site without having proof of certification.

(v) Permitted the duplication or use of the individual's own certificate by another.

(vi) Performed work for which certification is required, but for which appropriate certification has not been received.

(vii) Failed to comply with the appropriate work practice standards for lead-based paint activities at § 745.227.

(viii) Failed to comply with Federal, State, or local lead-based paint statutes or regulations.

(2) In addition to an administrative or judicial finding of violation, for purposes of this section only, execution of a consent agreement in settlement of an enforcement action constitutes evidence of a failure to comply with relevant statutes or regulations.

(h) *Suspension, revocation, and modification of certifications of firms engaged in lead-based paint activities.* (1) EPA may, after notice and opportunity for hearing, suspend, revoke, or modify a firm's certification if a firm has:

(i) Performed work requiring certification at a job site with individuals who are not certified.

(ii) Failed to comply with the work practice standards established in § 745.227.

(iii) Misrepresented facts in its letter of application for certification to EPA.

(iv) Failed to maintain required records.

(v) Failed to comply with Federal, State, or local lead-based paint statutes or regulations.

(2) In addition to an administrative or judicial finding of violation, for purposes of this section only, execution of a consent agreement in settlement of an enforcement action constitutes evidence of a failure to comply with relevant statutes or regulations.

(i) *Procedures for suspension, revocation, or modification of the certification of individuals or firms.*

(1) If EPA decides to suspend, revoke, or modify the certification of any individual or firm, it shall notify the affected entity in writing of the following:

(i) The legal and factual basis for the suspension, revocation, or modification.

(ii) The commencement date and duration of the suspension, revocation, or modification.

(iii) Actions, if any, which the affected entity may take to avoid suspension, revocation, or modification or to receive certification in the future.

(iv) The opportunity and method for requesting a hearing prior to final EPA action to suspend, revoke, or modify certification.

(v) Any additional information, as appropriate, which EPA may provide.

(2) If a hearing is requested by the certified individual or firm, EPA shall:

(i) Provide the affected entity an opportunity to offer written statements in response to EPA's assertion of the legal and factual basis and any other explanations, comments, and arguments it deems relevant to the proposed action.

(ii) Provide the affected entity such other procedural opportunities as EPA may deem appropriate to ensure a fair and impartial hearing.

(iii) Appoint an official of EPA as Presiding Officer to conduct the hearing. No person shall serve as Presiding Officer if he or she has had any prior connection with the specific matter.

(3) The Presiding Officer shall:

(i) Conduct a fair, orderly, and impartial hearing within 90 days of the request for a hearing;

(ii) Consider all relevant evidence, explanation, comment, and argument submitted; and

(iii) Notify the affected entity in writing within 90 days of completion of the hearing of his or her decision and order. Such an order is a final EPA action subject to judicial review.

(4) If EPA determines that the public health, interest, or welfare warrants immediate action to suspend the certification of any individual or firm prior to the opportunity for a hearing, it shall:

(i) Notify the affected entity of its intent to immediately suspend certification for the reasons listed in paragraph (h)(1) of this section. If a suspension, revocation, or modification notice has not previously been issued, it shall be issued at the same time the immediate suspension notice is issued.

(ii) Notify the affected entity in writing of the grounds upon which the immediate suspension is based and why it is necessary to suspend the entity's accreditation before an opportunity for a hearing to suspend, revoke, or modify the individual's or firm's certification.

(iii) Notify the affected entity of the commencement date and duration of the immediate suspension.

(iv) Notify the affected entity of its right to request a hearing on the immediate suspension within 15 days of the suspension taking place and the

procedures for the conduct of such a hearing.

(5) Any notice, decision, or order issued by EPA under this section, transcript or other verbatim record of oral testimony, and any documents filed by a certified individual or firm in a hearing under this section shall be available to the public, except as otherwise provided by section 14 of TSCA or by part 2 of this title. Any such hearing at which oral testimony is presented shall be open to the public, except that the Presiding Officer may exclude the public to the extent necessary to allow presentation of information which may be entitled to confidential treatment under section 14 of TSCA or part 2 of this title.

§745.227 Work practice standards for conducting lead-based paint activities: target housing and child-occupied facilities.

(a) *Effective date, applicability, and terms.* (1) Beginning on March 1, 1999, all lead-based paint activities shall be performed pursuant to the work practice standards contained in this section.

(2) When performing any lead-based paint activity described by the certified individual as an inspection, lead-hazard screen, risk assessment or abatement, a certified individual must perform that activity in compliance with the appropriate requirements below.

(3) Documented methodologies that are appropriate for this section are found in the following: The U.S. Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing; the EPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil; the EPA Residential Sampling for Lead: Protocols for Dust and Soil Sampling (EPA report number 7474–R–95–001); Regulations, guidance, methods or protocols issued by States and Indian Tribes that have been authorized by EPA; and other equivalent methods and quidelines.

(4) Clearance levels are appropriate for the purposes of this section may be found in the EPA Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead Contaminiated Soil or other equivalent guidelines.

(b) *Inspection.* (1) An inspection shall be conducted only by a person certified by EPA as an inspector or risk assessor and, if conducted, must be conducted according to the procedures in this paragraph.

(2) When conducting an inspection, the following locations shall be selected according to documented methodologies and tested for the presence of lead-based paint:

(i) In a residential dwelling and child-occupied facility, each component with a distinct painting history and each exterior component with a distinct painting history shall be tested for lead-based paint, except those components that the inspector or risk assessor determines to have been replaced after 1978, or to not contain lead-based paint; and

(ii) In a multi-family dwelling or child-occupied facility, each component with a distinct painting history in every common area, except those components that the inspector or risk assessor determines to have been replaced after 1978, or to not contain lead-based paint.

(3) Paint shall be sampled in the following manner: (i) The analysis of paint to determine the presence of lead shall be conducted using documented methodologies which incorporate adequate quality control procedures: and/or

(ii) All collected paint chip samples shall be analyzed according to paragraph (f) of this section to determine if they contain detectable levels of lead that can be quantified numerically.

(4) The certified inspector or risk assessor shall prepare an inspection report which shall include the following information:

(i) Date of each inspection.

(ii) Address of building.

(iii) Date of construction.

(iv) Apartment numbers (if applicable).

(v) Name, address, and telephone number of the owner or owners of each residential dwelling or child-occupied facility.

(vi) Name, signature, and certification number of each certified inspector and/or risk assessor conducting testing.

(vii) Name, address, and telephone number of the certified firm employing each inspector and/or risk assessor, if applicable.

(viii) Each testing method and device and/or sampling procedure employed for paint analysis, including quality control data and, if used, the serial number of any x-ray fluorescence (XRF) device.

(ix) Specific locations of each painted component tested for the presence of lead-based paint.

(x) The results of the inspection expressed in terms appropriate to the sampling method used.

(c) *Lead hazard screen.* (1) A lead hazard screen shall be conducted only by a person certified by EPA as a risk assessor.

(2) If conducted, a lead hazard screen shall be conducted as follows:

(i) Background information regarding the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause lead-based paint exposure to one or more children age 6 years and under shall be collected.

(ii) A visual inspection of the residential dwelling or child-occupied facility shall be conducted to:

(A) Determine if any deteriorated paint is present, and

(B) Locate at least two dust sampling locations.

(iii) If deteriorated paint is present, each surface with deteriorated paint, which is determined, using documented methodologies, to be in poor condition and to have a distinct painting history, shall be tested for the presence of lead.

(iv) In residential dwellings, two composite dust samples shall be collected, one from the floors and the other from the windows, in rooms, hallways or stairwells where one or more children, age 6 and under, are most likely to come in contact with dust.

(v) In multi-family dwellings and child-occupied facilities, in addition to the floor and window samples required in paragraph (c)(1)(iii) of this section, the risk assessor shall also collect composite dust samples from common areas where one or more children, age 6 and under, are most likely to come into contact with dust.

(3) Dust samples shall be collected and analyzed in the following manner:

(i) All dust samples shall be taken using documented methodologies that incorporate adequate quality control procedures.

(ii) All collected dust samples shall be analyzed according to paragraph (f) of this section to determine if they contain detectable levels of lead that can be quantified numerically.

(4) Paint shall be sampled in the following manner: (i) The analysis of paint to determine the presence of lead shall be conducted using documented methodologies which incorporate adequate quality control procedures; and/or

(ii) All collected paint chip samples shall be analyzed according to paragraph (f) of this section to determine if they contain detectable levels of lead that can be quantified numerically.

(5) The risk assessor shall prepare a lead hazard screen report, which shall include the following information:

(i) The information required in a risk assessment report as specified in paragraph (d) of this section, including

paragraphs (d)(11)(i) through (d)(11)(xiv), and excluding paragraphs (d)(11)(xv) through (d)(11)(xviii) of this section. Additionally, any background information collected pursuant to paragraph (c)(2)(i) of this section shall be included in the risk assessment report; and

(ii) Recommendations, if warranted, for a follow-up risk assessment, and as appropriate, any further actions.

(d) *Risk assessment.* (1) A risk assessment shall be conducted only by a person certified by-EPA as a risk assessor and, if conducted, must be conducted according to the procedures in this paragraph.

(2) A visual inspection for risk assessment of the residential dwelling or child-occupied facility shall be undertaken to locate the existence of deteriorated paint, assess the extent and causes of the deterioration, and other potential lead-based paint hazards.

(3) Background information regarding the physical characteristics of the residential dwelling or child-occupied facility and occupant use patterns that may cause lead-based paint exposure to one or more children age 6 years and under shall be collected.

(4) Each surface with deteriorated paint, which is determined, using documented methodologies, to be in poor condition and to have a distinct painting history, shall be tested for the presence of lead. Each other surface determined, using documented methodologies, to be a potential lead-based paint hazard and having a distinct painting history, shall also be tested for the presence of lead.

(5) In residential dwellings, dust samples (either composite or single-surface samples) from the window and floor shall be collected in all living areas where one or more children, age 6 and under, are most likely to come into contact with dust.

(6) For multi-family dwellings and child-occupied facilities, the samples required in paragraph (d)(4) of this section shall be taken. In addition, window and floor dust samples (either composite or single-surface samples) shall be collected in the following locations:

(i) Common areas adjacent to the sampled residential dwelling or child-occupied facility; and

(ii) Other common areas in the building where the risk assessor determines that one or more children, age 6 and under, are likely to come into contact with dust.

(7) For child-occupied facilities, window and floor dust samples (either composite or single-surface samples) shall be collected in each room, hallway or stairwell utilized by one or more children, age 6 and under, and in other common areas in the child-occupied facility where the risk assessor determines one or more children, age 6 and under, are likely to come into contact with dust.

(8) Soil samples shall be collected and analyzed for lead concentrations in the following locations:

(i) Exterior play areas where bare soil is present; and

(ii) Dripline/foundation areas where bare soil is present.

(9) Any paint, dust, or soil sampling or testing shall be conducted using documented methodologies that incorporate adequate quality control procedures.

(10) Any collected paint chip, dust, or soil samples shall be analyzed according to paragraph (f) of this section to determine if they contain detectable levels of lead that can be quantified numerically.

(11) The certified risk assessor shall prepare a risk assessment report which shall include the following information:

(i) Date of assessment.

(ii) Address of each building.

(iii) Date of construction of buildings.

(iv) Apartment number (if applicable).

(v) Name, address, and telephone number of each owner of each building.

(vi) Name, signature, and certification of the certified risk assessor conducting the assessment.

(vii) Name, address, and telephone number of the certified firm employing each certified risk assessor if applicable.

(viii) Name, address, and telephone number of each recognized laboratory conducting analysis of collected samples.

(ix) Results of the visual inspection.

(x) Testing method and sampling procedure for paint analysis employed.

(xi) Specific locations of each painted component tested for the presence of lead.

(xii) All data collected from on-site testing, including quality control data and, if used, the serial number of any XRF device.

(xiii) All results of laboratory analysis on collected paint, soil, and dust samples.

(xiv) Any other sampling results.

(xv) Any background information collected pursuant to paragraph (d)(3) of this section.

(xvi) To the extent that they are used as part of the lead-based paint hazard determination, the results of any previous inspections or analyses for the presence of lead-based paint, or other assessments of lead-based paint-related hazards.

(xvii) A description of the location, type, and severity of identified lead-based paint hazards and any other potential lead hazards.

(xviii) A description of interim controls and/or abatement options for each identified lead-based paint hazard and a suggested prioritization for addressing each hazard. If the use of an encapsulant or enclosure is recommended, the report shall recommend a maintenance and monitoring schedule for the encapsulant or enclosure.

(e) *Abatement.* (1) An abatement shall be conducted only by an individual certified by EPA, and if conducted, shall be conducted according to the procedures in this paragraph.

(2) A certified supervisor is required for each abatement project and shall be onsite during all work site preparation and during the post-abatement cleanup of work areas. At all other times when abatement activities are being conducted, the certified supervisor shall be onsite or available by telephone, pager or answering service, and able to be present at the work site in no more than 2 hours.

(3) The certified supervisor and the certified firm employing that supervisor shall ensure that all abatement activities are conducted according to the requirements of this section and all other Federal, State and local requirements.

(4) Notification of the commencement of lead-based paint abatement activities in a residential dwelling or child-occupied facility or as a result of a Federal, State, or local order shall be given to EPA prior to the commencement of abatement activities. The procedure for this notification will be developed by EPA prior to August 31, 1998.

(5) A written occupant protection plan shall be developed for all abatement projects and shall be prepared according to the following procedures:

(i) The occupant protection plan shall be unique to each residential dwelling or child-occupied facility and be developed prior to the abatement. The occupant protection plan shall describe the measures and management procedures that will be taken during the abatement to protect the building occupants from exposure to any lead-based paint hazards.

(ii) A certified supervisor or project designer shall prepare the occupant protection plan.

(6) The work practices listed below shall be restricted during an abatement as follows:

(i) Open-flame burning or torching of lead-based paint is prohibited;

(ii) Machine sanding or grinding or abrasive blasting or sandblasting of lead-based paint is prohibited unless used with High Efficiency Particulate Air (HEPA) exhaust control which removes particles of 0.3 microns or larger from the air at 99.97 percent or greater efficiency;

(iii) 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

(iv) Operating a heat gun on lead-based paint is permitted only at temperatures below 1100 degrees Fahrenheit.

(7) If conducted, soil abatement shall be conducted in one of the following ways:

(i) If soil is removed, the lead-contaminated soil shall be replaced with soil that is not lead-contaminated; or

(ii) If soil is not removed, the lead-contaminated soil shall be permanently covered, as defined in § 745.223.

(8) The following post-abatement clearance procedures shall be performed only by a certified inspector or risk assessor:

(i) Following an abatement, a visual inspection shall be performed to determine if deteriorated painted surfaces and/or visible amounts of dust, debris or residue are still present. If deteriorated painted surfaces or visible amounts of dust, debris or residue are present, these conditions must be eliminated prior to the continuation of the clearance procedures.

(ii) Following the visual inspection and any post-abatement cleanup required by paragraph (e)(8)(i) of this section, clearance sampling for lead-contaminated dust shall be conducted. Clearance sampling may be conducted by employing single-surface sampling or composite sampling techniques.

(iii) Dust samples for clearance purposes shall be taken using documented methodologies that incorporate adequate quality control procedures.

(iv) Dust samples for clearance purposes shall be taken a minimum of 1 hour after completion of final post-abatement cleanup activities.

(v) The following post-abatement clearance activities shall be conducted as appropriate based upon the extent or manner of abatement activities conducted in or to the residential dwelling or child-occupied facility:

(A) After conducting an abatement with containment between abated and unabated areas, one dust sample shall be taken from one window (if available) and one dust sample shall be taken from the floor of no less than four rooms, hallways or stairwells within the containment area. In addition, one dust sample shall be taken from the floor outside the containment area. If there are less than four rooms, hallways or stairwells within the containment area, then all rooms, hallways or stairwells shall be sampled.

(B) After conducting an abatement with no containment, two dust samples shall be taken from no less than four rooms, hallways or stairwells in the residential dwelling or child-occupied facility. One dust sample shall be taken from one window (if available) and one dust sample shall be taken from the floor of each room, hallway or stairwell selected. If there are less than four rooms, hallways or stairwells within the residential dwelling or child-occupied facility then all rooms, hallways or stairwells shall be sampled.

(C) Following an exterior paint abatement, a visible inspection shall be conducted. All horizontal surfaces in the outdoor living area closest to the abated surface shall be found to be cleaned of visible dust and debris. In addition, a visual inspection shall be conducted to determine the presence of paint chips on the dripline or next to the foundation below any exterior surface abated. If paint chips are present, they must be removed from the site and properly disposed of, according to all applicable Federal, State and local requirements.

(vi) The rooms, hallways or stairwells selected for sampling shall be selected according to documented methodologies.

(vii) The certified inspector or risk assessor shall compare the residual lead level (as determined by the laboratory analysis) from each dust sample with applicable clearance levels for lead in dust on floors and windows. If the residual lead levels in a dust sample exceed the clearance levels, all the components represented by the failed sample shall be recleaned and retested until clearance levels are met.

(9) In a multi-family dwelling with similarly constructed and maintained residential dwellings, random sampling for the purposes of clearance may be conducted provided:

(i) The certified individuals who abate or clean the residential dwellings do not know which residential dwelling will be selected for the random sample.

(ii) A sufficient number of residential dwellings are selected for dust sampling to provide a 95 percent level of confidence that no more than 5 percent or 50 of the residential dwellings (whichever is smaller) in the randomly sampled population exceed the appropriate clearance levels.

(iii) The randomly selected residential dwellings shall be sampled and evaluated for clearance according to the procedures found in paragraph (e)(8) of this section.

(10) An abatement report shall be prepared by a certified supervisor or project designer. The abatement report shall include the following information:

(i) Start and completion dates of abatement.

(ii) The name and address of each certified firm conducting the abatement and the name of each supervisor assigned to the abatement project.

(iii) The occupant protection plan prepared pursuant to paragraph (e)(5) of this section.

(iv) The name, address, and signature of each certified risk assessor or inspector conducting clearance sampling and the date of clearance testing.

(v) The results of clearance testing and all soil analyses (if applicable) and the name of each recognized laboratory that conducted the analyses.

(vi) A detailed written description of the abatement, including abatement methods used, locations of rooms and/or components where abatement occurred, reason for selecting particular abatement methods for each component, and any suggested monitoring of encapsulants or enclosures.

(f) *Collection and laboratory analysis of samples.* Any paint chip, dust, or soil samples collected pursuant to the work practice standards contained in this section shall be:

(1) Collected by persons certified by EPA as an inspector or risk assessor; and

(2) Analyzed by a laboratory recognized by EPA pursuant to section 405(b) of TSCA as being capable of performing analyses for lead compounds in paint chip, dust, and soil samples.

(g) *Composite dust sampling.* Composite dust sampling may only be conducted in the situations specified in paragraphs (c) through (e) of this section. If such sampling is conducted, the following conditions shall apply:

(1) Composite dust samples shall consist of at least two subsamples;

(2) Every component that is being tested shall be included in the sampling; and

(3) Composite dust samples shall not consist of subsamples from more than one type of component.

(h) *Recordkeeping.* All reports or plans required in this section shall be maintained by the certified firm or individual who prepared the report for

no fewer than 3 years. The certified firm or individual also shall provide copies of these reports to the building owner who contracted for its services.

§ 745.228 Accreditation of training programs: public and commercial buildings, bridges and superstructures [Reserved].

§ 745.229 Certification of individuals and firms engaged in lead-based paint activities: public and commercial buildings, bridges and superstructures [Reserved].

§ 745.230 Work practice standards for conducting lead-based paint activities: public and commercial buildings, bridges and superstructures [Reserved].

§ 745.233 Lead-based paint activities requirements.

Lead-based paint activities, as defined in this part, shall only be conducted according to the procedures and work practice standards contained in § 745.227 of this subpart. No individual or firm may offer to perform or perform any lead-based paint activity as defined in this part, unless certified to perform that activity according to the procedures in § 745.226.

§ 745.235 Enforcement.

(a) Failure or refusal to comply with any requirement of §§ 745.225, 745.226, 745.227, or 745.233 is a prohibited act under sections 15 and 409 of TSCA (15 U.S.C. 2614, 2689).

(b) Failure or refusal to establish, maintain, provide, copy, or permit access to records or reports as required by §§ 745.225, 745.226, or 745.227 is a prohibited act under sections 15 and 409 of TSCA (15 U.S.C. 2614, 2689).

(c) Failure or refusal to permit entry or inspection as required by § 745.237 and section 11 of TSCA (15 U.S.C. 2610) is a prohibited act under sections 15 and 409 of TSCA (15 U.S.C. 2614, 2689).

(d) In addition to the above, any individual or firm that performs any of the following acts shall be deemed to have committed a prohibited act under sections 15 and 409 of TSCA (15 U.S.C. 2614, 2689). These include the following:

(i) Obtaining certification through fraudulent representation;

(ii) Failing to obtain certification from EPA and performing work requiring certification at a job site; or

(iii) Fraudulently obtaining certification and engaging in any lead-based paint activities requiring certification.

(e) Violators are subject to civil and criminal sanctions pursuant to section 16 of TSCA (15 U.S.C. 2615) for each violation.

§ 745.237 Inspections.

EPA may conduct reasonable inspections pursuant to the provisions of section 11 of TSCA (15 U.S.C. 2610) to ensure compliance with this subpart.

§ 745.239 Effective dates.

This subpart L shall apply in any State or Indian Country that does not have an authorized program under subpart Q, effective August 31, 1998. In such States or Indian Country:

(a) Training programs shall not provide, offer or claim to provide training or refresher training for certification without accreditation from EPA pursuant to § 745.225 on or after March 1, 1999.

(b) No individual or firm shall perform, offer, or claim to perform lead-based paint activities, as defined in this subpart, without certification from EPA to conduct such activities pursuant to § 745.226 on or after August 30, 1999.

(c) All lead-based paint activities shall be performed pursuant to the work practice standards contained in § 745.227 on or after August 30, 1999.

Subparts M-P [Reserved]

Subpart Q—State and Indian Tribal Programs

§ 745.320 Scope and purpose.

(a) This subpart establishes the requirements that State or Tribal programs must meet for authorization by the Administrator to administer and enforce the standards, regulations, or other requirements established under TSCA section 402 and/or section 406 and establishes the procedures EPA will follow in approving, revising, and withdrawing approval of State or Tribal programs.

(b) For State or Tribal lead-based paint training and certification programs, a State or Indian Tribe may seek authorization to administer and enforce §§ 745.225, 745.226, and 745.227. The provisions of §§ 745.220, 745.223, 745.233, 745.235, 745.237, and 745.239 shall be applicable for the purposes of such program authorization.

(c) For State or Tribal pre-renovation notification programs, a State or Indian Tribe may seek authorization to administer and enforce regulations developed pursuant to TSCA section 406.

(d) A State or Indian Tribe applying for program authorization may seek either interim approval or final approval of the compliance and enforcement portion of the State or Tribal lead-based paint program pursuant to the procedures at § 745.327(a).

(e) State or Tribal submissions for program authorization shall comply with the procedures set out in this subpart.

(f) Any State or Tribal program approved by the Administrator under this subpart shall at all times comply with the requirements of this subpart.

(g) In many cases States will lack authority to regulate activities in Indian Country. This lack of authority does not impair a State's ability to obtain full program authorization in accordance with this subpart. EPA will administer the program in Indian Country if neither the State nor Indian Tribe has been granted program authorization by EPA.

§ 745.323 Definitions.

The definitions in subpart A apply to this subpart. In addition, the definitions in § 745.223 and the following definitions apply:

Indian Country means (1) all land within the limits of any American Indian reservation under the jurisdiction of the U.S. government, notwithstanding the issuance of any patent, and including rights-of-way running throughout the reservation; (2) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or outside the limits of a State; and (3) all Indian allotments, the Indian titles which have not been extinguished, including rights-of-way running through the same.

Indian Tribe means any Indian Tribe, band, nation, or community recognized by the Secretary of the Interior and exercising substantial governmental duties and powers.

§ 745.324 Authorization of State or Tribal programs.

(a) *Application content and procedures.* (1) Any State or Indian Tribe that seeks authorization from EPA to administer and enforce any provisions of subpart L of this part under section 402(a) of TSCA or the provisions of regulations developed under section 406 of TSCA shall submit an application to the Administrator in accordance with the procedures of this paragraph (a).

(2) Before developing an application for authorization, a State or Indian Tribe shall disseminate a public notice of intent to seek such authorization and provide an opportunity for a public hearing.

(3) A State or Tribal application shall include:

(i) A transmittal letter from the State Governor or Tribal Chairperson (or equivalent official) requesting program approval.

(ii) A summary of the State or Tribal program. This summary will be used to

provide notice to residents of the State or Tribe.

(iii) A description of the State or Tribal program in accordance with paragraph (b) of this section.

(iv) An Attorney General's or Tribal Counsel's (or equivalent) statement in accordance with paragraph (c) of this section.

(v) Copies of all applicable State or Tribal statutes, regulations, standards, and other materials that provide the State or Indian Tribe with the authority to administer and enforce a lead-based paint program.

(4) After submitting an application, the Agency will publish a Federal Register notice that contains an announcement of the receipt of the State or Tribal application, the summary of the program as provided by the State or Tribe, and a request for public comments to be mailed to the appropriate EPA Regional Office. This comment period shall last for no less than 45 days. EPA will consider these comments during its review of the State or Tribal application.

(5) Within 60 days of submission of a State or Tribal application, EPA will, if requested, conduct a public hearing in each State or Indian Country seeking program authorization and will consider all comments submitted at that hearing during the review of the State or Tribal application.

(b) *Program description.* A State or Indian Tribe seeking to administer and enforce a program under this subpart must submit a description of the program. The description of the State or Tribal program must include:

(1)(i) The name of the State or Tribal agency that is or will be responsible for administering and enforcing the program, the name of the official in that agency designated as the point of contact with EPA, and addresses and phone numbers where this official can be contacted.

(ii) Where more than one agency is or will be responsible for administering and enforcing the program, the State or Indian Tribe must designate a primary agency to oversee and coordinate administration and enforcement of the program and serve as the primary contact with EPA.

(iii) In the event that more than one agency is or will be responsible for administering and enforcing the program, the application must also include a description of the functions to be performed by each agency. The desciption shall explain and how the program will be coordinated by the primary agency to ensure consistency and effective administration of the lead-based paint training accreditation and certification program within the State or Indian Tribe.

(2) To demonstrate that the State or Tribal program is at least as protective as the Federal program, fulfilling the criteria in paragraph (e)(2)(i) of this section, the State or Tribal application must include:

(i) A description of the program that demonstrates that the program contains all of the elements specified in § 745.325, § 745.326, or both; and

(ii) An analysis of the State or Tribal program that compares the program to the Federal program in subpart L of this part, regulations developed pursuant to TSCA section 406, or both. This analysis shall demonstrate how the program is, in the State's or Indian Tribe's assessment, at least as protective as the elements in the Federal program at subpart L of this part, regulations developed pursuant to TSCA section 406, or both. EPA will use this analysis to evaluate the protectiveness of the State or Tribal program in making its determination pursuant to paragraph (e)(2)(i) of this section.

(3) To demonstrate that the State or Tribal program provides adequate enforcement, fulfilling the criteria in paragraph (e)(2)(ii) of this section, the State or Tribal application must include a description of the State or Tribal lead-based paint compliance and enforcement program that demonstrates that the program contains all of the elements specified at § 745.327. This description shall include copies of all policies, certifications, plans, reports, and other materials that demonstrate that the State or Tribal program contains all of the elements specified at § 745.327.

(4)(i) The program description for an Indian Tribe shall also include a map, legal description, or other information sufficient to identify the geographical extent of the territory over which the Indian Tribe exercises jurisdiction.

(ii) The program description for an Indian Tribe shall also include a demonstration that the Indian Tribe:

(A) Is recognized by the Secretary of the Interior.

(B) has an existing government exercising substantial governmental duties and powers.

(C) has adequate civil regulatory jurisdiction (as shown in the Tribal legal certification in paragraph (c)(2) of this section) over the subject matter and entities regulated.

(D) is reasonably expected to be capable of administering the Federal program for which it is seeking authorization.

(iii) If the Administrator has previously determined that an Indian Tribe has met the prerequisites in paragraphs (b)(4)(ii)(A) and (B) of this section for another EPA program, the Indian Tribe need provide only that information unique to the lead-based paint program required by paragraphs (b)(4)(ii)(C) and (D) of this section.

(c) *Attorney General's statement.* (1) A State or Indian Tribe must submit a written statement signed by the Attorney General or Tribal Counsel (or equivalent) certifying that the laws and regulations of the State or Indian Tribe provide adequate legal authority to administer and enforce the State or Tribal program. This statement shall include citations to the specific statutes and regulations providing that legal authority.

(2) The Tribal legal certification (the equivalent to the Attorney General's statement) may also be submitted and signed by an independent attorney retained by the Indian Tribe for representation in matters before EPA or the courts pertaining to the Indian Tribe's program. The certification shall include an assertion that the attorney has the authority to represent the Indian Tribe with respect to the Indian Tribe's authorization application.

(3) If a State application seeks approval of its program to operate in Indian Country, the required legal certification shall include an analysis of the applicant's authority to implement its provisions in Indian Country. The applicant shall include a map delineating the area over which it seeks to operate the program.

(d) *Program certification.* (1) At the time of submitting an application, a State may also certify to the Administrator that the State program meets the requirements contained in paragraphs (e)(2)(i) and (e)(2)(ii) of this section.

(2) If this certification is contained in a State's application, the program shall be deemed to be authorized by EPA until such time as the Administrator disapproves the program application or withdraws the program authorization. A program shall not be deemed authorized pursuant to this subpart to the extent that jurisdiction is asserted over Indian Country, including non-member fee lands within an Indian reservation.

(3) If the application does not contai such certification, the State program will be authorized only after the Administrator authorizes the program accordance with paragraph (e) of this section.

(4) This certification shall take the form of a letter from the Governor or t Attorney General to the Administrato The certification shall reference the program analysis in paragraph (b)(3)

this section as the basis for concluding that the State program is at least as protective as the Federal program, and provides adequate enforcement.

(e) *EPA approval.* (1) EPA will fully review and consider all portions of a State or Tribal application.

(2) Within 180 days of receipt of a complete State or Tribal application, the Administrator shall either authorize the program or disapprove the application. The Administrator shall authorize the program, after notice and the opportunity for public comment and a public hearing, only if the Administrator finds that:

(i)(A) In the case of an application to authorize the State or Indian Tribe to administer and enforce the provisions of subpart L of this part, the State or Tribal program is at least as protective of human health and the environment as the corresponding Federal program under subpart L of this part; and/or

(B) In the case of an application to authorize the State or Indian Tribe to administer and enforce the regulations developed pursuant to TSCA section 406, the State or Tribal program is at least as protective of human health and the environment as the Federal regulations developed pursuant to TSCA section 406.

(ii) The State or Tribal program provides adequate enforcement.

(3) EPA shall notify in writing the State or Indian Tribe of the Administrator's decision to authorize the State or Tribal program or disapprove the State's or Indian Tribe's application.

(4) If the State or Indian Tribe applies for authorization of State or Tribal programs under both subpart L and regulations developed pursuant to TSCA section 406, EPA may, as appropriate, authorize one program and disapprove the other.

(f) *EPA administration and enforcement.* (1) If a State or Indian Tribe does not have an authorized program to administer and enforce subpart L of this part in effect by August 31, 1998, the Administrator shall, by such date, establish and enforce the provisions of subpart L of this part as the Federal program for that State or Indian Country.

(2) If a State or Indian Tribe does not have an authorized program to administer and enforce regulations developed pursuant to TSCA section 406 in effect by August 31, 1998, the Administrator shall, by such date, establish and enforce the provisions of regulations developed pursuant to TSCA section 406 as the Federal program for that State or Indian Country.

(3) Upon authorization of a State or Tribal program, pursuant to paragraph (d) or (e) of this section, it shall be an unlawful act under sections 15 and 409 of TSCA for any person to fail or refuse to comply with any requirements of such program.

(g) *Oversight.* EPA shall periodically evaluate the adequacy of a State's or Indian Tribe's implementation and enforcement of its authorized programs.

(h) *Reports.* Beginning 12 months after the date of program authorization, the primary agency for each State or Indian Tribe that has an authorized program shall submit a written report to the EPA Regional Administrator for the Region in which the State or Indian Tribe is located. This report shall be submitted at least once every 12 months for the first 3 years after program authorization. If these reports demonstrate successful program implementation, the Agency will automatically extend the reporting interval to every 2 years. If the subsequent reports demonstrate problems with implementation, EPA will require a return to annual reporting until the reports demonstrate successful program implementation, at which time the Agency will extend the reporting interval to every 2 years.

The report shall include the following information:

(1) Any significant changes in the content or administration of the State or Tribal program implemented since the previous reporting period; and

(2) All information regarding the lead-based paint enforcement and compliance activities listed at § 745.327(d) "Summary on Progress and Performance."

(i) *Withdrawal of authorization.* (1) If EPA concludes that a State or Indian Tribe is not administering and enforcing an authorized program in compliance with the standards, regulations, and other requirements of sections 401 through 412 of TSCA and this subpart, the Administrator shall notify the primary agency for the State or Indian Tribe in writing and indicate EPA's intent to withdraw authorization of the program.

(2) The Notice of Intent to Withdraw shall:

(i) Identify the program aspects that EPA believes are inadequate and provide a factual basis for such findings.

(ii) Include copies of relevant documents.

(iii) Provide an opportunity for the State or Indian Tribe to respond either in writing or at a meeting with appropriate EPA officials.

(3) EPA may request that an informal conference be held between representatives of the State or Indian Tribe and EPA officials.

(4) Prior to issuance of a withdrawal, a State or Indian Tribe may request that EPA hold a public hearing. At this hearing, EPA, the State or Indian Tribe, and the public may present facts bearing on whether the State's or Indian Tribe's authorization should be withdrawn.

(5) If EPA finds that deficiencies warranting withdrawal did not exist or were corrected by the State or Indian Tribe, EPA may rescind its Notice of Intent to Withdraw authorization.

(6) Where EPA finds that deficiencies in the State or Tribal program exist that warrant withdrawal, an agreement to correct the deficiencies shall be jointly prepared by the State or Indian Tribe and EPA. The agreement shall describe the deficiencies found in the program, specify the steps the State or Indian Tribe has taken or will take to remedy the deficiencies, and establish a schedule, no longer than 180 days, for each remedial action to be initiated.

(7) If the State or Indian Tribe does not respond within 60 days of issuance of the Notice of Intent to Withdraw or an agreement is not reached within 180 days after EPA determines that a State or Indian Tribe is not in compliance with the Federal program, the Agency shall issue an order withdrawing the State's or Indian Tribe's authorization.

(8) By the date of such order, the Administrator shall establish and enforce the provisions of subpart L of this part or regulations developed pursuant to TSCA section 406, or both, as the Federal program for that State or Indian Country.

§ 745.325 Lead-based paint activities: State and Tribal program requirements.

(a) *Program elements.* To receive authorization from EPA, a State or Tribal program must contain at least the following program elements for lead-based paint activities:

(1) Procedures and requirements for the accreditation of lead-based paint activities training programs.

(2) Procedures and requirements for the certification of individuals engaged in lead-based paint activities.

(3) Work practice standards for the conduct of lead-based paint activities.

(4) Requirements that all lead-based paint activities be conducted by appropriately certified contractors.

(5) Development of the appropriate infrastructure or government capacity to effectively carry out a State or Tribal program.

(b) *Accreditation of training programs.* The State or Indian Tribe must have either:

(1) Procedures and requirements for the accreditation of training programs that establish:

(i) Requirements for the accreditation of training programs, including but not limited to:

(A) Training curriculum requirements.

(B) Training hour requirements.

(C) Hands-on training requirements.

(D) Trainee competency and proficiency requirements.

(E) Requirements for training program quality control.

(ii) Procedures for the re-accreditation of training programs.

(iii) Procedures for the oversight of training programs.

(iv) Procedures for the suspension, revocation, or modification of training program accreditations; or

(2) Procedures or regulations, for the purposes of certification, for the acceptance of training offered by an accredited training provider in a State or Tribe authorized by EPA.

(c) *Certification of individuals.* The State or Indian Tribe must have requirements for the certification of individuals that:

(1) Ensure that certified individuals:

(i) Are trained by an accredited training program; and

(ii) Possess appropriate education or experience qualifications for certification.

(2) Establish procedures for re-certification.

(3) Require the conduct of lead-based paint activities in accordance with work practice standards established by the State or Indian Tribe.

(4) Establish procedures for the suspension, revocation, or modification of certifications.

(5) Establish requirements and procedures for the administration of a third-party certification exam.

(d) *Work practice standards for the conduct of lead-based paint activities.* The State or Indian Tribe must have requirements or standards that ensure that lead-based paint activities are conducted reliably, effectively, and safely. At a minimum the State's or Indian Tribe's work practice standards for conducting inspections, risk assessments, and abatements must contain the requirements specified in paragraphs (d)(1), (d)(2), and (d)(3) of this section.

(1) The work practice standards for the inspection for the presence of lead-based paint must require that:

(i) Inspections are conducted only by individuals certified by the appropriate State or Tribal authority to conduct inspections.

(ii) Inspections are conducted in a way that identifies the presence of lead-based paint on painted surfaces within the interior or on the exterior of a residential dwelling or child-occupied facility.

(iii) Inspections are conducted in a way that uses documented methodologies that incorporate adequate quality control procedures.

(iv) A report is developed that clearly documents the results of the inspection.

(v) Records are retained by the certified inspector or the firm.

(2) The work practice standards for risk assessment must require that:

(i) Risk assessments are conducted only by individuals certified by the appropriate State or Tribal authority to conduct risk assessments.

(ii) Risk assessments are conducted in a way that identifies and reports the presence of lead-based paint hazards.

(iii) Risk assessments consist of, at least:

(A) An assessment, including a visual inspection, of the physical characteristics of the residential dwelling or child-occupied facility; and

(B) Environmental sampling for lead in paint, dust, and soil.

(iv) The risk assessor develops a report that clearly presents the results of the assessment and recommendations for the control or elimination of all identified hazards.

(v) The certified risk assessor or the firm retains the appropriate records.

(3) The work practice standards for abatement must require that:

(i) Abatements are conducted only by individuals certified by the appropriate State or Tribal authority to conduct or supervise abatements.

(ii) Abatements permanently eliminate lead-based paint hazards and are conducted in a way that does not increase the hazards of lead-based paint to the occupants of the dwelling or child-occupied facility.

(iii) Abatements include post-abatement lead in dust clearance sampling and conformance with clearance levels established or adopted by the State or Indian Tribe.

(iv) The abatement contractor develops a report that describes areas of the residential dwelling or child-occupied facility abated and the techniques employed.

(v) The certified abatement contractor or the firm retains appropriate records.

§ 745.326 Pre-renovation notification: State and Tribal program requirements.

(a) *Program elements.* To receive authorization from EPA, a State or Tribal program must contain the following program elements for renovation disclosure:

(1) Procedures and requirements for the distribution of lead hazard information to owners and occupants of target housing before renovations for compensation; and

(2) An approved lead hazard information pamphlet meeting the requirements of section 406 of TSCA, as determined by EPA. EPA will provide States or Tribes with guidance on what is necessary for a State or Tribal pamphlet approval application.

(b) *Program to distribute lead information.* To be considered at least as protective as the Federal requirements for pre-renovation distribution of information, the State or Indian Tribe must have procedures and requirements that establish:

(1) Clear standards for identifying home improvement activities that trigger the pamphlet distribution requirements; and

(2) Procedures for distributing the lead hazard information to owners and occupants of the housing prior to renovation activities.

(c) *Distribution of acceptable lead hazard information.* To be considered at least as protective as the Federal requirements for the distribution of a lead hazard information pamphlet, the State or Indian Tribe must either:

(1) Distribute the lead hazard information pamphlet developed by EPA under section 406(a) of TSCA, titled *Protect Your Family from Lead in Your Home*; or

(2) Distribute an alternate pamphlet or package of lead hazard information that has been submitted by the State or Tribe, reviewed by EPA, and approved by EPA for use in that State or Tribe. Such information must meet the content requirements prescribed by section 406(a) of TSCA, and be in a format that is readable to the diverse audience of housing owners and occupants in that State or Tribe.

§ 745.327 State or Indian Tribal lead-based paint compliance and enforcement programs.

(a) *Approval of compliance and enforcement programs.* A State or Indian Tribe seeking authorization of a lead-based paint program can apply for and receive either interim or final approval of the compliance and enforcement program portion of its lead-based paint program. Indian Tribes are not required to exercise criminal enforcement jurisdiction as a condition for program authorization.

(1) *Interim approval.* Interim approval of the compliance and enforcement program portion of the State or Tribal lead-based paint program may be granted by EPA only once, and subject to a specific expiration date.

(i) To be considered adequate for purposes of obtaining interim approval for the compliance and enforcement program portion of a State or Tribal lead-based paint program, a State or Indian Tribe must, in its application described at § 745.324(a):

(A) Demonstrate it has the legal authority and ability to immediately implement the elements in paragraph (b) of this section. This demonstration shall include a statement that the State or Indian Tribe, during the interim approval period, shall carry out a level of compliance monitoring and enforcement necessary to ensure that the State or Indian Tribe addresses any significant risks posed by noncompliance with lead-based paint activity requirements.

(B) Present a plan with time frames identified for implementing in the field each element in paragraph (c) of this section. All elements of paragraph (c) of this section must be fully implemented no later than 3 years from the date of EPA's interim approval of the compliance and enforcement program portion of a State or Tribal lead-based paint program. A statement of resources must be included in the State or Tribal plan which identifies what resources the State or Indian Tribe intends to devote to the administration of its lead-based paint compliance and enforcement program.

(C) Agree to submit to EPA the Summary on Progress and Performance of lead-based paint compliance and enforcement activities as described at paragraph (d) of this section.

(ii) Any interim approval granted by EPA for the compliance and enforcement program portion of a State or Tribal lead-based paint program will expire no later than 3 years from the date of EPA's interim approval. One hundred and eighty days prior to this expiration date, a State or Indian Tribe shall apply to EPA for final approval of the compliance and enforcement program portion of a State or Tribal lead-based paint program. Final approval shall be given to any State or Indian Tribe which has in place all of the elements of paragraphs (b), (c), and (d) of this section. If a State or Indian Tribe does not receive final approval for the compliance and enforcement program portion of a State or Tribal lead-based paint program by the date 3 years after the date of EPA's interim approval, the Administrator shall, by such date, initiate the process to withdraw the State or Indian Tribe's authorization pursuant to § 745.324(i).

(2) *Final approval.* Final approval of the compliance and enforcement program portion of a State or Tribal lead-based paint program can be granted by EPA either through the application process described at § 745.324(a), or, for States or Indian Tribes which previously received interim approval as described in paragraph (a)(1) of this section, through a separate application addressing only the compliance and enforcement program portion of a State or Tribal lead-based paint program.

(i) For the compliance and enforcement program to be considered adequate for final approval through the application described at § 745.324(a), a State or Indian Tribe must, in its application:

(A) Demonstrate it has the legal authority and ability to immediately implement the elements in paragraphs (b) and (c) of this section.

(B) Submit a statement of resources which identifies what resources the State or Indian Tribe intends to devote to the administration of its lead-based paint compliance and enforcement program.

(C) Agree to submit to EPA the Summary on Progress and Performance of lead-based paint compliance and enforcement activities as described at paragraph (d) of this section.

(ii) For States or Indian Tribes which previously received interim approval as described in paragraph (a)(1) of this section, in order for the State or Tribal compliance and enforcement program to be considered adequate for final approval through a separate application addressing only the compliance and enforcement program portion of a State or Tribal lead-based paint program, a State or Indian Tribe must, in its application:

(A) Demonstrate that it has the legal authority and ability to immediately implement the elements in paragraphs (b) and (c) of this section.

(B) Submit a statement which identifies the resources the State or Indian Tribe intends to devote to the administration of its lead-based paint compliance and enforcement program.

(C) Agree to submit to EPA the Summary on Progress and Performance of lead-based paint compliance and enforcement activities as described at paragraph (d) of this section.

(D) To the extent not previously submitted through the application described at § 745.324(a), submit copies of all applicable State or Tribal statutes, regulations, standards, and other material that provide the State or Indian Tribe with authority to administer and enforce the lead-based paint compliance and enforcement program, and copies of the policies, certifications, plans, reports, and any other documents that demonstrate that the program meets the requirements established in paragraphs (b) and (c) of this section.

(b) *Standards, regulations, and authority.* The standards, regulations, and authority described in paragraphs (b)(1) through (b)(4) of this section are part of the required elements for the compliance and enforcement portion of a State or Tribal lead-based paint program.

(1) *Lead-based paint activities and requirements.* State or Tribal lead-based paint compliance and enforcement programs will be considered adequate if the State or Indian Tribe demonstrates, in its application at § 745.324(a), that it has established a lead-based paint program containing the following requirements:

(i) Accreditation of training programs as described at § 745.325(b).

(ii) Certification of individuals engaged in lead-based paint activities as described at § 745.325(c).

(iii) Standards for the conduct of lead-based paint activities as described at § 745.325(d); and, as appropriate,

(iv) Requirements that regulate the conduct of pre-renovation notification activities as described at § 745.326.

(2) *Authority to enter.* State or Tribal officials must be able to enter, through consent, warrant, or other authority, premises or facilities where lead-based paint activities violations may occur for purposes of conducting inspections.

(i) State or Tribal officials must be able to enter premises or facilities where those engaged in training for lead-based paint activities conduct business.

(ii) For the purposes of enforcing a pre-renovation notification program, State or Tribal officials must be able to enter a renovator's place of business.

(iii) State or Tribal officials must have authority to take samples and review records as part of the lead-based paint activities inspection process.

(3) *Flexible remedies.* A State or Tribal lead-based paint compliance and enforcement program must provide for a diverse and flexible array of enforcement remedies. At a minimum, the remedies that must be reflected in an enforcement response policy must include the following:

(i) Warning letters, Notices of Noncompliance, Notices of Violation, or the equivalent;

(ii) Administrative or civil actions, including penalty authority (e.g., accreditation or certification suspension, revocation, or modification); and

(iii) Authority to apply criminal sanctions or other criminal authority using existing State or Tribal laws, as applicable.

(4) *Adequate resources.* An application must include a statement that identifies the resources that will be devoted by the State or Indian Tribe to the administration of the State or Tribal lead-based paint compliance and enforcement program. This statement must address fiscal and personnel resources that will be devoted to the program.

(c) *Performance elements.* The performance elements described in paragraphs (c)(1) through (c)(7) of this section are part of the required elements for the compliance and enforcement program portion of a State or Tribal lead-based paint program.

(1) *Training.* A State or Tribal lead-based paint compliance and enforcement program must implement a process for training enforcement and inspection personnel and ensure that enforcement personnel and inspectors are well trained. Enforcement personnel must understand case development procedures and the maintenance of proper case files. Inspectors must successfully demonstrate knowledge of the requirements of the particular discipline (e.g., abatement supervisor, and/or abatement worker, and/or lead-based paint inspector, and/or risk assessor, and/or project designer) for which they have compliance monitoring and enforcement responsibilities. Inspectors must also be trained in violation discovery, methods of obtaining consent, evidence gathering, preservation of evidence and chain-of-custody, and sampling procedures. A State or Tribal lead-based paint compliance and enforcement program must also implement a process for the continuing education of enforcement and inspection personnel.

(2) *Compliance assistance.* A State or Tribal lead-based paint compliance and enforcement program must provide compliance assistance to the public and the regulated community to facilitate awareness and understanding of and compliance with State or Tribal requirements governing the conduct of lead-based paint activities. The type and nature of this assistance can be defined by the State or Indian Tribe to achieve this goal.

(3) *Sampling techniques.* A State or Tribal lead-based paint compliance and enforcement program must have the technological capability to ensure compliance with the lead-based paint program requirements. A State or Tribal application for approval of a lead-based paint program must show that the State or Indian Tribe is technologically capable of conducting a lead-based paint compliance and enforcement program. The State or Tribal program must have access to the facilities and equipment necessary to perform sampling and laboratory analysis as needed. This laboratory facility must be a recognized laboratory as defined at § 745.223, or the State or Tribal program must implement a quality assurance program that ensures appropriate quality of laboratory personnel and protects the integrity of analytical data.

(4) *Tracking tips and complaints.* A State or Tribal lead-based paint compliance and enforcement program must demonstrate the ability to process and react to tips and complaints or other information indicating a violation.

(5) *Targeting inspections.* A State or Tribal lead-based paint compliance and enforcement program must demonstrate the ability to target inspections to ensure compliance with the lead-based paint program requirements. Such targeting must include a method for obtaining and using notifications of commencement of abatement activities.

(6) *Follow up to inspection reports.* A State or Tribal lead-based paint compliance and enforcement program must demonstrate the ability to reasonably, and in a timely manner, process and follow-up on inspection reports and other information generated through enforcement-related activities associated with a lead-based paint program. The State or Tribal program must be in a position to ensure correction of violations and, as appropriate, effectively develop and issue enforcement remedies/responses to follow up on the identification of violations.

(7) *Compliance monitoring and enforcement.* A State or Tribal lead-based paint compliance and enforcement program must demonstrate, in its application for approval, that it is in a position to implement a compliance monitoring and enforcement program. Such a compliance monitoring and enforcement program must ensure correction of violations, and encompass either planned and/or responsive lead-based paint compliance inspections and development/issuance of State or Tribal enforcement responses which are appropriate to the violations.

(d) *Summary on Progress and Performance.* The Summary on Progress and Performance described below is part of the required elements for the compliance and enforcement program portion of a State or Tribal lead-based paint program. A State or Tribal lead-based paint compliance and enforcement program must submit to the appropriate EPA Regional Administrator a report which summarizes the results of implementing the State or Tribal lead-based paint compliance and enforcement program, including a summary of the scope of the regulated community within the State or Indian Tribe (which would include the number of individuals and firms certified in lead-based paint activities and the number of training programs accredited), the inspections conducted, enforcement actions taken, compliance assistance provided, and the level of resources committed by the State or Indian Tribe to these activities. The report shall be submitted according to the requirements at § 745.324(h).

(e) *Memorandum of Agreement.* An Indian Tribe that obtains program approval must establish a Memorandum of Agreement with the Regional Administrator. The Memorandum of Agreement shall be executed by the Indian Tribe's counterpart to the State Director (e.g., the Director of Tribal Environmental Office, Program or Agency). The Memorandum of Agreement must include provisions for the timely and appropriate referral to the Regional Administrator for those criminal enforcement matters where that Indian Tribe does not have the authority (e.g., those addressing criminal violations by non-Indians or violations meriting penalties over $5,000). The Agreement must also identify any enforcement agreements that may exist between the Indian Tribe and any State.

§ 745.330 Grants.

The Administrator, or a designated equivalent, may make grants to States and Indian Tribes, that meet the requirements of § 745.324(e)(2)(i) and (e)(2)(ii), under section 404(g) of TSCA to develop and carry out programs authorized pursuant to this subpart. Grants made under this section are subject to the requirements of 40 CFR part 31.

§ 745.339 Effective dates.

States and Indian Tribes may seek authorization to administer and enforce subpart L pursuant to this subpart effective October 28, 1996.

[FR Doc. 96–21954 Filed 8–28–96; 8:45 am]
BILLING CODE 6560–50–F

ject shall breathe normally for a least one minute.

b. *Deep Breathing (DB).* In the normal standing position the subject shall do deep breathing for at least one minute pausing so as not to hyperventilate.

c. *Turning head side to side (SS).* Standing in place the subject shall slowly turn his head from side to side between the extreme positions to each side. The head shall be held at each extreme position for a least 5 seconds. Perform for at least five complete cycles.

d. *Moving head up and down (UD).* Standing in place, the subject shall slowly move his head up and down between the extreme position straight up and the extreme position straight down. The head shall be held at each extreme position for at least 5 seconds. Perform for at least five complete cycles.

e. *Reading (R).* The subject shall read out slowly and loud so as to be heard clearly by the test conductor or monitor. The test subject shall read the "rainbow passage" at the end of this section.

f. *Grimace (G).* The test subject' shall grimace, smile, frown, and generally contort the face using the facial muscles. Continue for at least 15 seconds.

g. *Bend over and touch toes (B).* The test subject shall bend at the waist and touch toes and return to upright position. Repeat for at least one minute.

h. *Jogging in place (J).* The test subject shall perform jog in place for at least one minute.

i. *Normal Breathing (NB).* In the normal standing position, without talking, the subject shall breathe normally for at least one minute.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

6. *Termination of Tests.* The test shall be terminated whenever any single peak penetration exceeds 5 percent for half-masks and 1 percent for full facepieces. The test subject may be refitted and retested. If two of the three required tests are terminated, the fit shall be deemed inadequate. (See paragraph 4.h.).

7. *Calculation of Fit Factors.* a. The fit factor determined by the quantitative fit test equals the average concentration inside the respirator.

b. The average test chamber concentration is the arithmetic average of the test chamber concentration at the beginning and of the end of the test.

c. The average peak concentration of the challenge agent inside the respirator shall be the arithmetic average peak concentrations for each of the nine exercises of the test which are computed as the arithmetic average of the peak concentrations found for each breath during the exercise.

d. The average peak concentration for an exercise may be determined graphically if there is not a great variation in the peak concentrations during a single exercise.

8. *Interpretation of Test Results.* The fit factor measured by the quantitative fit testing shall be the lowest of the three protection factors resulting from three independent tests.

9. *Other Requirements.* a. The test subject shall not be permitted to wear a half-mask or full facepiece if the minimum fit factor of 250 or 1,250, respectively, cannot be obtained. If hair growth or apparel interfere with a satisfactory fit, then they shall be altered or removed so as to eliminate interference and allow a satisfactory fit. If a satisfactory fit is still not attained, the test subject must use a positive-pressure respirator such as powered air-purifying respirators, supplied air respirator, or self-contained breathing apparatus.

b. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface.

c. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician to determine whether the test subject can wear a respirator while performing her or his duties.

d. The test subject shall be given the opportunity to wear the assigned respirator for one week. If the respirator does not provide a satisfactory fit during actual use, the test subject may request another QNFT which shall be performed immediately.

e. A respirator fit factor card shall be issued to the these [sic] subject with the following information:

(1) Name.

(2) Date of fit test.

(3) Protection factors obtained through each manufacturer, model and approval number of respirator tested.

(4) Name and signature of the person that conducted the test.

f. Filters used for qualitative or quantitative fit testing shall be replaced weekly, whenever increased breathing resistance is encountered, or when the test agent has altered the integrity of the filter media. Organic vapor cartridges/canisters shall be replaced daily or sooner if there is any indication of breakthrough by the test agent.

10. *Retesting.* In addition, because the sealing of the respirator may be affected, quantitative fit testing shall be repeated immediately when the test subject has a:

(1) Weight change of 20 pounds or more,

(2) Significant facial scarring in the area of the facepiece seal,

(3) Significant dental changes; i.e.: multiple extractions without prothesis, or acquiring dentures.

(4) Reconstructive or cosmetic surgery, or

(5) Any other condition that may interfere with facepiece sealing.

11. *Recordkeeping.* a. A summary of all test results shall be maintained for three years. The summary shall include:

(1) Name of test subject.

(2) Date of testing.

(3) Name of the test conductor.

(4) Fit factors obtained from every respirator tested (indicate manufacturer, model, size and approval number).

b. A copy of all test data including the strip chart and results shall kept for at least five years.

(Approved by the Office of Management and Budget under control number 1218–0183)

[1926.60 OMB control number added by 57 FR 49649, November 3, 1992]

§1926.62 Lead.

[1926.62 added by 58 FR 26627, May 4, 1993]

(a) *Scope.* This section applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard. Construction work is defined as work for construction, alteration and/or repair, including painting and decorating. It includes but is not limited to the following:

(1) Demolition or salvage of structures where lead or materials containing lead are present;

(2) Removal or encapsulation of materials containing lead;

(3) New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;

(4) Installation of products containing lead;

(5) Lead contamination/emergency cleanup;

(6) Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed, and

(7) Maintenance operations associated with the construction activities described in this paragraph.

(b) *Definitions.*

Action level means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 $\mu g/m^3$) calculated as an 8-hour time-weighted average (TWA).

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Competent person means one who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Director means the Director, National Institute for Occupational Safety and

Health (NIOSH), U.S. Department of Health and Human Services, or designee.

Lead means metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

This section means this standard.

(c) *Permissible exposure limit.* (1) The employer shall assure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air (50 $\mu g/m^3$) averaged over an 8-hour period.

(2) If an employee is exposed to lead for more than 8 hours in any work day the employees' allowable exposure, as a time weighted average (TWA) for that day, shall be reduced according to the following formula:

Allowable employee exposure (in $\mu g/m^3$)=400 divided by hours worked in the day.

(3) When respirators are used to limit employee exposure as required under paragraph (c) of this section and all the requirements of paragraphs (e)(1) and (f) of this section have been met, employee exposure may be considered to be at the level provided by the protection factor of the respirator for those periods the respirator is worn. Those periods may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure.

(d) *Exposure assessment*— (1) *General.* (i) Each employer who has a workplace or operation covered by this standard shall initially determine if any employee may be exposed to lead at or above the action level.

(ii) For the purposes of paragraph (d) of this section, employee exposure is that exposure which would occur if the employee were not using a respirator.

(iii) With the exception of monitoring under paragraph (d)(3), where monitoring is required under this section, the employer shall collect personal samples representative of a full shift including at least one sample for each job classification in each work area either for each shift or for the shift with the highest exposure level.

(iv) Full shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead.

(2) *Protection of employees during assessment of exposure.*

(i) With respect to the lead related tasks listed in paragraph (d)(2)(i) of this section, where lead is present, until the employer performs an employee exposure assessment as required in paragraph (d) of this section and documents that the employee performing any of the listed tasks is not exposed above the PEL, the employer shall treat the employee as if the employee were exposed above the PEL, and not in excess of ten (10) times the PEL, and shall implement employee protective measures prescribed in paragraph (d)(2)(v) of this section. The tasks covered by this requirement are:

(A) Where lead containing coatings or paint are present: Manual demolition of structures (e.g, dry wall), manual scraping, manual sanding, heat gun applications, and power tool cleaning with dust collection systems;

(B) Spray painting with lead paint

(ii) In addition, with regard to tasks not listed in paragraph (d)(2)(i), where the employee has any reason to believe that an employee performing the task may be exposed to lead in excess of the PEL, until the employer performs an employee exposure assessment as required by paragraph (d) of this section and documents that the employee's lead exposure is not above the PEL the employer shall treat the employee as if the employee were exposed above the PEL and shall implememt employee protective measures as prescribed in paragraph (d)(2)(v) of this section.

(iii) With respect to the tasks listed in paragraph (d)(2)(iii) of this section, where lead is present, until the employer performs an employee exposure assessment as required in paragraph (d) of this section, and documents that the employee performing any of the listed tasks is not exposed in excess of 500 $\mu g/m^3$, the employer shall treat the employee as if the employee were exposed to lead in excess of 500 $\mu g/m^3$ and shall implement employee protective measures as prescribed in paragraph (d)(2)(v) of this section. Where the employer does establish that the employee is exposed to levels of lead below 500 $\mu g/m^3$, the employer may provide the exposed employee with the appropriate respirator prescribed for such use at such lower exposures, in accordance with Table 1 of this section. The tasks covered by this requirement are:

(A) Using lead containing mortar; lead burning

(B) Where lead containing coatings or paint are present: rivet busting; power tool cleaning without dust collection systems; cleanup activities where dry expendable abrasives are used; and abrasive blasting enclosure movement and removal.

(iv) With respect to the tasks listed in paragraph (d)(2)(iv) of this section, where lead is present, until the employer performs an employee exposure assessment as required in paragraph (d) of this section and documents that the employee performing any of the listed tasks is not exposed to lead in excess of 2,500 $\mu g/m^3$ (50PEL), the employer shall treat the employee as if the employee were exposed to lead in excess of 2,500 $\mu g/m^3$ and shall implement employee protective measures as prescribed in paragraph (d)(2)(v) of this section. Where the employer does establish that the employee is exposed to levels of lead below 2,500 $\mu g/m3$, the employer may provide the exposed employee with the appropriate respirator prescribed for use at such lower exposures, in accordance with Table I of this section. Interim protection as described in this paragaraph is required where lead containing coatings or paint are present on structures when performing:

(A) Abrasive blasting,

(B) Welding,

(C) Cutting, and

(D) Torch burning.

(v) Until the employer performs an employee exposure assessment as required under paragraph (d) of this section and determines actual employee exposure, the employer shall provide to employees performing the tasks described in paragraphs (d)(2)(i), (d)(2)(ii), (d)(2)(iii), and (d)(2)(iv) of this section with interim protection as follows:

(A) Appropriate respiratory protection in accordance with paragraph (f) of this section.

(B) Appropriate personal protective clothing and equipment in accordance with paragraph (g) of this section.

(C) Change areas in accordance with paragraph (i)(2) of this section.

(D) Hand washing facilities in accordance with paragraph (i)(5) of this section.

(E) Biological monitoring in accordance with paragraph (j)(1)(i) of this section, to consist of blood sampling and analysis for lead and zinc protoporphyrin levels, and

(F) Training as required under paragraph (l)(1)(i) of this section regarding 29 CFR 1926.59, Hazard Communication; training as required under paragraph (l)(2)(ii)(C) of this section, regarding use of respirators; and training in accordance with 29 CFR 1926.21, Safety training and education.

(3) *Basis of initial determination.* (i) Except as provided under paragraphs (d)(3)(iii) and (d)(3)(iv) of this section the employer shall monitor employee exposures and shall base initial determinations on the employee exposure monitoring results and any of the following, relevant considerations:

(A) Any information, observations, or calculations which would indicate employee exposure to lead;

(B) Any previous measurements of airborne lead; and

(C) Any employee complaints of symptoms which may be attributable to exposure to lead.

(ii) Monitoring for the initial determination where performed may be limited to a representative sample of the exposed employees who the employer reasonably believes are exposed to the greatest airborne concentrations of lead in the workplace.

[Sec. 1926.62(d)(3)(ii)]

(iii) Where the employer has previously monitored for lead exposures, and the data were obtained within the past 12 months during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the employer's current operations, the employer may rely on such earlier monitoring results to satisfy the requirements of paragraphs (d)(3)(i) and (d)(6) of this section if the sampling and analytical methods meet the accuracy and confidence levels of paragraph (d)(10) of this section.

(iv) Where the employer has objective data, demonstrating that a particular product or material containing lead or a specific process, operation or activity involving lead cannot result in employee exposure to lead at or above the action level during processing, use, or handling, the employer may rely upon such data instead of implementing initial monitoring.

(A) The employer shall establish and maintain an accurate record documenting the nature and relevancy of objective data as specified in paragraph (n)(4) of this section, where used in assessing employee exposure in lieu of exposure monitoring.

(B) Objective data, as described in paragraph (d)(3)(iv) of this section, is not permitted to be used for exposure assessment in connection with paragraph (d)(2) of this section.

(4) *Positive initial determination and initial monitoring.*

(i) Where a determination conducted under paragraphs (d) (1), (2) and (3) of this section shows the possibility of any employee exposure at or above the action level the employer shall conduct monitoring which is representative of the exposure for each employee in the workplace who is exposed to lead.

(ii) Where the employer has previously monitored for lead exposure, and the data were obtained within the past 12 months during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices, and environmental conditions used and prevailing in the employer's current operations, the employer may rely on such earlier monitoring results to satisfy the requirements of paragraph (d)(4)(i) of this section if the sampling and analytical methods meet the accuracy and confidence levels of paragraph (d)(10) of this section.

(5) *Negative initial determination.* Where a determination, conducted under paragraphs (d) (1), (2), and (3) of this section is made that no employee is exposed to airborne concentrations of lead at or above the action level the employer shall make a written record of such determination. The record shall include at least the information specified in paragraph (d)(3)(i) of this section and shall also include the date of determination, location within the worksite, and the name and social security number of each employee monitored.

(6) *Frequency.* (i) If the initial determination reveals employee exposure to be below the action level further exposure determination need not be repeated except as otherwise provided in paragraph (d)(7) of this section.

(ii) If the initial determination or subsequent determination reveals employee exposure to be at or above the action level but at or below the PEL the employer shall perform monitoring in accordance with this paragraph at least every 6 months. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level at which time the employer may discontinue monitoring for that employee except as otherwise provided in paragraph (d)(7) of this section.

(iii) If the initial determination reveals that employee exposure is above the PEL the employer shall perform monitoring quarterly. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are at or below the PEL but at or above the action level at which time the employer shall repeat monitoring for that employee at the frequency specified in paragraph (d)(6)(ii) of this section, except as otherwise provided in paragraph (d)(7) of this section. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least 7 days apart, are below the action level at which time the employer may discontinue monitoring for that employee except as otherwise provided in paragraph (d)(7) of this section.

(7) *Additional exposure assessments.* Whenever there has been a change of equipment, process, control, personnel or a new task has been initiated that may result in additional employees being exposed to lead at or above the action level or may result in employees already exposed at or above the action level being exposed above the PEL, the employer shall conduct additional monitoring in accordance with this paragraph.

(8) *Employee notification.* (i) Within 5 working days after completion of the exposure assessment the employer shall notify each employee in writing of the results which represent that employee's exposure.

(ii) Whenever the results indicate that the representative employee exposure, without regard to respirators, is at or above the PEL the employer shall include in the written notice a statement that the employees exposure was at or above that level and a description of the corrective action taken or to be taken to reduce exposure to below that level.

(9) *Accuracy of measurement.* The employer shall use a method of monitoring and analysis which has an accuracy (to a confidence level of 95%) of not less than plus or minus 25 percent for airborne concentrations of lead equal to or greater than $30\mu g/m^3$.

(e) *Methods of compliance* (1) *Engineering and work practice controls.* The employer shall implement engineering and work practice controls, including administrative controls, to reduce and maintain employee exposure to lead to or below the permissible exposure limit to the extent that such controls are feasible. Wherever all feasible engineering and work practices controls that can be instituted are not sufficient to reduce employee exposure to or below the permissible exposure limit prescribed in paragraph (c) of this section, the employer shall nonetheless use them to reduce employee exposure to the lowest feasible level and shall supplement them by the use of respiratory protection that complies with the requirements of paragraph (f) of this section.

(2) *Compliance program.* (i) Prior to commencement of the job each employer shall establish and implement a written compliance program to achieve compliance with paragraph (c) of this section.

(ii) Written plans for these compliance programs shall include at least the following:

(A) A description of each activity in which lead is emitted; e.g. equipment used, material involved, controls in place, crew size, employee job responsibilities, operating procedures and maintenance practices;

(B) A description of the specific means that will be employed to achieve compliance and, where engineering controls are required engineering plans and studies used to determine methods selected for controlling exposure to lead;

(C) A report of the technology considered in meeting the PEL;

(D) Air monitoring data which documents the source of lead emissions;

(E) A detailed schedule for implementation of the program, including documentation such as copies of purchase orders for equipment, construction contracts, etc.;

(F) A work practice program which includes items required under paragraphs (g), (h) and (i) of this section and incorporates other relevant work practices such as those specified in paragraph (e)(5) of this section;

(G) An administrative control schedule required by paragraph (e)(4) of this section, if applicable;

(H) A description of arrangements made among contractors on multi-contractor sites with respect to informing af-

fected employees of potential exposure to lead and with respect to responsibility for compliance with this section as set-forth in § 1926.16.

(I) Other relevant information.

(iii) The compliance program shall provide for frequent and regular inspections of job sites, materials, and equipment to be made by a competent person.

(iv) Written programs shall be submitted upon request to any affected employee or authorized employee representatives, to the Assistant Secretary and the Director, and shall be available at the worksite for examination and copying by the Assistant Secretary and the Director.

(v) Written programs shall be revised and updated at least every 6 months to reflect the current status of the program.

(3) *Mechanical ventilation.* When ventilation is used to control lead exposure, the employer shall evaluate the mechanical performance of the system in controlling exposure as necessary to maintain its effectiveness.

(4) *Administrative controls.* If administrative controls are used as a means of reducing employees TWA exposure to lead, the employer shall establish and implement a job rotation schedule which includes:

(i) Name or identification number of each affected employee;

(ii) Duration and exposure levels at each job or work station where each affected employee is located; and

(iii) Any other information which may be useful in assessing the reliability of administrative controls to reduce exposure to lead.

(5) The employer shall ensure that, to the extent relevant, employees follow good work practices such as described in Appendix B of this section.

(f) *Respiratory protection*—(1) *General.* Where the use of respirators is required under this section the employer shall provide, at no cost to the employee, and assure the use of respirators which comply with the requirements of this paragraph. Respirators shall be used in the following circumstances:

(i) Whenever an employee's exposure to lead exceeds the PEL;

(ii) In work situations in which engineering controls and work practices are not sufficient to reduce exposures to or below the PEL;

(iii) Whenever an employee requests a respirator; and

(iv) An interim protection for employees performing tasks as specified in paragraph (d)(2) of this section.

(2) *Respirator selection.* (i) Where respirators are used under this section the employer shall select the appropriate respirator or combination of respirators from Table I below.

(ii) The employer shall provide a powered, air-purifying respirator in lieu of the respirator specified in Table I whenever:

(A) An employee chooses to use this type of respirator; and (B) This respirator will provide adequate protection to the employee.

(iii) The employer shall select respirators from among those approved for protection against lead dust, fume, and mist by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR part 11.

Table I.—Respiratory Protection for Lead Aerosols

Airborne concentration of lead or condition of use	Required respirator[1]
Not in excess of 500 $\mu g/m^3$	• ½ mask air purifying respirator with high efficiency filters.[2,3] • ½ mask supplied air respirator operated in demand (negative pressure) mode.
Not in excess of 1,250 $\mu g/m^3$	• Loose fitting hood or helmet powered air purifying respirator with high efficiency filters.[3] • Hood or helmet supplied air respirator operated in a continuous-flow mode—e.g., type CE abrasive blasting respirators operated in a continuous-flow mode.
Not in excess of 2,500 $\mu g/m^3$	• Full facepiece air purifying respirator with high efficiency filters.[3] • Tight fitting powered air purifying respirator with high efficiency filters.[3] • Full facepiece supplied air respirator operated in demand mode. • ½ mask or full facepiece supplied air respirator operated in a continuous-flow mode. • Full facepiece self-contained breathing apparatus (SCBA) operated in demand mode.
Not in excess of 50,000 $\mu g/m^3$	• ½ mask supplied air respirator operated in pressure demand or other positive-pressure mode.
Not in excess of 100,000 $\mu g/m^3$	• Full facepiece supplied air respirator operated in pressure demand or other positive-pressure mode—e.g., type CE abrasive blasting respirators operated in a positive-pressure mode.
Greater than 100,000 $\mu g/m^3$ unknown concentration, or fire fighting	• Full facepiece SCBA operated in pressure demand or other positive-pressure mode.

[1] Respirators specified for higher concentrations can be used at lower concentrations of lead.

[2] Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.

[3] A high efficiency particulate filter (HEPA) means a filter that is 99.97 percent efficient against particles of 0.3 micron size or larger.

(3) *Respirator usage.* (i) The employer shall assure that the respirator issued to the employee exhibits minimum facepiece leakage and that the respirator is fitted properly.

(ii) Employers shall perform either quantitative or qualitative face fit tests at the time of initial fitting and at least every six months thereafter for each employee wearing negative pressure respirators. The qualitative fit tests may be used only for testing the fit of half-mask respirators where they are permitted to be worn, and shall be conducted in accordance with appendix D of this section. The tests shall be used to select facepieces that provide the required protection as prescribed in Table I.

(iii) If an employee exhibits difficulty in breathing during the fitting test or during use, the employer shall make available to the employee an examination in accordance with paragraph (j)(3)(i)(B) of this section to determine whether the employee can wear a respirator while performing the required duty.

(4) *Respirator program.* (i) The employer shall institute a respiratory protection program in accordance with 29 CFR 1910.134(b),(d),(e) and (f).

(ii) The employer shall permit each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.

(iii) Employees who wear respirators shall be permitted to leave work areas to wash their face and respirator facepiece whenever necessary to prevent skin irritation associated with respirator use.

(g) *Protective work clothing and equipment*—(1) *Provision and use.* Where an employee is exposed to lead above the PEL without regard to the use of respirators, where employees are exposed to lead compounds which may cause skin or eye irritation (e.g. lead arsenate, lead azide), and as interim protection for employees performing tasks as specified in paragraph (d)(2) of this section, the employer shall provide at no cost to the employee and assure that the employee uses appropriate protective work clothing and equipment that prevents contamination of the employee and the employee's garments such as, but not limited to:

(i) Coveralls or similar full-body work clothing;

(ii) Gloves, hats, and shoes or disposable shoe coverlets; and

(iii) Face shields, vented goggles, or other appropriate protective equipment which complies with § 1910.133 of this chapter.

(2) *Cleaning and replacement.* (i) The employer shall provide the protective clothing required in paragraph (g)(1) of this section in a clean and dry condition at least weekly, and daily to employees whose exposure levels without regard to a respirator are over 200 $\mu g/m^3$ of lead as an 8-hour TWA.

(ii) The employer shall provide for the cleaning, laundering, and disposal of protective clothing and equipment required by paragraph (g)(1) of this section.

(iii) The employer shall repair or replace required protective clothing and equipment as needed to maintain their effectiveness.

(iv) The employer shall assure that all protective clothing is removed at the completion of a work shift only in change areas provided for that purpose as prescribed in paragraph (i)(2) of this section.

(v) The employer shall assure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change area which prevents dispersion of lead outside the container.

(vi) The employer shall inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

(vii) The employer shall assure that the containers of contaminated protective clothing and equipment required by paragraph (g)(2)(v) of this section are labelled as follows:

Caution: Clothing contaminated with lead. Do not remove dust by blowing or shaking. DIspose of lead contaminated wash water in accordance with applicable local, state, or federal regulations.

(viii) The employer shall prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

(h) *Housekeeping*—(1) All surfaces shall be maintained as free as practicable of accumulations of lead.

(2) Clean-up of floors and other surfaces where lead accumulates shall wherever possible, be cleaned by vacuuming or other methods that minimize the likelihood of lead becoming airborne.

(3) 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.

(4) 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.

(5) Compressed air shall not be used to remove lead from any surface unless the compressed air is used in conjunction with a ventilation system designed to capture the airborne dust created by the compressed air.

(i) *Hygiene facilities and practices.* (1) The employer shall assure that in areas where employees are exposed to lead above the PEL without regard to the use of respirators, food or beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied.

(2) *Change areas.* (i) The employer shall provide clean change areas for employees whose airborne exposure to lead is above the PEL, and as interim protection for employees performing tasks as specified in paragraph (d)(2) of this section, without regard to the use of respirators.

(ii) The employer shall assure that change areas are equipped with separate storage facilities for protective work clothing and equipment and for street clothes which prevent cross-contamination.

(iii) The employer shall assure that employees do not leave the workplace wearing any protective clothing or equipment that is required to be worn during the work shift.

(3) *Showers.* (i) The employer shall provide shower facilities, where feasible, for use by employees whose airborne exposure to lead is above the PEL.

(ii) The employer shall assure, where shower facilities are available, that employees shower at the end of the work shift and shall provide an adequate supply of cleansing agents and towels for use by affected employees.

(4) *Eating facilities.* (i) The employer shall provide lunchroom facilities or eating areas for employees whose airborne exposure to lead is above the PEL, without regard to the use of respirators.

(ii) The employer shall assure that lunchroom facilities or eating areas are as free as practicable from lead contamination and are readily accessible to employees.

(iii) The employer shall assure that employees whose airborne exposure to lead is above the PEL, without regard to the use of a respirator, wash their hands and face prior to eating, drinking, smoking or applying cosmetics.

(iv) The employer shall assure that employees do not enter lunchroom facilities or eating areas with protective work clothing or equipment unless surface lead dust has been removed by vacuuming, downdraft booth, or other cleaning method that limits dispersion of lead dust.

(5) *Hand washing facilities.* (i) The employer shall provide adequate handwashing facilities for use by employees exposed to lead in accordance with 29 CFR 1926.51(f).

(ii) Where showers are not provided the employer shall assure that employees wash their hands and face at the end of the work-shift.

(j) *Medical surveillance*—(1) *General.* (i) The employer shall make available initial medical surveillance to employees occupationally exposed on any day to lead at or above the action level. Initial medical surveillance consists of biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels.

(ii) The employer shall institute a medical surveillance program in accordance with paragraphs (j)(2) and (j)(3) of this section for all employees who are or may be exposed by the employer at or above the action level for more than 30 days in any consecutive 12 months;

(iii) The employer shall assure that all medical examinations and procedures are performed by or under the supervision of a licensed physician.

(iv) The employer shall make available the required medical surveillance including multiple physician review under paragraph (j)(3)(iii) without cost to employees and at a reasonable time and place.

(2) *Biological monitoring*—(i) *Blood lead and ZPP level sampling and analysis.* The employer shall make available biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin levels to each employee covered under paragraphs (j)(1)(i) and (ii) of this section on the following schedule:

(A) For each employee covered under paragraph (j)(1)(ii) of this section, at least every 2 months for the first 6 months and every 6 months thereafter;

(B) For each employee covered under paragraphs (j)(1) (i) or (ii) of this section whose last blood sampling and analysis indicated a blood lead level at or above 40 $\mu g/dl$, at least every two months. This frequency shall continue until two consecutive blood samples and analyses indicate a blood lead level below 40 $\mu g/dl$; and

(C) For each employee who is removed from exposure to lead due to an elevated blood lead level at least monthly during the removal period.

(ii) *Follow-up blood sampling tests.* Whenever the results of a blood lead level test indicate that an employee's blood lead level exceeds the numerical criterion for medical removal under paragraph (k)(1)(i) of this section, the employer shall provide a second (follow-up) blood sampling test within two weeks after the employer receives the results of the first blood sampling test.

(iii) *Accuracy of blood lead level sampling and analysis.* Blood lead level sampling and analysis provided pursuant to this section shall have an accuracy (to a confidence level of 95 percent) within plus or minus 15 percent or 6 $\mu g/dl$, whichever is greater, and shall be conducted by a laboratory approved by OSHA.

[Sec. 1926.62(j)(2)(iii)]

(iv) *Employee notification.* (A) Within five working days after the receipt of biological monitoring results, the employer shall notify each employee in writing of his or her blood lead level; and

(B) the employer shall notify each employee whose blood lead level exceeds 40 μg/dl that the standard requires temporary medical removal with Medical Removal Protection benefits when an employee's blood lead level exceeds the numerical criterion for medical removal under paragraph (k)(1)(i) of this section.

(3) *Medical examinations and consultations*—(i) *Frequency.* The employer shall make available medical examinations and consultations to each employee covered under paragraph (j)(1)(ii) of this section on the following schedule:

(A) At least annually for each employee for whom a blood sampling test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 μg/dl;

(B) As soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, that the employee is pregnant, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during use; and

(C) As medically appropriate for each employee either removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited pursuant to a final medical determination.

(ii) *Content.* The content of medical examinations made available pursuant to paragraph (j)(3)(i)(B)–(C) of this section shall be determined by an examining physician and, if requested by an employee, shall include pregnancy testing or laboratory evaluation of male fertility. Medical examinations made available pursuant to paragraph (j)(3)(i)(A) of this section shall include the following elements:

(A) A detailed work history and a medical history, with particular attention to past lead exposure (occupational and nonoccupational), personal habits (smoking, hygiene), and past gastrointestinal, hematologic, renal, cardiovascular, reproductive and neurological problems;

(B) A thorough physical examination, with particular attention to teeth, gums, hematologic, gastrointestinal, renal, cardiovascular, and neurological systems. Pulmonary status should be evaluated if respiratory protection will be used;

(C) A blood pressure measurement;

(D) A blood sample and analysis which determines:

(*1*) Blood lead level;

(*2*) Hemoglobin and hematocrit determinations, red cell indices, and examination of peripheral smear morphology;

(*3*) Zinc protoporphyrin;

(*4*) Blood urea nitrogen; and,

(*5*) Serum creatinine;

(E) A routine urinalysis with microscopic examination; and

(F) Any laboratory or other test relevant to lead exposure which the examining physician deems necessary by sound medical practice.

(iii) *Multiple physician review mechanism.* (A) If the employer selects the initial physician who conducts any medical examination or consultation provided to an employee under this section, the employee may designate a second physician:

(*1*) To review any findings, determinations or recommendations of the initial physician; and

(*2*) To conduct such examinations, consultations, and laboratory tests as the second physician deems necessary to facilitate this review.

(B) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation pursuant to this section. The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen (15) days after receipt of the foregoing notification, or receipt of the initial physician's written opinion, whichever is later:

(*1*) The employee informing the employer that he or she intends to seek a second medical opinion, and

(*2*) The employee initiating steps to make an appointment with a second physician.

(C) If the findings, determinations or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve any disagreement.

(D) If the two physicians have been unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians shall designate a third physician:

(*1*) To review any findings, determinations or recommendations of the prior physicians; and

(*2*) To conduct such examinations, consultations, laboratory tests and discussions with the prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(E) The employer shall act consistent with the findings, determinations and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(iv) *Information provided to examining and consulting physicians.* (A) The employer shall provide an initial physician conducting a medical examination or consultation under this section with the following information:

(*1*) A copy of this regulation for lead including all Appendices;

(*2*) A description of the affected employee's duties as they relate to the employee's exposure;

(*3*) The employee's exposure level or anticipated exposure level to lead and to any other toxic substance (if applicable);

(*4*) A description of any personal protective equipment used or to be used;

(*5*) Prior blood lead determinations; and

(*6*) All prior written medical opinions concerning the employee in the employer's possession or control.

(B) The employer shall provide the foregoing information to a second or third physician conducting a medical examination or consultation under this section upon request either by the second or third physician, or by the employee.

(v) *Written medical opinions.* (A) The employer shall obtain and furnish the employee with a copy of a written medical opinion from each examining or consulting physician which contains only the following information:

(*1*) The physician's opinion as to whether the employee has any detected medical condition which would place the employee at increased risk of material impairment of the employee's health from exposure to lead;

(*2*) Any recommended special protective measures to be provided to the employee, or limitations to be placed upon the employee's exposure to lead;

(*3*) Any recommended limitation upon the employee's use of respirators, including a determination of whether the employee can wear a powered air purifying respirator if a physician determines that the employee cannot wear a negative pressure respirator; and

(*4*) The results of the blood lead determinations.

(B) The employer shall instruct each examining and consulting physician to:

(*1*) Not reveal either in the written opinion or orally, or in any other means of communication with the employer, findings, including laboratory results, or diagnoses unrelated to an employee's occupational exposure to lead; and

(*2*) Advise the employee of any medical condition, occupational or nonoccupational, which dictates further medical examination or treatment.

[Sec. 1926.62(j)(3)(v)(B)(*2*)]

(vi) *Alternate physician determination mechanisms.* The employer and an employee or authorized employee representative may agree upon the use of any alternate physician determination mechanism in lieu of the multiple physician review mechanism provided by paragraph (j)(3)(iii) of this section so long as the alternate mechanism is as expeditious and protective as the requirements contained in this paragraph.

(4) *Chelation.* (i) The employer shall assure that any person whom he retains, employs, supervises or controls does not engage in prophylactic chelation of any employee at any time.

(ii) If therapeutic or diagnostic chelation is to be performed by any person in paragraph (j)(4)(i) of this section, the employer shall assure that it be done under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring and that the employee is notified in writing prior to its occurrence.

(k) *Medical removal protection*—(1) *Temporary medical removal and return of an employee*—(i) *Temporary removal due to elevated blood lead level.* The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that a periodic and a follow-up blood sampling test conducted pursuant to this section indicate that the employee's blood lead level is at or above 50 μg/dl; and,

(ii) *Temporary removal due to a final medical determination.* (A) The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that a final medical determination results in a medical finding, determination, or opinion that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the phrase "final medical determination" means the written medical opinion on the employees' health status by the examining physician or, where relevant, the outcome of the multiple physician review mechanism or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section.

(C) Where a final medical determination results in any recommended special protective measures for an employee, or limitations on an employee's exposure to lead, the employer shall implement and act consistent with the recommendation.

(iii) *Return of the employee to former job status.* (A) The employer shall return an employee to his or her former job status:

(*1*) For an employee removed due to a blood lead level at or above 50 μg/dl when two consecutive blood sampling tests indicate that the employee's blood lead level is at or below 40 μg/dl;

(*2*) For an employee removed due to a final medical determination, when a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

(B) For the purposes of this section, the requirement that an employer return an employee to his or her former job status is not intended to expand upon or restrict any rights an employeehas or would have had, absent temporary medical removal, to a specific job classification or position under the terms of a collective bargaining agreement.

(iv) *Removal of other employee special protective measure or limitations.* The employer shall remove any limitations placed on an employee or end any special protective measures provided to an employee pursuant to a final medical determination when a subsequent final medical determination indicates that the limitations or special protective measures are no longer necessary.

(v) *Employer options pending a final medical determination.* Where the multiple physician review mechanism, or alternate medical determination mechanism used pursuant to the medical surveillance provisions of this section, has not yet resulted in a final medical determination with respect to an employee, the employer shall act as follows:

(A) *Removal.* The employer may remove the employee from exposure to lead, provide special protective measures to the employee, or place limitations upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status.

(B) *Return.* The employer may return the employee to his or her former job status, end any special protective measures provided to the employee, and remove any limitations placed upon the employee, consistent with the medical findings, determinations, or recommendations of any of the physicians who have reviewed the employee's health status, with two exceptions.

(*1*) If the initial removal, special protection, or limitation of the employee resulted from a final medical determination which differed from the findings, determinations, or recommendations of the initial physician or;

(*2*) If the employee has been on removal status for the preceding eighteen months due to an elevated blood lead level, then the employer shall await a final medical determination.

(2) *Medical removal protection benefits*—(i) *Provision of medical removal protection benefits.* The employer shall provide an employee up to eighteen (18) months of medical removal protection benefits on each occasion that an employee is removed from exposure to lead or otherwise limited pursuant to this section.

(ii) *Definition of medical removal protection benefits.* For the purposes of this section, the requirement that an employer provide medical removal protection benefits means that, as long as the job the employee was removed from continues, the employer shall maintain the total normal earnings, seniority and other employment rights and benefits of an employee, including the employee's right to his or her former job status as though the employee had not been medically removed from the employee's job or otherwise medically limited.

(iii) *Follow-up medical surveillance during the period of employee removal or limitation.* During the period of time that an employee is medically removed from his or her job or otherwise medically limited, the employer may condition the provision of medical removal protection benefits upon the employee's participation in follow-up medical surveillance made available pursuant to this section.

(iv) *Workers' compensation claims.* If a removed employee files a claim for workers' compensation payments for a lead-related disability, then the employer shall continue to provide medical removal protection benefits pending disposition of the claim. To the extent that an award is made to the employee for earnings lost during the period of removal, the employer's medical removal protection obligation shall be reduced by such amount. The employer shall receive no credit for workers' compensation payments received by the employee for treatment- related expenses.

(v) *Other credits.* The employer's obligation to provide medical removal protection benefits to a removed employee shall be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program, or receives income from employment with another employer made possible by virtue of the employee's removal.

(vi) *Voluntary removal or restriction of an employee.* Where an employer, although not required by this section to do so, removes an employee from exposure to lead or otherwise places limitations on an employee due to the effects of lead exposure on the employee's medical condition, the employer shall provide medical removal protection benefits to the employee equal to that required by paragraph (k)(2) (i) and (ii) of this section.

(l) *Employee information and training*—(1) *General* (i) The employer shall communicate information concerning lead hazards according to the requirements of OSHA's Hazard Communication Standard for the construction industry, 29 CFR 1926.59, including but not limited to the requirements concerning warning signs and labels, material safety data sheets (MSDS), and employee information and training. In addition, employers shall comply with the following requirements:

(ii) For all employees who are subject to exposure to lead at or above the action level on any day or who are subject to exposure to lead compounds which may cause skin or eye irritation (e.g. lead arsenate, lead azide), the employer shall provide a training program in accordance with paragraph (l)(2) of this section and assure employee participation.

(iii) The employer shall provide the training program as initial training prior to the time of job assignment or prior to the start up date for this requirement, whichever comes last.

(iv) The employer shall also provide the training program at least annually for each employee who is subject to lead exposure at or above the action level on any day.

(2) *Training program.* The employer shall assure that each employee is trained in the following:

(i) The content of this standard and its appendices;

(ii) The specific nature of the operations which could result in exposure to lead above the action level;

(iii) The purpose, proper selection, fitting, use, and limitations of respirators;

(iv) The purpose and a description of the medical surveillance program, and the medical removal protection program including information concerning the adverse health effects associated with excessive exposure to lead (with particular attention to the adverse reproductive effects on both males and females and hazards to the fetus and additional precautions for employees who are pregnant);

(v) The engineering controls and work practices associated with the employee's job assignment including training of employees to follow relevant good work practices described in Appendix B of this section;

(vi) The contents of any compliance plan in effect;

(vii) Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician; and

(viii) The employee's right of access to records under 29 CFR 1910.20.

(3) *Access to information and training materials.* (i) The employer shall make readily available to all affected employees a copy of this standard and its appendices.

(ii) The employer shall provide, upon request, all materials relating to the employee information and training program to affected employees and their designated representatives, and to the Assistant Secretary and the Director.

(m) *Signs*—(1) *General.* (i) The employer may use signs required by other statutes, regulations or ordinances in addition to, or in combination with, signs required by this paragraph.

(ii) The employer shall assure that no statement appears on or near any sign required by this paragraph which contradicts or detracts from the meaning of the required sign.

(2) *Signs.* (i) The employer shall post the following warning signs in each work area where an employees exposure to lead is above the PEL.

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

(ii) The employer shall assure that signs required by this paragraph are illuminated and cleaned as necessary so that the legend is readily visible.

(n) *Recordkeeping*—(1) *Exposure assessment.* (i) The employer shall establish and maintain an accurate record of all monitoring and other data used in conducting employee exposure assessments as required in paragraph (d) of this section.

(ii) Exposure monitoring records shall include:

(A) The date(s), number, duration, location and results of each of the samples taken if any, including a description of the sampling procedure used to determine representative employee exposure where applicable:

(B) A description of the sampling and analytical methods used and evidence of their accuracy;

(C) The type of respiratory protective devices worn, if any;

(D) Name, social security number, and job classification of the employee monitored and of all other employees whose exposure the measurement is intended to represent; and

(E) The environmental variables that could affect the measurement of employee exposure.

(iii) The employer shall maintain monitoring and other exposure assessment records in accordance with the provisions of 29 CFR 1910.20.

(2) *Medical surveillance.* (i) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance as required by paragraph (j) of this section.

(ii) This record shall include:

(A) The name, social security number, and description of the duties of the employee;

(B) A copy of the physician's written opinions;

(C) Results of any airborne exposure monitoring done on or for that employee and provided to the physician; and

(D) Any employee medical complaints related to exposure to lead.

(iii) The employer shall keep, or assure that the examining physician keeps, the following medical records:

(A) A copy of the medical examination results including medical and work history required under paragraph (j) of this section;

(B) A description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information;

(C) A copy of the results of biological monitoring.

(iv) The employer shall maintain or assure that the physician maintains medical records in accordance with the provisions of 29 CFR 1910.20.

(3) *Medical removals.* (i) The employer shall establish and maintain an accurate record for each employee removed from current exposure to lead pursuant to paragraph (k) of this section.

(ii) Each record shall include:

(A) The name and social security number of the employee;

(B) The date of each occasion that the employee was removed from current exposure to lead as well as the corresponding date on which the employee was returned to his or her former job status;

(C) A brief explanation of how each removal was or is being accomplished; and

(D) A statement with respect to each removal indicating whether or not the reason for the removal was an elevated blood lead level.

(iii) The employer shall maintain each medical removal record for at least the duration of an employee's employment.

(4) *Objective data for exemption from requirement for initial monitoring.* (i) For purposes of this section, objective data are information demonstrating that a particular product or material containing lead or a specific process, operation, or activity involving lead cannot release dust or fumes in concentrations at or above the action level under any expected conditions of use. Objective data can be obtained from an industry-wide study or from laboratory product test results from manufacturers of lead containing products or materials. The data the employer uses from an industry-wide survey must be obtained under workplace conditions closely resembling the processes, types of materi-

al, control methods, work practices and environmental conditions in the employer's current operations.

(ii) The employer shall maintain the record of the objective data relied upon for at least 30 years.

(5) *Availability.* The employer shall make available upon request all records required to be maintained by paragraph (n) of this section to affected employees, former employees, and their designated representatives, and to the Assistant Secretary and the Director for examination and copying.

(6) *Transfer of records.* (i) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained by paragraph (n) of this section.

(ii) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records required to be maintained by this section for the prescribed period, these records shall be transmitted to the Director.

(iii) At the expiration of the retention period for the records required to be maintained by this section, the employer shall notify the Director at least 3 months prior to the disposal of such records and shall transmit those records to the Director if requested within the period.

(iv) The employer shall also comply with any additional requirements involving transfer of records set forth in 29 CFR 1910.20(h).

(o) *Observation of monitoring.* (1) Employee observation. The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to lead conducted pursuant to paragraph (d) of this section.

(2) *Observation procedures.* (i) Whenever observation of the monitoring of employee exposure to lead requires entry into an area where the use of respirators, protective clothing or equipment is required, the employer shall provide the observer with and assure the use of such respirators, clothing and equipment, and shall require the observer to comply with all other applicable safety and health procedures.

(ii) Without interfering with the monitoring, observers shall be entitled to:

(A) Receive an explanation of the measurement procedures;

(B) Observe all steps related to the monitoring of lead performed at the place of exposure; and

(C) Record the results obtained or receive copies of the results when returned by the laboratory.

(p) *Effective date.* This standard (§ 1926.62) shall become effective June 3, 1993.

(q) *Appendices.* The information contained in the appendices to this section is not intended by itself, to create any additional obligations not otherwise imposed by this standard nor detract from any existing obligation.

(r) *Startup dates.* (1) The requirements of paragraphs (c) through (o) of this section, including administrative controls and feasible work practice controls, but not including engineering controls specified in paragraph (e)(1) of this section, shall be complied with as soon as possible, but no later than 60 days from the effective date of this section.

(2) Feasible engineering controls specified by paragraph (e)(1) of this section shall be implemented as soon as possible, but no later than 120 days from the effective date of this section.

Appendix A to § 1926.62—Substance Data Sheet for Occupational Exposure to Lead

I. Substance Identification

A. *Substance*: Pure lead (Pb) is a heavy metal at room temperature and pressure and is a basic chemical element. It can combine with various other substances to form numerous lead compounds.

B. *Compounds covered by the standard*: The word "lead" when used in this interim final standard means elemental lead, all inorganic lead compounds and a class of organic lead compounds called lead soaps. This standard does not apply to other organic lead compounds.

C. *Uses*: Exposure to lead occurs in several different occupations in the construction industry, including demolition or salvage of structures where lead or lead-containing materials are present; removal or encapsulation of lead-containing materials, new construction, alteration, repair, or renovation of structures that contain lead or materials containing lead; installation of products containing lead. In addition, there are construction related activities where exposure to lead may occur, including transportation, disposal, storage, or containment of lead or materials containing lead on construction sites, and maintenance operations associated with construction activities.

D. *Permissible exposure*: The permissible exposure limit (PEL) set by the standard is 50 micrograms of lead per cubic meter of air (50 $\mu g/m^3$), averaged over an 8-hour workday.

E. *Action level*: The interim final standard establishes an action level of 30 micrograms of lead per cubic meter of air (30 $\mu g/m^3$), averaged over an 8-hour workday. The action level triggers several ancillary provisions of the standard such as exposure monitoring, medical surveillance, and training.

II. Health Hazard Data

A. *Ways in which lead enters your body.* When absorbed into your body in certain doses, lead is a toxic substance. The object of the lead standard is to prevent absorption of harmful quantities of lead. The standard is intended to protect you not only from the immediate toxic effects of lead, but also from the serious toxic effects that may not become apparent until years of exposure have passed. Lead can be absorbed into your body by inhalation (breathing) and ingestion (eating). Lead (except for certain organic lead compounds not covered by the standard, such as tetraethyl lead) is not absorbed through your skin. When lead is scattered in the air as a dust, fume respiratory tract. Inhalation of airborne lead is generally the most important source of occupational lead absorption. You can also absorb lead through your digestive system if lead gets into your mouth and is swallowed. If you handle food, cigarettes, chewing tobacco, or make-up which have lead on them or handle them with hands contaminated with lead, this will contribute to ingestion. A significant portion of the lead that you inhale or ingest gets into your blood stream. Once in your blood stream, lead is circulated throughout your body and stored in various organs and body tissues. Some of this lead is quickly filtered out of your body and excreted, but some remains in the blood and other tissues. As exposure to lead continues, the amount stored in your body will increase if you are absorbing more lead than your body is excreting. Even though you may not be aware of any immediate symptoms of disease, this lead stored in your tissues can be slowly causing irreversible damage, first to individual cells, then to your organs and whole body systems.

B. *Effects of overexposure to lead*—(1) *Short term (acute) overexposure.* Lead is a potent, systemic poison that serves no known useful function once absorbed by your body. Taken in large enough doses, lead can kill you in a matter of days. A condition affecting the brain called acute encephalopathy may arise which develops quickly to seizures, coma, and death from cardiorespiratory arrest. A short term dose of lead can lead to acute encephalopathy. Short term occupational exposures of this magnitude are highly unusual, but not impossible. Similar forms of encephalopathy may, however, arise from extended, chronic exposure to lower doses of lead. There is no sharp dividing line between rapidly developing acute effects of lead, and chronic effects which take longer to acquire. Lead adversely affects numerous body systems, and causes forms of health impairment and disease which arise after periods of exposure as short as days or as long as several years.

(2) *Long-term (chronic) overexposure.* Chronic overexposure to lead may result in severe damage to your blood-forming, nervous, urinary and reproductive systems. Some common symptoms of chronic overexposure include loss of appetite, metallic taste in the mouth, anxiety, constipation, nausea, pallor, excessive tiredness, weakness, insomnia, headache, nervous irritability, muscle and joint pain or soreness, fine tremors, numbness, dizziness, hyperactivity and colic. In lead colic there may be severe abdominal pain. Damage to the central nervous system in general and the brain (encephalopathy) in particular is one of the most severe forms of lead poisoning. The most severe, often fatal, form of encephalopathy may be preceded by vomiting, a feeling of dullness progressing to drowsiness and stupor, poor memory, rest-

lessness, irritability, tremor, and convulsions. It may arise suddenly with the onset of seizures, followed by coma, and death. There is a tendency for muscular weakness to develop at the same time. This weakness may progress to paralysis often observed as a characteristic "wrist drop" or "foot drop" and is a manifestation of a disease to the nervous system called peripheral neuropathy. Chronic overexposure to lead also results in kidney disease with few, if any, symptoms appearing until extensive and most likely permanent kidney damage has occurred. Routine laboratory tests reveal the presence of this kidney disease only after about two-thirds of kidney function is lost. When overt symptoms of urinary dysfunction arise, it is often too late to correct or prevent worsening conditions, and progression to kidney dialysis or death is possible. Chronic overexposure to lead impairs the reproductive systems of both men and women. Overexposure to lead may result in decreased sex drive, impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects. There is evidence of miscarriage and stillbirth in women whose husbands were exposed to lead or who were exposed to lead themselves. Lead exposure also may result in decreased fertility, and abnormal menstrual cycles in women. The course of pregnancy may be adversely affected by exposure to lead since lead crosses the placental barrier and poses risks to developing fetuses. Children born of parents either one of whom were exposed to excess lead levels are more likely to have birth defects, mental retardation, behavioral disorders or die during the first year of childhood. Overexposure to lead also disrupts the blood-forming system resulting in decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia. Anemia is characterized by weakness, pallor and fatigability as a result of decreased oxygen carrying capacity in the blood.

(3) *Health protection goals of the standard.* Prevention of adverse health effects for most workers from exposure to lead throughout a working lifetime requires that a worker's blood lead level (BLL, also expressed as PbB) be maintained at or below forty micrograms per deciliter of whole blood (40 μg/dl). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 μg/dl to minimize adverse reproductive health effects to the parents and to the developing fetus. The measurement of your blood lead level (BLL) is the most useful indicator of the amount of lead being absorbed by your body. Blood lead levels are most often reported in units of milligrams (mg) or micrograms (μg) of lead (1 mg=1000 μg) per 100 grams (100g), 100 milliliters (100 ml) or deciliter (dl) of blood. These three units are essentially the same. Sometime BLLs are expressed in the form of mg% or μg%. This is a shorthand notation for 100g, 100 ml, or dl. (References to BLL measurements in this standard are expressed in the form of μg/dl.)

BLL measurements show the amount of lead circulating in your blood stream, but do not give any information about the amount of lead stored in your various tissues. BLL measurements merely show current absorption of lead, not the effect that lead is having on your body or the effects that past lead exposure may have already caused. Past research into lead-related diseases, however, has focused heavily on associations between BLLs and various diseases. As a result, your BLL is an important indicator of the likelihood that you will gradually acquire a lead-related health impairment or disease.

Once your blood lead level climbs above 40 μg/dl, your risk of disease increases. There is a wide variability of individual response to lead, thus it is difficult to say that a particular BLL in a given person will cause a particular effect. Studies have associated fatal encephalopathy with BLLs as low as 150 μg/dl. Other studies have shown other forms of diseases in some workers with BLLs well below 80 μg/dl. Your BLL is a crucial indicator of the risks to your health, but one other factor is also extremely important. This factor is the length of time you have had elevated BLLs. The longer you have an elevated BLL, the greater the risk that large quantities of lead are being gradually stored in your organs and tissues (body burden). The greater your overall body burden, the greater the chances of substantial permanent damage. The best way to prevent all forms of lead-related impairments and diseases—both short term and long term—is to maintain your BLL below 40 μg/dl. The provisions of the standard are designed with this end in mind.

Your employer has prime responsibility to assure that the provisions of the standard are complied with both by the company and by individual workers. You, as a worker, however, also have a responsibility to assist your employer in complying with the standard. You can play a key role in protecting your own health by learning about the lead hazards and their control, learning what the standard requires, following the standard where it governs your own actions, and seeing that your employer complies with provisions governing his or her actions.

(4) *Reporting signs and symptoms of health problems.* You should immediately notify your employer if you develop signs or symptoms associated with lead poisoning or if you desire medical advice concerning the effects of current or past exposure to lead or your ability to have a healthy child. You should also notify your employer if you have difficulty breathing during a respirator fit test or while wearing a respirator. In each of these cases, your employer must make available to you appropriate medical examinations or consultations. These must be provided at no cost to you and at a reasonable time and place. The standard contains a procedure whereby you can obtain a second opinion by a physician of your choice if your employer selected the initial physician.

Appendix B to § 1926.62—Employee Standard Summary

This appendix summarizes key provisions of the interim final standard for lead in construction that you as a worker should become familiar with.

I. Permissible Exposure Limit (PEL)—Paragraph (C)

The standard sets a permissible exposure limit (PEL) of 50 micrograms of lead per cubic meter of air (50 $\mu g/m^3$), averaged over an 8-hour workday which is referred to as a time-weighted average (TWA). This is the highest level of lead in air to which you may be permissibly exposed over an 8-hour workday. However, since this is an 8-hour average, short exposures above the PEL are permitted so long as for each 8-hour work day your average exposure does not exceed this level. This interim final standard, however, takes into account the fact that your daily exposure to lead can extend beyond a typical 8-hour workday as the result of overtime or other alterations in your work schedule. To deal with this situation, the standard contains a formula which reduces your permissible exposure when you are exposed more than 8 hours. For example, if you are exposed to lead for 10 hours a day, the maximum permitted average exposure would be 40 $\mu g/m^3$.

II. Exposure Assessment—Paragraph (D)

If lead is present in your workplace in any quantity, your employer is required to make an initial determination of whether any employee's exposure to lead exceeds the action level (30 $\mu g/m^3$ averaged over an 8-hour day). Employee exposure is that exposure which would occur if the employee were not using a respirator. This initial determination requires your employer to monitor workers' exposures unless he or she has objective data which can demonstrate conclusively that no employee will be exposed to lead in excess of the action level. Where objective data is used in lieu of actual monitoring the employer must establish and maintain an accurate record, documenting its relevancy in assessing exposure levels for current job conditions. If such objective data is available, the employer need proceed no further on employee exposure assessment until such time that conditions have changed and the determination is no longer valid.

Objective data may be compiled from various sources, e.g., insurance companies and trade associations and information from suppliers or exposure data collected from similar operations. Objective data may also comprise previously-collected sampling data including area monitoring. If it cannot be determined through using objective data that worker exposure is less than the action level, your employer must conduct monitoring or must rely on relevant previous personal sampling, if available. Where monitoring is required for the initial determination, it may be limited to a representative number of employees who are reasonably expected to have the highest exposure levels. If your employer has conducted appropriate air sampling for lead in the past 12 months, he

or she may use these results, provided they are applicable to the same employee tasks and exposure conditions and meet the requirements for accuracy as specified in the standard. As with objective data, if such results are relied upon for the initial determination, your employer must establish and maintain a record as to the relevancy of such data to current job conditions.

If there have been any employee complaints of symptoms which may be attributable to exposure to lead or if there is any other information or observations which would indicate employee exposure to lead, this must also be considered as part of the initial determination.

If this initial determination shows that a reasonable possibility exists that any employee may be exposed, without regard to respirators, over the action level, your employer must set up an air monitoring program to determine the exposure level representative of each employee exposed to lead at your workplace. In carrying out this air monitoring program, your employer is not required to monitor the exposure of every employee, but he or she must monitor a representative number of employees and job types. Enough sampling must be done to enable each employee's exposure level to be reasonably represent full shift exposure. In addition, these air samples must be taken under conditions which represent each employee's regular, daily exposure to lead. Sampling performed in the past 12 months may be used to determine exposures above the action level if such sampling was conducted during work activities essentially similar to present work conditions.

The standard lists certain tasks which may likely result in exposures to lead in excess of the PEL and, in some cases, exposures in excess of 50 times the PEL. If you are performing any of these tasks, your employer must provide you with appropriate respiratory protection, protective clothing and equipment, change areas, hand washing facilities, biological monitoring, and training until such time that an exposure assessment is conducted which demonstrates that your exposure level is below the PEL.

If you are exposed to lead and air sampling is performed, your employer is required to notify you in writing within 5 working days of the air monitoring results which represent your exposure. If the results indicate that your exposure exceeds the PEL (without regard to your use of a respirator), then your employer must also notify you of this in writing, and provide you with a description of the corrective action that has been taken or will be taken to reduce your exposure.

Your exposure must be rechecked by monitoring, at least every six months if your exposure is at or over the action level but below the PEL. Your employer may discontinue monitoring for you if 2 consecutive measurements, taken at least 7 days apart, are at or below the action level. Air monitoring must be repeated every 3 months if you are exposed over the PEL. Your employer must continue monitoring for you at this frequency until 2 consecutive measurements, taken at least 7 days apart, are below the PEL but above the action level, at which time your employer must repeat monitoring of your exposure every six months and may discontinue monitoring only after your exposure drops to or below the action level. However, whenever there is a change of equipment, process, control, or personnel or a new type of job is added at your workplace which may result in new or additional exposure to lead, your employer must perform additional monitoring.

III. Methods of Compliance—Paragraph (E)

Your employer is required to assure that no employee is exposed to lead in excess of the PEL as an 8-hour TWA. The interim final standard for lead in construction requires employers to institute engineering and work practice controls including administrative controls to the extent feasible to reduce employee exposure to lead. Where such controls are feasible but not adequate to reduce exposures below the PEL they must be used nonetheless to reduce exposures to the lowest level that can be accomplished by these means and then supplemented with appropriate respiratory protection.

Your employer is required to develop and implement a written compliance program prior to the commencement of any job where employee exposures may reach the PEL as an 8-hour TWA. The interim final standard identifies the various elements that must be included in the plan. For example, employers are required to include a description of operations in which lead is emitted, detailing other relevant information about the operation such as the type of equipment used, the type of material involved, employee job responsibilities, operating procedures and maintenance practices. In addition, your employer's compliance plan must specify the means that will be used to achieve compliance and, where engineering controls are required, include any engineering plans or studies that have been used to select the control methods. If administrative controls involving job rotation are used to reduce employee exposure to lead, the job rotation schedule must be included in the compliance plan. The plan must also detail the type of protective clothing and equipment, including respirators, housekeeping and hygiene practices that will be used to protect you from the adverse effects of exposure to lead.

The written compliance program must be made available, upon request, to affected employees and their designated representatives, the Assistant Secretary and the Director.

Finally, the plan must be reviewed and updated at least every 6 months to assure it reflects the current status in exposure control.

IV. Respiratory Protection—Paragraph (F)

Your employer is required to provide and assure your use of respirators when your exposure to lead is not controlled below the PEL by other means. The employer must pay the cost of the respirator. Whenever you request one, your employer is also required to provide you a respirator even if your air exposure level is not above the PEL. You might desire a respirator when, for example, you have received medical advice that your lead absorption should be decreased. Or, you may intend to have children in the near future, and want to reduce the level of lead in your body to minimize adverse reproductive effects. While respirators are the least satisfactory means of controlling your exposure, they are capable of providing significant protection if properly chosen, fitted, worn, cleaned, maintained, and replaced when they stop providing adequate protection.

Your employer is required to select respirators from the types listed in Table I of the Respiratory Protection section of the standard. Any respirator chosen must be approved by the Mine Safety and Health Administration (MSHA) or the National Institute for Occupational Safety and Health (NIOSH). This respirator selection table will enable your employer to choose a type of respirator which will give you a proper amount of protection based on your airborne lead exposure. Your employer may select a type of respirator that provides greater protection than that required by the standard; that is, one recommended for a higher concentration of lead than is present in your workplace. For example, a powered air purifying respirator (PAPR) is much more protective than a typical negative pressure respirator, and may also be more comfortable to wear. A PAPR has a filter, cartridge or canister to clean the air, and a power source which continuously blows filtered air into your breathing zone. Your employer might make a PAPR available to you to ease the burden of having to wear a respirator for long periods of time. The standard provides that you can obtain a PAPR upon request.

Your employer must also start a Respiratory Protection Program. This program must include written procedures for the proper selection, use, cleaning, storage, and maintenance of respirators.

Your employer must assure that your respirator facepiece fits properly. Proper fit of a respirator facepiece is critical. Obtaining a proper fit on each employee may require your employer to make available two or three different mask types. In order to assure that your respirator fits properly and that facepiece leakage is minimized, your employer must give you either a qualitative fit test or a quantitative fit test (if you use a negative pressure respirator) in accordance with appendix D. Any respirator which has a filter, cartridge or canister which cleans the work room air before you breathe it and which requires the force of your inhalation to draw air through the filtering element is a negative pressure respirator. A positive pressure respirator supplies air to you directly. A quantitative fit test uses a sophisticated machine to measure the amount, if any, of test material that leaks into the facepiece of your respirator.

You must also receive from your employer proper training in the use of respirators. Your employer is required to teach you how

to wear a respirator, to know why it is needed, and to understand its limitations.

Your employer must test the effectiveness of your negative pressure respirator initially and at least every six months thereafter with a "qualitative fit test." In this test, the fit of the facepiece is checked by seeing if you can smell a substance placed outside the respirator. If you can, there is appreciable leakage where the facepiece meets your face.

The standard provides that if your respirator uses filter elements, you must be given an opportunity to change the filter elements whenever an increase in breathing resistance is detected. You also must be permitted to periodically leave your work area to wash your face and respirator facepiece whenever necessary to prevent skin irritation. If you ever have difficulty in breathing during a fit test or while using a respirator, your employer must make a medical examination available to you to determine whether you can safely wear a respirator. The result of this examination may be to give you a positive pressure respirator (which reduces breathing resistance) or to provide alternative means of protection.

V. Protective Work Clothing and Equipment—Paragraph (G)

If you are exposed to lead above the PEL as an 8-hour TWA, without regard to your use of a respirator, or if you are exposed to lead compounds such as lead arsenate or lead azide which can cause skin and eye irritation, your employer must provide you with protective work clothing and equipment appropriate for the hazard. If work clothing is provided, it must be provided in a clean and dry condition at least weekly, and daily if your airborne exposure to lead is greater than 200 $\mu g/m^3$. Appropriate protective work clothing and equipment can include coveralls or similar full-body work clothing, gloves, hats, shoes or disposable shoe coverlets, and face shields or vented goggles. Your employer is required to provide all such equipment at no cost to you. In addition, your employer is responsible for providing repairs and replacement as necessary, and also is responsible for the cleaning, laundering or disposal of protective clothing and equipment.

The interim final standard requires that your employer assure that you follow good work practices when you are working in areas where your exposure to lead may exceed the PEL. With respect to protective clothing and equipment, where appropriate, the following procedures should be observed prior to beginning work:

1. Change into work clothing and shoe covers in the clean section of the designated changing areas;

2. Use work garments of appropriate protective gear, including respirators before entering the work area; and

3. Store any clothing not worn under protective clothing in the designated changing area.

Workers should follow these procedures upon leaving the work area:

1. HEPA vacuum heavily contaminated protective work clothing while it is still being worn. At no time may lead be removed from protective clothing by any means which result in uncontrolled dispersal of lead into the air;

2. Remove shoe covers and leave them in the work area;

3. Remove protective clothing and gear in the dirty area of the designated changing area. Remove protective coveralls by carefully rolling down the garment to reduce exposure to dust.

4. Remove respirators last; and

5. Wash hands and face.

Workers should follow these procedures upon finishing work for the day (in addition to procedures described above):

1. Where applicable, place disposal coveralls and shoe covers with the abatement waste;

2. Contaminated clothing which is to be cleaned, laundered or disposed of must be placed in closed containers in the change room.

3. Clean protective gear, including respirators, according to standard procedures;

4. Wash hands and face again. If showers are available, take a shower and wash hair. If shower facilities are not available at the work site, shower immediately at home and wash hair.

VI. Housekeeping—Paragraph (H)

Your employer must establish a housekeeping program sufficient to maintain all surfaces as free as practicable of accumulations of lead dust. Vacuuming is the preferred method of meeting this requirement, and the use of compressed air to clean floors and other surfaces is generally prohibited unless removal with compressed air is done in conjunction with ventilation systems designed to contain dispersal of the lead dust. Dry or wet sweeping, shoveling, or brushing may not be used except where vacuuming or other equally effective methods have been tried and do not work. Vacuums must be used equipped with a special filter called a high-efficiency particulate air (HEPA) filter and emptied in a manner which minimizes the reentry of lead into the workplace.

VII. Hygiene Facilities and Practices—Paragraph (I)

The standard requires that hand washing facilities be provided where occupational exposure to lead occurs. In addition, change areas, showers (where feasible), and lunchrooms or eating areas are to be made available to workers exposed to lead above the PEL. Your employer must assure that except in these facilities, food and beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied, where airborne exposures are above the PEL. Change rooms provided by your employer must be equipped with separate storage facilities for your protective clothing and equipment and street clothes to avoid cross-contamination. After showering, no required protective clothing or equipment worn during the shift may be worn home. It is important that contaminated clothing or equipment be removed in change areas and not be worn home or you will extend your exposure and expose your family since lead from your clothing can accumulate in your house, car, etc.

Lunchrooms or eating areas may not be entered with protective clothing or equipment unless surface dust has been removed by vacuuming, downdraft booth, or other cleaning method. Finally, workers exposed above the PEL must wash both their hands and faces prior to eating, drinking, smoking or applying cosmetics.

All of the facilities and hygiene practices just discussed are essential to minimize additional sources of lead absorption from inhalation or ingestion of lead that may accumulate on you, your clothes, or your possessions. Strict compliance with these provisions can virtually eliminate several sources of lead exposure which significantly contribute to excessive lead absorption.

VIII. Medical Surveillance—Paragraph (J)

The medical surveillance program is part of the standard's comprehensive approach to the prevention of lead-related disease. Its purpose is to supplement the main thrust of the standard which is aimed at minimizing airborne concentrations of lead and sources of ingestion. Only medical surveillance can determine if the other provisions of the standard have affectively protected you as an individual. Compliance with the standard's provision will protect most workers from the adverse effects of lead exposure, but may not be satisfactory to protect individual workers (1) who have high body burdens of lead acquired over past years, (2) who have additional uncontrolled sources of non-occupational lead exposure, (3) who exhibit unusual variations in lead absorption rates, or (4) who have specific non-work related medical conditions which could be aggravated by lead exposure (e.g., renal disease, anemia). In addition, control systems may fail, or hygiene and respirator programs may be inadequate. Periodic medical surveillance of individual workers will help detect those failures. Medical surveillance will also be important to protect your reproductive ability-regardless of whether you are a man or woman.

All medical surveillance required by the interim final standard must be performed by or under the supervision of a licensed physician. The employer must provide required medical surveillance without cost to employees and at a reasonable time and place. The standard's medical surveillance program has two parts—periodic biological monitoring and medical examinations. Your employer's obligation to offer you medical surveillance is triggered by the results of the air monitoring program. Full medical surveillance must be made available to all employees who are or may be exposed to lead in excess of the action level for more than 30 days a year and whose blood lead level exceeds 40 $\mu g/dl$. Initial medical surveillance consisting of blood sampling and analysis for lead and zinc protoporphyrin must be provided to all employees exposed at any time (1 day) above the action level.

Biological monitoring under the standard must be provided at least every 2 months for

the first 6 months and every 6 months thereafter until your blood lead level is below 40 μg/dl. A zinc protoporphyrin (ZPP) test is a very useful blood test which measures an adverse metabolic effect of lead on your body and is therefore an indicator of lead toxicity.

If your BLL exceeds 40 μg/dl the monitoring frequency must be increased from every 6 months to at least every 2 months and not reduced until two consecutive BLLs indicate a blood lead level below 40 μg/dl. Each time your BLL is determined to be over 40 μg/dl, your employer must notify you of this in writing within five working days of his or her receipt of the test results. The employer must also inform you that the standard requires temporary medical removal with economic protection when your BLL exceeds 50 μg/dl. (See Discussion of Medical Removal Protection-Paragraph (k).) Anytime your BLL exceeds 50 μg/dl your employer must make available to you within two weeks of receipt of these test results a second follow-up BLL test to confirm your BLL. If the two tests both exceed 50 μg/dl, and you are temporarily removed, then your employer must make successive BLL tests available to you on a monthly basis during the period of your removal.

Medical examinations beyond the initial one must be made available on an annual basis if your blood lead level exceeds 40 μg/dl at any time during the preceding year and you are being exposed above the airborne action level of 30 $\mu g/m^3$ for 30 or more days per year. The initial examination will provide information to establish a baseline to which subsequent data can be compared.

An initial medical examination to consist of blood sampling and analysis for lead and zinc protoporphyrin must also be made available (prior to assignment) for each employee being assigned for the first time to an area where the airborne concentration of lead equals or exceeds the action level at any time. In addition, a medical examination or consultation must be made available as soon as possible if you notify your employer that you are experiencing signs or symptoms commonly associated with lead poisoning or that you have difficulty breathing while wearing a respirator or during a respirator fit test. You must also be provided a medical examination or consultation if you notify your employer that you desire medical advice concerning the effects of current or past exposure to lead on your ability to procreate a healthy child.

Finally, appropriate follow-up medical examinations or consultations may also be provided for employees who have been temporarily removed from exposure under the medical removal protection provisions of the standard. (See Part IX, below.)

The standard specifies the minimum content of pre-assignment and annual medical examinations. The content of other types of medical examinations and consultations is left up to the sound discretion of the examining physician. Pre-assignment and annual medical examinations must include (1) a detailed work history and medical history; (2) a thorough physical examination, including an evaluation of your pulmonary status if you will be required to use a respirator; (3) a blood pressure measurement; and (4) a series of laboratory tests designed to check your blood chemistry and your kidney function. In addition, at any time upon your request, a laboratory evaluation of male fertility will be made (microscopic examination of a sperm sample), or a pregnancy test will be given.

The standard does not require that you participate in any of the medical procedures, tests, etc. which your employer is required to make available to you. Medical surveillance can, however, play a very important role in protecting your health. You are strongly encouraged, therefore, to participate in a meaningful fashion. The standard contains a multiple physician review mechanism which will give you a chance to have a physician of your choice directly participate in the medical surveillance program. If you are dissatisfied with an examination by a physician chosen by your employer, you can select a second physician to conduct an independent analysis. The two doctors would attempt to resolve any differences of opinion, and select a third physician to resolve any firm dispute. Generally your employer will choose the physician who conducts medical surveillance under the lead standard-unless you and your employer can agree on the choice of a physician or physicians. Some companies and unions have agreed in advance, for example, to use certain independent medical laboratories or panels of physicians. Any of these arrangements are acceptable so long as required medical surveillance is made available to workers.

The standard requires your employer to provide certain information to a physician to aid in his or her examination of you. This information includes (1) the standard and its appendices, (2) a description of your duties as they relate to occupational lead exposure, (3) your exposure level or anticipated exposure level, (4) a description of any personal protective equipment you wear, (5) prior blood lead level results, and (6) prior written medical opinions concerning you that the employer has. After a medical examination or consultation the physician must prepare a written report which must contain (1) the physician's opinion as to whether you have any medical condition which places you at increased risk of material impairment to health from exposure to lead, (2) any recommended special protective measures to be provided to you, (3) any blood lead level determinations, and (4) any recommended limitation on your use of respirators. This last element must include a determination of whether you can wear a powered air purifying respirator (PAPR) if you are found unable to wear a negative pressure respirator.

The medical surveillance program of the interim lead standard may at some point in time serve to notify certain workers that they have acquired a disease or other adverse medical condition as a result of occupational lead exposure. If this is true, these workers might have legal rights to compensation from public agencies, their employers, firms that supply hazardous products to their employers, or other persons. Some states have laws, including worker compensation laws, that disallow a worker who learns of a job-related health impairment to sue, unless the worker sues within a short period of time after learning of the impairment. (This period of time may be a matter of months or years.) An attorney can be consulted about these possibilities. It should be stressed that OSHA is in no way trying to either encourage or discourage claims or lawsuits. However, since results of the standard's medical surveillance program can significantly affect the legal remedies of a worker who has acquired a job-related disease or impairment. it is proper for OSHA to make you aware of this.

The medical surveillance section of the standard also contains provisions dealing with chelation. Chelation is the use of certain drugs (administered in pill form or injected into the body) to reduce the amount of lead absorbed in body tissues. Experience accumulated by the medical and scientific communities has largely confirmed the effectiveness of this type of therapy for the treatment of very severe lead poisoning. On the other hand, it has also been established that there can be a long list of extremely harmful side effects associated with the use of chelating agents. The medical community has balanced the advantages and disadvantages resulting from the use of chelating agents in various circumstances and has established when the use of these agents is acceptable. The standard includes these accepted limitations due to a history of abuse of chelation therapy by some lead companies. The most widely used chelating agents are calcium disodium EDTA, (Ca Na2 EDTA), Calcium Disodium Versenate (Versenate), and d-penicillamine (pencillamine or Cupramine).

The standard prohibits "prophylactic chelation" of any employee by any person the employer retains, supervises or controls. "Prophylactic chelation" is the routine use of chelating or similarly acting drugs to prevent elevated blood levels in workers who are occupationally exposed to lead, or the use of these drugs to routinely lower blood lead levels to predesignated concentrations believed to be "safe". It should be emphasized that where an employer takes a worker who has no symptoms of lead poisoning and has chelation carried out by a physician (either inside or outside of a hospital) solely to reduce the worker's blood lead level, that will generally be considered prophylactic chelation. The use of a hospital and a physician does not mean that prophylactic chelation is not being performed. Routine chelation to prevent increased or reduce current blood lead levels is unacceptable whatever the setting.

The standard allows the use of "therapeutic" or "diagnostic" chelation if administered under the supervision of a licensed physician in a clinical setting with thorough and appropriate medical monitoring. Therapeutic chelation responds to severe lead poisoning where there are marked symptoms. Diagnostic chelation involved giving a pa-

tient a dose of the drug then collecting all urine excreted for some period of time as an aid to the diagnosis of lead poisoning.

In cases where the examining physician determines that chelation is appropriate, you must be notified in writing of this fact before such treatment. This will inform you of a potentially harmful treatment, and allow you to obtain a second opinion.

IX. Medical Removal Protection—Paragraph (K)

Excessive lead absorption subjects you to increased risk of disease. Medical removal protection (MRP) is a means of protecting you when, for whatever reasons, other methods, such as engineering controls, work practices, and respirators, have failed to provide the protection you need. MRP involves the temporary removal of a worker from his or her regular job to a place of significantly lower exposure without any loss of earnings, seniority, or other employment rights or benefits. The purpose of this program is to cease further lead absorption and allow your body to naturally excrete lead which has previously been absorbed. Temporary medical removal can result from an elevated blood lead level, or a medical opinion. For up to 18 months, or for as long as the job the employee was removed from lasts, protection is provided as a result of either form of removal. The vast majority of removed workers, however, will return to their former jobs long before this eighteen month period expires.

You may also be removed from exposure even if your blood lead level is below 50 μg/dl if a final medical determination indicates that you temporarily need reduced lead exposure for medical reasons. If the physician who is implementing your employers medical program makes a final written opinion recommending your removal or other special protective measures, your employer must implement the physician's recommendation. If you are removed in this manner, you may only be returned when the doctor indicates that it is safe for you to do so.

The standard does not give specific instructions dealing with what an employer must do with a removed worker. Your job assignment upon removal is a matter for you, your employer and your union (if any) to work out consistent with existing procedures for job assignments. Each removal must be accomplished in a manner consistent with existing collective bargaining relationships. Your employer is given broad discretion to implement temporary removals so long as no attempt is made to override existing agreements. Similarly, a removed worker is provided no right to veto an employer's choice which satisfies the standard.

In most cases, employers will likely transfer removed employees to other jobs with sufficiently low lead exposure. Alternatively, a worker's hours may be reduced so that the time weighted average exposure is reduced, or he or she may be temporarily laid off if no other alternative is feasible.

In all of these situation, MRP benefits must be provided during the period of removal—i.e., you continue to receive the same earnings, seniority, and other rights and benefits you would have had if you had not been removed. Earnings includes more than just your base wage; it includes overtime, shift differentials, incentives, and other compensation you would have earned if you had not been removed. During the period of removal you must also be provided with appropriate follow-up medical surveillance. If you were removed because your blood lead level was too high, you must be provided with a monthly blood test. If a medical opinion caused your removal, you must be provided medical tests or examinations that the doctor believes to be appropriate. If you do not participate in this follow up medical surveillance, you may lose your eligibility for MRP benefits.

When you are medically eligible to return to your former job, your employer must return you to your "former job status." This means that you are entitled to the position, wages, benefits, etc., you would have had if you had not been removed. If you would still be in your old job if no removal had occurred that is where you go back. If not, you are returned consistent with whatever job assignment discretion your employer would have had if no removal had occurred. MRP only seeks to maintain your rights, not expand them or diminish them.

If you are removed under MRP and you are also eligible for worker compensation or other compensation for lost wages, your employer's MRP benefits obligation is reduced by the amount that you actually receive from these other sources. This is also true if you obtain other employment during the time you are laid off with MRP benefits.

The standard also covers situations where an employer voluntarily removes a worker from exposure to lead due to the effects of lead on the employee's medical condition, even though the standard does not require removal. In these situations MRP benefits must still be provided as though the standard required removal. Finally, it is important to note that in all cases where removal is required, respirators cannot be used as asubstitute. Respirators may be used before removal becomes necessary, but not as an alternative to a transfer to a low exposure job, or to a lay-off with MRP benefits.

X. Employee Information and Training—Paragraph (L)

Your employer is required to provide an information and training program for all employees exposed to lead above the action level or who may suffer skin or eye irritation from lead compounds such as lead arsenate or lead azide. The program must train these employees regarding the specific hazards associated with their work environment, protective measures which can be taken, including the contents of any compliance plan in effect, the danger of lead to their bodies (including their reproductive systems), and their rights under the standard. All employees must be trained prior to initial assignment to areas where there is a possibility of exposure over the action level.

This training program must also be provided at least annually thereafter unless further exposure above the action level will not occur.

XI. Signs—Paragraph (M)

The standard requires that the following warning sign be posted in work areas where the exposure to lead exceeds the PEL:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

These signs are to be posted and maintained in a manner which assures that the legend is readily visible.

XII. Recordkeeping—Paragraph (N)

Your employer is required to keep all records of exposure monitoring for airborne lead. These records must include the name and job classification of employees measured, details of the sampling and analytical techniques, the results of this sampling, and the type of respiratory protection being worn by the person sampled. Such records are to be retained for at least 30 years. Your employer is also required to keep all records of biological monitoring and medical examination results. These records must include the names of the employees, the physician's written opinion, and a copy of the results of the examination. Medical records must be preserved and maintained for the duration of employment plus 30 years. However, if the employee's duration of employment is less than one year, the employer need not retain that employee's medical records beyond the period of employment if they are provided to the employee upon termination of employment.

Recordkeeping is also required if you are temporarily removed from your job under the medical removal protection program. This record must include your name and social security number, the date of your removal and return, how the removal was or is being accomplished, and whether or not the reason for the removal was an elevated blood lead level. Your employer is required to keep each medical removal record only for as long as the duration of an employee's employment.

The standard requires that if you request to see or copy environmental monitoring, blood lead level monitoring, or medical removal records, they must be made available to you or to a representative that you authorize. Your union also has access to these records. Medical records other than BLL's must also be provided upon request to you, to your physician or to any other person whom you may specifically designate. Your union does not have access to your personal medical records unless you authorize their access.

XIII. Observation of Monitoring—Paragraph (O)

When air monitoring for lead is performed at your workplace as required by this standard, your employer must allow you or someone you designate to act as an observer of the monitoring. Observers are entitled to an explanation of the measurement procedure, and to record the results ob-

tained. Since results will not normally be available at the time of the monitoring, observers are entitled to record or receive the results of the monitoring when returned by the laboratory. Your employer is required to provide the observer with any personal protective devices required to be worn by employees working in the area that is being monitored. The employer must require the observer to wear all such equipment and to comply with all other applicable safety and health procedures.

XIV. Effective Date—Paragraph (P)

The standard's effective date is June 3, 1993. Employer obligations under the standard begin as of that date with full implementation of engineering controls as soon as possible but no later than within 4 months, and all other provisions completed as soon as possible, but no later than within 2 months from the effective date.

XV. For Additional Information

A. A copy of the interim standard for lead in construction can be obtained free of charge by calling or writing the OSHA Office of Publications, room N-3101, United States Department of Labor, Washington, DC 20210: Telephone (202) 219-4667.

B. Additional information about the standard, its enforcement, and your employer's compliance can be obtained from the nearest OSHA Area Office listed in your telephone directory under United States Government/Department of Labor.

Appendix C to § 1926.62—Medical Surveillance Guidelines

Introduction

The primary purpose of the Occupational Safety and Health Act of 1970 is to assure, so far as possible, safe and healthful working conditions for every working man and woman. The interim final occupational health standard for lead in construction is designed to protect workers exposed to inorganic lead including metallic lead, all inorganic lead compounds and organic lead soaps.

Under this interim final standard occupational exposure to inorganic lead is to be limited to 50 $\mu g/m^3$ (micrograms per cubic meter) based on an 8 hour time-weighted average (TWA). This permissible exposure limit (PEL) must be achieved through a combination of engineering, work practice and administrative controls to the extent feasible. Where these controls are in place but are found not to reduce employee exposures to or below the PEL, they must be used nonetheless, and supplemented with respirators to meet the 50 $\mu g/m^3$ exposure limit.

The standard also provides for a program of biological monitoring for employees exposed to lead above the action level at any time, and additional medical surveillance for all employees exposed to levels of inorganic lead above 30 $\mu g/m^3$ (TWA) for more than 30 days per year and whose BLL exceeds 40 $\mu g/dl$.

The purpose of this document is to outline the medical surveillance provisions of the interim standard for inorganic lead in construction, and to provide further information to the physician regarding the examination and evaluation of workers exposed to inorganic lead.

Section 1 provides a detailed description of the monitoring procedure including the required frequency of blood testing for exposed workers, provisions for medical removal protection (MRP), the recommended right of the employee to a second medical opinion, and notification and recordkeeping requirements of the employer. A discussion of the requirements for respirator use and respirator monitoring and OSHA's position on prophylactic chelation therapy are also included in this section.

Section 2 discusses the toxic effects and clinical manifestations of lead poisoning and effects of lead intoxication on enzymatic pathways in heme synthesis. The adverse effects on both male and female reproductive capacity and on the fetus are also discussed.

Section 3 outlines the recommended medical evaluation of the worker exposed to inorganic lead, including details of the medical history, physical examination, and recommended laboratory tests, which are based on the toxic effects of lead as discussed in Section 2.

Section 4 provides detailed information concerning the laboratory tests available for the monitoring of exposed workers. Included also is a discussion of the relative value of each test and the limitations and precautions which are necessary in the interpretation of the laboratory results.

I. Medical Surveillance and Monitoring Requirements for Workers Exposed to Inorganic Lead

Under the interim final standard for inorganic lead in the construction industry, initial medical surveillance consisting of biological monitoring to include blood lead and ZPP level determination shall be provided to employees exposed to lead at or above the action level on any one day. In addition, a program of biological monitoring is to be made available to all employees exposed above the action level at any time and additional medical surveillance is to be made available to all employees exposed to lead above 30 $\mu g/m^3$ TWA for more than 30 days each year and whose BLL exceeds 40 $\mu g/dl$. This program consists of periodic blood sampling and medical evaluation to be performed on a schedule which is defined by previous laboratory results, worker complaints or concerns, and the clinical assessment of the examining physician.

Under this program, the blood lead level (BLL) of all employees who are exposed to lead above 30 $\mu g/m^3$ for more than 30 days per year or whose blood lead is above 40 $\mu g/dl$ but exposed for no more than 30 days per year is to be determined at least every two months for the first six months of exposure and every six months thereafter. The frequency is increased to every two months for employees whose last blood lead level was 40 $\mu g/dl$ or above. For employees who are removed from exposure to lead due to an elevated blood lead, a new blood lead level must be measured monthly. A zinc protoporphyrin (ZPP) measurement is strongly recommended on each occasion that a blood lead level measurement is made.

An annual medical examination and consultation performed under the guidelines discussed in Section 3 is to be made available to each employee exposed above 30 $\mu g/m^3$ for more than 30 days per year for whom a blood test conducted at any time during the preceding 12 months indicated a blood lead level at or above 40 $\mu g/dl$. Also, an examination is to be given to all employees prior to their assignment to an area in which airborne lead concentrations reach or exceed the 30 $\mu g/m^3$ for more than 30 days per year. In addition, a medical examination must be provided as soon as possible after notification by an employee that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice regarding lead exposure and the ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or during respirator use. An examination is also to be made available to each employee removed from exposure to lead due to a risk of sustaining material impairment to health, or otherwise limited or specially protected pursuant to medical recommendations.

Results of biological monitoring or the recommendations of an examining physician may necessitate removal of an employee from further lead exposure pursuant to the standard's medical removal protection (MRP) program. The object of the MRP program is to provide temporary medical removal to workers either with substantially elevated blood lead levels or otherwise at risk of sustaining material health impairment from continued substantial exposure to lead.

Under the standard's ultimate worker removal criteria, a worker is to be removed from any work having an eight hour TWA exposure to lead of 30 $\mu g/m^3$ when his or her blood lead level reaches 50 $\mu g/dl$ and is confirmed by a second follow-up blood lead level performed within two weeks after the employer receives the results of the first blood sampling test. Return of the employee to his or her job status depends on a worker's blood lead level declining to 40 $\mu g/dl$.

As part of the interim standard, the employer is required to notify in writing each employee whose blood lead level exceeds 40 $\mu g/dl$. In addition each such employee is to be informed that the standard requires medical removal with MRP benefits, discussed below, when an employee's blood lead level exceeds the above defined limit.

In addition to the above blood lead level criterion, temporary worker removal may also take place as a result of medical determinations and recommendations. Written medical opinions must be prepared after each examination pursuant to the standard. If the examining physician includes a medical finding, determination or opinion that the employee has a medical condition which places the employee at increased risk of material health impairment from exposure to lead, then the employee must be removed from

exposure to lead at or above 30 $\mu g/m^3$. Alternatively, if the examining physician recommends special protective measures for an employee (e.g., use of a powered air purifying respirator) or recommends limitations on an employee's exposure to lead, then the employer must implement these recommendations.

Recommendations may be more stringent than the specific provisions of the standard. The examining physician, therefore, is given broad flexibility to tailor special protective procedures to the needs of individual employees. This flexibility extends to the evaluation and management of pregnant workers and male and female workers who are planning to raise children. Based on the history, physical examination, and laboratory studies, the physician might recommend special protective measures or medical removal for an employee who is pregnant or who is planning to conceive a child when, in the physician's judgment, continued exposure to lead at the current job would pose a significant risk. The return of the employee to his or her former job status, or the removal of special protections or limitations, depends upon the examining physician determining that the employee is no longer at increased risk of material impairment or that special measures are no longer needed.

During the period of any form of special protection or removal, the employer must maintain the worker's earnings, seniority, and other employment rights and benefits (as though the worker had not been removed) for a period of up to 18 months or for as long as the job the employee was removed from lasts if less than 18 months. This economic protection will maximize meaningful worker participation in the medical surveillance program, and is appropriate as part of the employer's overall obligation to provide a safe and healthful workplace. The provisions of MRP benefits during the employee's removal period may, however, be conditioned upon participation in medical surveillance.

The lead standard provides for a multiple physician review in cases where the employee wishes a second opinion concerning potential lead poisoning or toxicity. If an employee wishes a second opinion, he or she can make an appointment with a physician of his or her choice. This second physician will review the findings, recommendations or determinations of the first physician and conduct any examinations, consultations or tests deemed necessary in an attempt to make a final medical determination. If the first and second physicians do not agree in their assessment they must try to resolve their differences. If they cannot reach an agreement then they must designate a third physician to resolve the dispute.

The employer must provide examining and consulting physicians with the following specific information: A copy of the lead regulations and all appendices, a description of the employee's duties as related to exposure, the exposure level or anticipated level to lead and any other toxic substances (if applicable), a description of personal protective equipment used, blood lead levels, and all prior written medical opinions regarding the employee in the employer's possession or control. The employer must also obtain from the physician and provide the employee with a written medical opinion containing blood lead levels, the physicians's opinion as to whether the employee is at risk of material impairment to health, any recommended protective measures for the employee if further exposure is permitted, as well as any recommended limitations upon an employee's use of respirators.

Employers must instruct each physician not to reveal to the employer in writing or in any other way his or her findings, laboratory results, or diagnoses which are felt to be unrelated to occupational lead exposure. They must also instruct each physician to advise the employee of any occupationally or non-occupationally related medical condition requiring further treatment or evaluation.

The standard provides for the use of respirators where engineering and other primary controls are not effective. However, the use of respirator protection shall not be used in lieu of temporary medical removal due to elevated blood lead levels or findings that an employee is at risk of material health impairment. This is based on the numerous inadequacies of respirators including skin rash where the facepiece makes contact with the skin, unacceptable stress to breathing in some workers with underlying cardiopulmonary impairment, difficulty in providing adequate fit, the tendency for respirators to create additional hazards by interfering with vision, hearing, and mobility, and the difficulties of assuring the maximum effectiveness of a complicated work practice program involving respirators. Respirators do, however, serve a useful function where engineering and work practice controls are inadequate by providing supplementary, interim, or short-term protection, provided they are properly selected for the environment in which the employee will be working, properly fitted to the employee, maintained and cleaned periodically, and worn by the employee when required.

In its interim final standard on occupational exposure to inorganic lead in the construction industry, OSHA has prohibited prophylactic chelation. Diagnostic and therapeutic chelation are permitted only under the supervision of a licensed physician with appropriate medical monitoring in an acceptable clinical setting. The decision to initiate chelation therapy must be made on an individual basis and take into account the severity of symptoms felt to be a result of lead toxicity along with blood lead levels, ZPP levels, and other laboratory tests as appropriate. EDTA and penicillamine which are the primary chelating agents used in the therapy of occupational lead poisoning have significant potential side effects and their use must be justified on the basis of expected benefits to the worker. Unless frank and severe symptoms are present, therapeutic chelation is not recommended, given the opportunity to remove a worker from exposure and allow the body to naturally excrete accumulated lead. As a diagnostic aid, the chelation mobilization test using CA-EDTA has limited applicability. According to some investigators, the test can differentiate between lead-induced and other nephropathies. The test may also provide an estimation of the mobile fraction of the total body lead burden.

Employers are required to assure that accurate records are maintained on exposure assessment, including environmental monitoring, medical surveillance, and medical removal for each employee. Exposure assessment records must be kept for at least 30 years. Medical surveillance records must be kept for the duration of employment plus 30 years except in cases where the employment was less than one year. If duration of employment is less than one year, the employer need not retain this record beyond the term of employment if the record is provided to the employee upon termination of employment. Medical removal records also must be maintained for the duration of employment. All records required under the standard must be made available upon request to the Assistant Secretary of Labor for Occupational Safety and Health and the Director of the National Institute for Occupational Safety and Health. Employers must also make environmental and biological monitoring and medical removal records available to affected employees and to former employees or their authorized employee representatives. Employees or their specifically designated representatives have access to their entire medical surveillance records.

In addition, the standard requires that the employer inform all workers exposed to lead at or above 30 $\mu g/m^3$ of the provisions of the standard and all its appendices, the purpose and description of medical surveillance and provisions for medical removal protection if temporary removal is required. An understanding of the potential health effects of lead exposure by all exposed employees along with full understanding of their rights under the lead standard is essential for an effective monitoring program.

II. Adverse Health Effects of Inorganic Lead

Although the toxicity of lead has been known for 2,000 years, the knowledge of the complex relationship between lead exposure and human response is still being refined. Significant research into the toxic properties of lead continues throughout the world, and it should be anticipated that our understanding of thresholds of effects and margins of safety will be improved in future years. The provisions of the lead standard are founded on two prime medical judgments: First, the prevention of adverse health effects from exposure to lead throughout a working lifetime requires that worker blood lead levels be maintained at or below 40 $\mu g/dl$ and second, the blood lead levels of workers, male or female, who intend to parent in the near future should be maintained below 30 $\mu g/dl$ to minimize adverse reproductive health effects to the parents and developing fetus. The adverse effects of lead on reproduction are being actively researched and OSHA encourages the physician to remain abreast of

recent developments in the area to best advise pregnant workers or workers planning to conceive children.

The spectrum of health effects caused by lead exposure can be subdivided into five developmental stages: Normal, physiological changes of uncertain significance, pathophysiological changes, overt symptoms (morbidity), and mortality. Within this process there are no sharp distinctions, but rather a continuum of effects. Boundaries between categories overlap due to the wide variation of individual responses and exposures in the working population. OSHA's development of the lead standard focused on pathophysiological changes as well as later stages of disease.

1. Heme Synthesis Inhibition. The earliest demonstrated effect of lead involves its ability to inhibit at least two enzymes of the heme synthesis pathway at very low blood levels. Inhibition of delta aminolevulinic acid dehydrase (ALA-D) which catalyzes the conversion of delta-aminolevulinic acid (ALA) to protoporphyrin is observed at a blood lead level below 20 μg/dl. At a blood lead level of 40 μg/dl, more than 20% of the population would have 70% inhibition of ALA-D. There is an exponential increase in ALA excretion at blood lead levels greater than 40 μg/dl.

Another enzyme, ferrochelatase, is also inhibited at low blood lead levels. Inhibition of ferrochelatase leads to increased free erythrocyte protoporphyrin (FEP) in the blood which can then bind to zinc to yield zinc protoporphyrin. At a blood lead level of 50 μg/dl or greater, nearly 100% of the population will have an increase in FEP. There is also an exponential relationship between blood lead levels greater than 40 μg/dl and the associated ZPP level, which has led to the development of the ZPP screening test for lead exposure.

While the significance of these effects is subject to debate, it is OSHA's position that these enzyme disturbances are early stages of a disease process which may eventually result in the clinical symptoms of lead poisoning. Whether or not the effects do progress to the later stages of clinical disease, disruption of these enzyme processes over a working lifetime is considered to be a material impairment of health.

One of the eventual results of lead-induced inhibition of enzymes in the heme synthesis pathway is anemia which can be asymptomatic if mild but associated with a wide array of symptoms including dizziness, fatigue, and tachycardia when more severe. Studies have indicated that lead levels as low as 50 μg/dl can be associated with a definite decreased hemoglobin, although most cases of lead-induced anemia, as well as shortened red-cell survival times, occur at lead levels exceeding 80 μg/dl. Inhibited hemoglobin synthesis is more common in chronic cases whereas shortened erythrocyte life span is more common in acute cases.

In lead-induced anemias, there is usually a reticulocytosis along with the presence of basophilic stippling, and ringed sideroblasts, although none of the above are pathognomonic for lead-induced anemia.

2. Neurological Effects. Inorganic lead has been found to have toxic effects on both the central and peripheral nervous systems. The earliest stages of lead-induced central nervous system effects first manifest themselves in the form of behavioral disturbances and central nervous system symptoms including irritability, restlessness, insomnia and other sleep disturbances, fatigue, vertigo, headache, poor memory, tremor, depression, and apathy. With more severe exposure, symptoms can progress to drowsiness, stupor, hallucinations, delirium, convulsions and coma.

The most severe and acute form of lead poisoning which usually follows ingestion or inhalation of large amounts of lead is acute encephalopathy which may arise precipitously with the onset of intractable seizures, coma, cardiorespiratory arrest, and death within 48 hours.

While there is disagreement about what exposure levels are needed to produce the earliest symptoms, most experts agree that symptoms definitely can occur at blood lead levels of 60 μg/dl whole blood and therefore recommend a 40 μg/dl maximum. The central nervous system effects frequently are not reversible following discontinued exposure or chelation therapy and when improvement does occur, it is almost always only partial.

The peripheral neuropathy resulting from lead exposure characteristically involves only motor function with minimal sensory damage and has a marked predilection for the extensor muscles of the most active extremity. The peripheral neuropathy can occur with varying degrees of severity. The earliest and mildest form which can be detected in workers with blood lead levels as low as 50 μg/dl is manifested by slowing of motor nerve conduction velocity often without clinical symptoms. With progression of the neuropathy there is development of painless extensor muscle weakness usually involving the extensor muscles of the fingers and hand in the most active upper extremity, followed in severe cases by wrist drop or, much less commonly, foot drop.

In addition to slowing of nerve conduction, electromyographical studies in patients with blood lead levels greater than 50 μg/dl have demonstrated a decrease in the number of acting motor unit potentials, an increase in the duration of motor unit potentials, and spontaneous pathological activity including fibrillations and fasciculations. Whether these effects occur at levels of 40 μg/dl is undetermined.

While the peripheral neuropathies can occasionally be reversed with therapy, again such recovery is not assured particularly in the more severe neuropathies and often improvement is only partial. The lack of reversibility is felt to be due in part to segmental demyelination.

3. Gastrointestinal. Lead may also affect the gastrointestinal system producing abdominal colic or diffuse abdominal pain, constipation, obstipation, diarrhea, anorexia, nausea and vomiting. Lead colic rarely develops at blood lead levels below 80 μg/dl.

4. Renal. Renal toxicity represents one of the most serious health effects of lead poisoning. In the early stages of disease nuclear inclusion bodies can frequently be identified in proximal renal tubular cells. Renal function remains normal and the changes in this stage are probably reversible. With more advanced disease there is progressive interstitial fibrosis and impaired renal function. Eventually extensive interstitial fibrosis ensues with sclerotic glomeruli and dilated and atrophied proximal tubules; all represent end stage kidney disease. Azotemia can be progressive, eventually resulting in frank uremia necessitating dialysis. There is occasionally associated hypertension and hyperuricemia with or without gout.

Early kidney disease is difficult to detect. The urinalysis is normal in early lead nephropathy and the blood urea nitrogen and serum creatinine increase only when two-thirds of kidney function is lost. Measurement of creatinine clearance can often detect earlier disease as can other methods of measurement of glomerular filtration rate. An abnormal Ca-EDTA mobilization test has been used to differentiate between lead-induced and other nephropathies, but this procedure is not widely accepted. A form of Fanconi syndrome with aminoaciduria, glycosuria, and hyperphosphaturia indicating severe injury to the proximal renal tubules is occasionally seen in children.

5. Reproductive effects. Exposure to lead can have serious effects on reproductive function in both males and females. In male workers exposed to lead there can be a decrease in sexual drive, impotence, decreased ability to produce healthy sperm, and sterility. Malformed sperm (teratospermia), decreased number of sperm (hypospermia), and sperm with decreased motility (asthenospermia) can all occur. Teratospermia has been noted at mean blood lead levels of 53 μg/dl and hypospermia and asthenospermia at 41 μg/dl. Furthermore, there appears to be a dose-response relationship for teratospermia in lead exposed workers.

Women exposed to lead may experience menstrual disturbances including dysmenorrhea, menorrhagia and amenorrhea. Following exposure to lead, women have a higher frequency of sterility, premature births, spontaneous miscarriages, and stillbirths.

Germ cells can be affected by lead and cause genetic damage in the egg or sperm cells before conception and result in failure to implant, miscarriage, stillbirth, or birth defects.

Infants of mothers with lead poisoning have a higher mortality during the first year and suffer from lowered birth weights, slower growth, and nervous system disorders.

Lead can pass through the placental barrier and lead levels in the mother's blood are comparable to concentrations of lead in the umbilical cord at birth. Transplacental passage becomes detectable at 12-14 weeks of gestation and increases until birth.

There is little direct data on damage to the fetus from exposure to lead but it is generally assumed that the fetus and newborn would be at least as susceptible to neurological damage as young children. Blood

lead levels of 50–60 μg/dl in children can cause significant neurobehavioral impairments and there is evidence of hyperactivity at blood levels as low as 25 μg/dl. Given the overall body of literature concerning the adverse health effects of lead in children, OSHA feels that the blood lead level in children should be maintained below 30 μg/dl with a population mean of 15 μg/dl. Blood lead levels in the fetus and newborn likewise should not exceed 30 μg/dl.

Because of lead's ability to pass through the placental barrier and also because of the demonstrated adverse effects of lead on reproductive function in both the male and female as well as the risk of genetic damage of lead on both the ovum and sperm, OSHA recommends a 30 μg/dl maximum permissible blood lead level in both males and females who wish to bear children.

6. Other toxic effects. Debate and research continue on the effects of lead on the human body. Hypertension has frequently been noted in occupationally exposed individuals although it is difficult to assess whether this is due to lead's adverse effects on the kidney or if some other mechanism is involved. Vascular and electrocardiographic changes have been detected but have not been well characterized. Lead is thought to impair thyroid function and interfere with the pituitary-adrenal axis, but again these effects have not been well defined.

III. Medical Evaluation

The most important principle in evaluating a worker for any occupational disease including lead poisoning is a high index of suspicion on the part of the examining physician. As discussed in Section 2, lead can affect numerous organ systems and produce a wide array of signs and symptoms, most of which are non-specific and subtle in nature at least in the early stages of disease. Unless serious concern for lead toxicity is present, many of the early clues to diagnosis may easily be overlooked.

The crucial initial step in the medical evaluation is recognizing that a worker's employment can result in exposure to lead. The worker will frequently be able to define exposures to lead and lead containing materials but often will not volunteer this information unless specifically asked. In other situations the worker may not know of any exposures to lead but the suspicion might be raised on the part of the physician because of the industry or occupation of the worker. Potential occupational exposure to lead and its compounds occur in many occupations in the construction industry, including demolition and salvaging operations, removal or encapsulation of materials containing lead, construction, alteration, repair or renovation of structures containing lead, transportation, disposal, storage or containment of lead or lead-containing materials on construction sites, and maintenance operations associated with construction activities.

Once the possibility for lead exposure is raised, the focus can then be directed toward eliciting information from the medical history, physical exam, and finally from laboratory data to evaluate the worker for potential lead toxicity.

A complete and detailed work history is important in the initial evaluation. A listing of all previous employment with information on job description, exposure to fumes or dust, known exposures to lead or other toxic substances, a description of any personal protective equipment used, and previous medical surveillance should all be included in the worker's record. Where exposure to lead is suspected, information concerning on-the-job personal hygiene, smoking or eating habits in work areas, laundry procedures, and use of any protective clothing or respiratory protection equipment should be noted. A complete work history is essential in the medical evaluation of a worker with suspected lead toxicity, especially when long term effects such as neurotoxicity and nephrotoxicity are considered.

The medical history is also of fundamental importance and should include a listing of all past and current medical conditions, current medications including proprietary drug intake, previous surgeries and hospitalizations, allergies, smoking history, alcohol consumption, and also non-occupational lead exposures such as hobbies (hunting, riflery). Also known childhood exposures should be elicited. Any previous history of hematological, neurological, gastrointestinal, renal, psychological, gynecological, genetic, or reproductive problems should be specifically noted.

A careful and complete review of systems must be performed to assess both recognized complaints and subtle or slowly acquired symptoms which the worker might not appreciate as being significant. The review of symptoms should include the following:

1. General—weight loss, fatigue, decreased appetite.

2. Head, Eyes, Ears, Nose, Throat (HEENT)—headaches, visual disturbances or decreased visual acuity, hearing deficits or tinnitus, pigmentation of the oral mucosa, or metallic taste in mouth.

3. Cardio-pulmonary—shortness of breath, cough, chest pains, palpitations, or orthopnea.

4. Gastrointestinal—nausea, vomiting, heartburn, abdominal pain, constipation or diarrhea.

5. Neurologic—irritability, insomnia, weakness (fatigue), dizziness, loss of memory, confusion, hallucinations, incoordination, ataxia, decreased strength in hands or feet, disturbances in gait, difficulty in climbing stairs, or seizures.

6. Hematologic—pallor, easy fatigability, abnormal blood loss, melena.

7. Reproductive (male and female and spouse where relevant)—history of infertility, impotence, loss of libido, abnormal menstrual periods, history of miscarriages, stillbirths, or children with birth defects.

8. Musculo-skeletal—muscle and joint pains.

The physical examination should emphasize the neurological, gastrointestinal, and cardiovascular systems. The worker's weight and blood pressure should be recorded and the oral mucosa checked for pigmentation characteristic of a possible Burtonian or lead line on the gingiva. It should be noted, however, that the lead line may not be present even in severe lead poisoning if good oral hygiene is practiced.

The presence of pallor on skin examination may indicate an anemia which, if severe, might also be associated with a tachycardia. If an anemia is suspected, an active search for blood loss should be undertaken including potential blood loss through the gastrointestinal tract.

A complete neurological examination should include an adequate mental status evaluation including a search for behavioral and psychological disturbances, memory testing, evaluation for irritability, insomnia, hallucinations, and mental clouding. Gait and coordination should be examined along with close observation for tremor. A detailed evaluation of peripheral nerve function including careful sensory and motor function testing is warranted. Strength testing particularly of extensor muscle groups of all extremities is of fundamental importance.

Cranial nerve evaluation should also be included in the routine examination.

The abdominal examination should include auscultation for bowel sounds and abdominal bruits and palpation for organomegaly, masses, and diffuse abdominal tenderness.

Cardiovascular examination should evaluate possible early signs of congestive heart failure. Pulmonary status should be addressed particularly if respirator protection is contemplated.

As part of the medical evaluation, the interim lead standard requires the following laboratory studies:

1. Blood lead level

2. Hemoglobin and hematocrit determinations, red cell indices, and examination of the peripheral blood smear to evaluate red blood cell morphology

3. Blood urea nitrogen

4. Serum creatinine

5. Routine urinalysis with microscopic examination.

6. A zinc protoporphyrin level.

In addition to the above, the physician is authorized to order any further laboratory or other tests which he or she deems necessary in accordance with sound medical practice. The evaluation must also include pregnancy testing or laboratory evaluation of male fertility if requested by the employee. Additional tests which are probably not warranted on a routine basis but may be appropriate when blood lead and ZPP levels are equivocal include delta aminolevulinic acid and coproporphyrin concentrations in the urine, and dark-field illumination for detection of basophilic stippling in red blood cells.

If an anemia is detected further studies including a careful examination of the peripheral smear, reticulocyte count, stool for occult blood, serum iron, total iron binding capacity, bilirubin, and, if appropriate, vitamin B12 and folate may be of value in attempting to identify the cause of the anemia.

If a peripheral neuropathy is suspected, nerve conduction studies are warranted both

for diagnosis and as a basis to monitor any therapy.

If renal disease is questioned, a 24 hour urine collection for creatinine clearance, protein, and electrolytes may be indicated. Elevated uric acid levels may result from lead-induced renal disease and a serum uric acid level might be performed.

An electrocardiogram and chest x-ray may be obtained as deemed appropriate.

Sophisticated and highly specialized testing should not be done routinely and where indicated should be under the direction of a specialist.

IV. Laboratory Evaluation

The blood lead level at present remains the single most important test to monitor lead exposure and is the test used in the medical surveillance program under the lead standard to guide employee medical removal. The ZPP has several advantages over the blood lead level. Because of its relatively recent development and the lack of extensive data concerning its interpretation, the ZPP currently remains an ancillary test.

This section will discuss the blood lead level and ZPP in detail and will outline their relative advantages and disadvantages. Other blood tests currently available to evaluate lead exposure will also be reviewed.

The blood lead level is a good index of current or recent lead absorption when there is no anemia present and when the worker has not taken any chelating agents. However, blood lead levels along with urinary lead levels do not necessarily indicate the total body burden of lead and are not adequate measures of past exposure. One reason for this is that lead has a high affinity for bone and up to 90% of the body's total lead is deposited there. A very important component of the total lead body burden is lead in soft tissue (liver, kidney, and brain). This fraction of the lead body burden, the biologically active lead, is not entirely reflected by blood lead levels since it is a function of the dynamics of lead absorption, distribution, deposition in bone and excretion. Following discontinuation of exposure to lead, the excess body burden is only slowly mobilized from bone and other relatively stable body stores and excreted. Consequently, a high blood lead level may only represent recent heavy exposure to lead without a significant total body excess and likewise a low blood lead level does not exclude an elevated total body burden of lead.

Also due to its correlation with recent exposures, the blood lead level may vary considerably over short time intervals.

To minimize laboratory error and erroneous results due to contamination, blood specimens must be carefully collected after thorough cleaning of the skin with appropriate methods using lead-free blood containers and analyzed by a reliable laboratory. Under the standard, samples must be analyzed in laboratories which are approved by OSHA. Analysis is to be made using atomic absorption spectrophotometry, anodic stripping voltammetry or any method which meets the accuracy requirements set forth by the standard.

The determination of lead in urine is generally considered a less reliable monitoring technique than analysis of whole blood primarily due to individual variability in urinary excretion capacity as well as the technical difficulty of obtaining accurate 24 hour urine collections. In addition, workers with renal insufficiency, whether due to lead or some other cause, may have decreased lead clearance and consequently urine lead levels may underestimate the true lead burden. Therefore, urine lead levels should not be used as a routine test.

The zinc protoporphyrin test, unlike the blood lead determination, measures an adverse metabolic effect of lead and as such is a better indicator of lead toxicity than the level of blood lead itself. The level of ZPP reflects lead absorption over the preceding 3 to 4 months, and therefore is a better indicator of lead body burden. The ZPP requires more time than the blood lead to read significantly elevated levels; the return to normal after discontinuing lead exposure is also slower. Furthermore, the ZPP test is simpler, faster, and less expensive to perform and no contamination is possible. Many investigators believe it is the most reliable means of monitoring chronic lead absorption.

Zinc protoporphyrin results from the inhibition of the enzyme ferrochelatase which catalyzes the insertion of an iron molecule into the protoporphyrin molecule, which then becomes heme. If iron is not inserted into the molecule then zinc, having a greater affinity for protoporphyrin, takes the place of the iron, forming ZPP.

An elevation in the level of circulating ZPP may occur at blood lead levels as low as 20–30 μg/dl in some workers. Once the blood lead level has reached 40 μg/dl there is more marked rise in the ZPP value from its normal range of less than 100 μg/dl100 ml. Increases in blood lead levels beyond 40 μg/100 g are associated with exponential increases in ZPP.

Whereas blood lead levels fluctuate over short time spans, ZPP levels remain relatively stable. ZPP is measured directly in red blood cells and is present for the cell's entire 120 day life-span. Therefore, the ZPP level in blood reflects the average ZPP production over the previous 3–4 months and consequently the average lead exposure during that time interval.

It is recommended that a hematocrit be determined whenever a confirmed ZPP of 50 μg/100 ml whole blood is obtained to rule out a significant underlying anemia. If the ZPP is in excess of 100 μg/100 ml and not associated with abnormal elevations in blood lead levels, the laboratory should be checked to be sure that blood leads were determined using atomic absorption spectrophotometry anodic stripping voltammetry, or any method which meets the accuracy requirements set forth by the standard by an OSHA approved laboratory which is experienced in lead level determinations. Repeat periodic blood lead studies should be obtained in all individuals with elevated ZPP levels to be certain that an associated elevated blood lead level has not been missed due to transient fluctuations in blood leads.

ZPP has a characteristic fluorescence spectrum with a peak at 594 nm which is detectable with a hematofluorimeter. The hematofluorimeter is accurate and portable and can provide on-site, instantaneous results for workers who can be frequently tested via a finger prick.

However, careful attention must be given to calibration and quality control procedures. Limited data on blood lead-ZPP correlations and the ZPP levels which are associated with the adverse health effects discussed in Section 2 are the major limitations of the test. Also it is difficult to correlate ZPP levels with environmental exposure and there is some variation of response with age and sex. Nevertheless, the ZPP promises to be an important diagnostic test for the early detection of lead toxicity and its value will increase as more data is collected regarding its relationship to other manifestations of lead poisoning.

Levels of delta-aminolevulinic acid (ALA) in the urine are also used as a measure of lead exposure. Increasing concentrations of ALA are believed to result from the inhibition of the enzyme delta-aminolevulinic acid dehydrase (ALA-D). Although the test is relatively easy to perform, inexpensive, and rapid, the disadvantages include variability in results, the necessity to collect a complete 24 hour urine sample which has a specific gravity greater than 1.010, and also the fact that ALA decomposes in the presence of light.

The pattern of porphyrin excretion in the urine can also be helpful in identifying lead intoxication. With lead poisoning, the urine concentrations of coproporphyrins I and II, porphobilinogen and uroporphyrin I rise. The most important increase, however, is that of coproporphyrin III; levels may exceed 5,000 μg/l in the urine in lead poisoned individuals, but its correlation with blood lead levels and ZPP are not as good as those of ALA. Increases in urinary porphyrins are not diagnostic of lead toxicity and may be seen in porphyria, some liver diseases, and in patients with high reticulocyte counts.

Summary. The Occupational Safety and Health Administration's interim standard for inorganic lead in the construction industry places significant emphasis on the medical surveillance of all workers exposed to levels of inorganic lead above 30 μg/m^3 TWA. The physician has a fundamental role in this surveillance program, and in the operation of the medical removal protection program.

Even with adequate worker education on the adverse health effects of lead and appropriate training in work practices, personal hygiene and other control measures, the physician has a primary responsibility for evaluating potential lead toxicity in the worker. It is only through a careful and detailed medical and work history, a complete physical examination and appropriate laboratory testing that an accurate assessment can be made. Many of the adverse health effects of lead toxicity are either irreversible

or only partially reversible and therefore early detection of disease is very important.

This document outlines the medical monitoring program as defined by the occupational safety and health standard for inorganic lead. It reviews the adverse health effects of lead poisoning and describes the important elements of the history and physical examinations as they relate to these adverse effects. Finally, the appropriate laboratory testing for evaluating lead exposure and toxicity is presented.

It is hoped that this review and discussion will give the physician a better understanding of the OSHA standard with the ultimate goal of protecting the health and well-being of the worker exposed to lead under his or her care.

Appendix D to § 1926.62— Qualitative and Quantitative Fit Test Protocols

I. Fit Test Protocols

A. General: The employer shall include the following provisions in the fit test procedures. These provisions apply to both qualitative fit testing (QLFT) and quantitative fit testing (QNFT) permissible for compliance with paragraph (f)(3)(ii) of § 1926.62. All testing is to be conducted annually.

1. The test subject shall be allowed to pick the most comfortable respirator from a selection including respirators of various sizes from different manufacturers. The selection shall include at least three sizes of elastomeric facepieces of the type of respirator that is to be tested, i.e., three sizes of half mask; or three sizes of full facepiece. Respirators of each size must be provided from at least two manufacturers.

2. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine a comfortable fit. A mirror shall be available to assist the subject in evaluating the fit and positioning the respirator. This instruction may not constitute the subject's formal training on respirator use, as it is only a review.

3. The test subject shall be informed that he/she is being asked to select the respirator which provides the most comfortable fit. Each respirator represents a different size and shape, and if fitted, maintained and used properly, will provide adequate protection.

4. The test subject shall be instructed to hold each facepiece up to the face and eliminate those which obviously do not give a comfortable fit.

5. The more comfortable facepieces are noted; the most comfortable mask is donned and worn at least five minutes to assess comfort. Assistance in assessing comfort can be given by discussing the points in item 6 below. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

6. Assessment of comfort shall include reviewing the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

(a) position of the mask on the nose;
(b) room for eye protection;
(c) room to talk; and
(d) position of mask on face and cheeks.

7. The following criteria shall be used to help determine the adequacy of the respirator fit:

(a) chin properly placed;
(b) adequate strap tension, not overly tightened;
(c) fit across nose bridge;
(d) respirator of proper size to span distance from nose to chin;
(e) tendency of respirator to slip; and
(f) self-observation in mirror to evaluate fit and respirator position.

8. The test subject shall conduct the negative and positive pressure fit checks as described below or in ANSI Z88.2–1980. Before conducting the negative or positive pressure test, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another facepiece shall be selected and retested if the test subject fails the fit check tests.

(a) *Positive pressure check.* Close off the exhalation valve and exhale gently into the facepiece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

(b) *Negative pressure check.* Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, or long sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician to determine whether the test subject can wear a respirator while performing her or his duties.

11. If at any time within the first two week of use the respirator becomes uncomfortable, the test subject shall be given the opportunity to select a different facepiece and to be retested.

12. The employer shall maintain a record of the fit test administered to an employee. The record shall contain at least the following information:

(a) name of employee;
(b) type of respirator;
(c) brand, size of respirator;
(d) date of test;
(e) where QNFT is used: the fit factor, strip chart recording or other recording of the results of the test. The record shall be maintained until the next fit test is administered.

13. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

14. Test Exercises. The test subject shall perform exercises, in the test environment, in the manner described below:

(a) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

(b) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as to not hyperventilate.

(c) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

(d) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

(e) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage (see below), count backward from 100, or recite a memorized poem or song.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of gold at one end. People look, but no one ever finds it. When a man looks for something beyond reach, his friends say he is looking for the pot of gold at the end of the rainbow.

(f) Grimace. The test subject shall grimace by smiling or frowning.

(g) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT units which prohibit bending at the waist.

(h) Normal breathing. Same as exercise 1.

Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds. The test subject shall be questioned by the test conductor regarding the comfort of the

respirator upon completion of the protocol. If it has become uncomfortable, another model of respirator shall be tried.

B. Qualitative Fit Test (QLFT) Protocols. 1. *General* (a) The employer shall assign specific individuals who shall assume full responsibility for implementing the respirator qualitative fit test program.

(b) The employer shall ensure that persons administering QLFT are able to prepare test solutions, calibrate equipment and perform tests properly, recognize invalid tests, and assure that test equipment is in proper working order.

(c) The employer shall assure that QLFT equipment is kept clean and well maintained so as to operate at the parameters for which it was designed.

2. *Isoamyl Acetate Protocol.* (a) Odor threshold screening. The odor threshold screening test, performed without wearing a respirator, is intended to determine if the individual tested can detect the odor of isoamyl acetate.

(1) Three 1 liter glass jars with metal lids are required.

(2) Odor free water (e.g. distilled or spring water) at approximately 25 degrees C shall be used for the solutions.

(3) The isoamyl acetate (IAA) (also known at isopentyl acetate) stock solution is prepared by adding 1 cc of pure IAA to 800 cc of odor free water in a 1 liter jar and shaking for 30 seconds. A new solution shall be prepared at least weekly.

(4) The screening test shall be conducted in a room separate from the room used for actual fit testing. The two rooms shall be well ventilated but shall not be connected to the same recirculating ventilation system.

(5) The odor test solution is prepared in a second jar by placing 0.4 cc of the stock solution into 500 cc of odor free water using a clean dropper or pipette. The solution shall be shaken for 30 seconds and allowed to stand for two to three minutes so that the IAA concentration above the liquid may reach equilibrium. This solution shall be used for only one day.

(6) A test blank shall be prepared in a third jar by adding 500 cc of odor free water.

(7) The odor test and test blank jars shall be labeled 1 and 2 for jar identification. Labels shall be placed on the lids so they can be periodically peeled, dried off and switched to maintain the integrity of the test.

(8) The following instruction shall be typed on a card and placed on the table in front of the two test jars (i.e., 1 and 2): "The purpose of this test is to determine if you can smell banana oil at a low concentration. The two bottles in front of you contain water. One of these bottles also contains a small amount of banana oil. Be sure the covers are on tight, then shake each bottle for two seconds. Unscrew the lid of each bottle, one at a time, and sniff at the mouth of the bottle. Indicate to the test conductor which bottle contains banana oil."

(9) The mixtures used in the IAA odor detection test shall be prepared in an area separate from where the test is performed, in order to prevent olfactory fatigue in the subject.

(10) If the test subject is unable to correctly identify the jar containing the odor test solution, the IAA qualitative fit test shall not be performed.

(11) If the test subject correctly identifies the jar containing the odor test solution, the test subject may proceed to respirator selection and fit testing.

(b) Isoamyl acetate fit test.

(1) The fit test chamber shall be similar to a clear 55-gallon drum liner suspended inverted over a 2-foot diameter frame so that the top of the chamber is about 6 inches above the test subject's head. The inside top center of the chamber shall have a small hook attached.

(2) Each respirator used for the fitting and fit testing shall be equipped with organic vapor cartridges or offer protection against organic vapors. The cartridges or masks shall be changed at least weekly.

(3) After selecting, donning, and properly adjusting a respirator, the test subject shall wear it to the fit testing room. This room shall be separate from the room used for odor threshold screening and respirator selection, and shall be well ventilated, as by an exhaust fan or lab hood, to prevent general room contamination.

(4) A copy of the test exercises and any prepared text from which the subject is to read shall be taped to the inside of the test chamber.

(5) Upon entering the test chamber, the test subject shall be given a 6-inch by 5-inch piece of paper towel, or other porous, absorbent, single-ply material, folded in half and wetted with 0.75 cc of pure IAA. The test subject shall hang the wet towel on the hook at the top of the chamber.

(6) Allow two minutes for the IAA test concentration to stabilize before starting the fit test exercises. This would be an appropriate time to talk with the test subject; to explain the fit test, the importance of his/her cooperation, and the purpose for the head exercises; or to demonstrate some of the exercises.

(7) If at any time during the test, the subject detects the banana like odor of IAA, the test has failed. The subject shall quickly exit from the test chamber and leave the test area to avoid olfactory fatigue.

(8) If the test has failed, the subject shall return to the selection room and remove the respirator, repeat the odor sensitivity test, select and put on another respirator, return to the test chamber and again begin the procedure described in (I)(B)(2)(b) (1) through (7) of this appendix. The process continues until a respirator that fits well has been found. Should the odor sensitivity test be failed, the subject shall wait about 5 minutes before retesting. Odor sensitivity will usually have returned by this time.

(9) When a respirator is found that passes the test, its efficiency shall be demonstrated for the subject by having the subject break the face seal and take a breath before exiting the chamber.

(10) When the test subject leaves the chamber, the subject shall remove the saturated towel and return it to the person conducting the test. To keep the test area from becoming contaminated, the used towels shall be kept in a self sealing bag so there is no significant IAA concentration build-up in the test chamber during subsequent tests.

3. *Saccharin Solution Aerosol Protocol.* The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste threshold screening. The saccharin taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of saccharin.

(1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movements of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts ± FT 14 and ± FT 15 combined, is adequate.

(2) The test enclosure shall have a 3/4 inch hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.

(3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his/her wide open mouth with tongue extended.

(4) Using a DeVilbiss Model 40 Inhalation Medication Nebulizer the test conductor shall spray the threshold check solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.

(5) The threshold check solution consists of 0.83 grams of sodium saccharin USP in 1 cc of warm water. It can be prepared by putting 1 cc of the fit test solution (see (b)(5) below) in 100 cc of distilled water.

(6) To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then released and allowed to fully expand.

(7) Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted.

(8) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted.

(9) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted.

(10) The test conductor will take note of the number of squeezes required to solicit a taste response.

(11) If the saccharin is not tasted after 30 squeezes (step 10), the test subject may not perform the saccharin fit test.

(12) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(13) Correct use of the nebulizer means that approximately 1 cc of liquid is used at a time in the nebulizer body.

(14) The nebulizer shall be thoroughly rinsed in water, shaken dry, and refilled at

least each morning and afternoon or at least every four hours.

(b) Saccharin solution aerosol fit test procedure

(1) The test subject may not eat, drink (except plain water), or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure described in I. B. 3. (a) of this appendix.

(3) The test subject shall don the enclosure while wearing the respirator selected in section I. B. 3. (a) of this appendix. The respirator shall be properly adjusted and equipped with a particulate filter(s).

(4) A second DeVilbiss Model 40 Inhalation Medication Nebulizer is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

(5) The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 cc of warm water.

(6) As before, the test subject shall breathe through the wide open mouth with tongue extended.

(7) The nebulizer is inserted into the hole in the front of the enclosure and the fit test solution is sprayed into the enclosure using the same number of squeezes required to elicit a taste response in the screening test.

(8) After generating the aerosol the test subject shall be instructed to perform the exercises in section I. A. 14 above.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the number of squeezes as initially.

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected.

(11) If the taste of saccharin is detected, the fit is deemed unsatisfactory and a different respirator shall be tried.

(12) Successful completion of the test protocol shall allow the use of the tested respirator in contaminated atmospheres up to 10 times the PEL. In other words, this protocol may be used for assigned protection factors no higher than 10.

4. *Irritant Fume Protocol.* (a) The respirator to be tested shall be equipped with high-efficiency particulate air (HEPA) filters.

(b) The test subject shall be allowed to smell a weak concentration of the irritant smoke before the respirator is donned to become familiar with its characteristic odor.

(c) Break both ends of a ventilation smoke tube containing stannic oxychloride, such as the MSA part No. 5645, or equivalent. Attach one end of the smoke tube to a low flow air pump set to deliver 200 milliliters per minute.

(d) Advise the test subject that the smoke can be irritating to the eyes and instruct the subject to keep his/her eyes closed while the test is performed.

(e) The test conductor shall direct the stream of irritant smoke from the smoke tube towards the face seal area of the test subject. He/She shall begin at least 12 inches from the facepiece and gradually move to within one inch, moving around the whole perimeter of the mask.

(f) The exercises identified in section I. A. 14 above shall be performed by the test subject while the respirator seal is being challenged by the smoke.

(g) Each test subject passing the smoke test without evidence of a response shall be given a sensitivity check of the smoke from the same tube once the respirator has been removed to determine whether he/she reacts to the smoke. Failure to evoke a response shall void the fit test.

(h) The fit test shall be performed in a location with exhaust ventilation sufficient to prevent general contamination of the testing area by the test agent.

C. Quantitative Fit Test (QNFT) Protocol. 1. General. (a) The employer shall assign specific individuals who shall assume full responsibility for implementing the respirator quantitative fit test program.

(b) The employer shall ensure that persons administering QNFT are able to calibrate equipment and perform tests properly, recognize invalid tests, calculate fit factors properly and assure that test equipment is in proper working order.

(c) The employer shall assure that QNFT equipment is kept clean and well maintained so as to operate at the parameters for which it was designed.

2. Definitions. (a) Quantitative fit test. The test is performed in a test chamber. The normal air-purifying element of the respirator is replaced by a high-efficiency particulate air (HEPA) filter in the case of particulate QNFT aerosols or a sorbent offering contaminant penetration protection equivalent to high-efficiency filters where the QNFT test agent is a gas or vapor.

(b) Challenge agent means the aerosol, gas or vapor introduced into a test chamber so that its concentration inside and outside the respirator may be measured.

(c) Test subject means the person wearing the respirator for quantitative fit testing.

(d) Normal standing position means standing erect and straight with arms down along the sides and looking straight ahead.

(e) Maximum peak penetration method means the method of determining test agent penetration in the respirator as determined by strip chart recordings of the test. The highest peak penetration for a given exercise is taken to be representative of average penetration into the respirator for that exercise.

(f) Average peak penetration method means the method of determining test agent penetration into the respirator utilizing a strip chart recorder, integrator, or computer. The agent penetration is determined by an average of the peak heights on the graph or by computer integration, for each exercise except the grimace exercise. Integrators or computers which calculate the actual test agent penetration into the respirator for each exercise will also be considered to meet the requirements of the average peak penetration method.

(g) "Fit Factor" means the ration of challenge agent concentration outside with respect to the inside of a respirator inlet covering (facepiece or enclosure).

3. Apparatus. (a) Instrumentation. Aerosol generation, dilution, and measurement systems using corn oil or sodium chloride as test aerosols shall be used for quantitative fit testing.

(b) Test chamber. The test chamber shall be large enough to permit all test subjects to perform freely all required exercises without disturbing the challenge agent concentration or the measurement apparatus. The test chamber shall be equipped and constructed so that the challenge agent is effectively isolated from the ambient air, yet uniform in concentration throughout the chamber.

(c) When testing air-purifying respirators, the normal filter or cartridge element shall be replaced with a high-efficiency particulate filter supplied by the same manufacturer.

(d) The sampling instrument shall be selected so that a strip chart record may be made of the test showing the rise and fall of the challenge agent concentration with each inspiration and expiration at fit factors of at least 2,000. Integrators or computers which integrate the amount of test agent penetration leakage into the respirator for each exercise may be used provided a record of the readings is made.

(e) The combination of substitute air-purifying elements, challenge agent and challenge agent concentration in the test chamber shall be such that the test subject is not exposed in excess of an established exposure limit for the challenge agent at any time during the testing process.

(f) The sampling port on the test specimen respirator shall be placed and constructed so that no leakage occurs around the port (e.g. where the respirator is probed), a free air flow is allowed into the sampling line at all times and so that there is no interference with the fit or performance of the respirator.

(g) The test chamber and test set up shall permit the person administering the test to observe the test subject inside the chamber during the test.

(h) The equipment generating the challenge atmosphere shall maintain the concentration of challenge agent inside the test chamber constant to within a 10 percent variation for the duration of the test.

(i) The time lag (interval between an event and the recording of the event on the strip chart or computer or integrator) shall be kept to a minimum. There shall be a clear association between the occurrence of an event inside the test chamber and its being recorded.

(j) The sampling line tubing for the test chamber atmosphere and for the respirator sampling port shall be of equal diameter and of the same material. The length of the two lines shall be equal.

(k) The exhaust flow from the test chamber shall pass through a high-efficiency filter before release.

(l) When sodium chloride aerosol is used, the relative humidity inside the test chamber shall not exceed 50 percent.

(m) The limitations of instrument detection shall be taken into account when determining the fit factor.

(n) Test respirators shall be maintained in proper working order and inspected for defi-

ciencies such as cracks, missing valves and gaskets, etc.

4. Procedural Requirements. (a) When performing the initial positive or negative pressure test the sampling line shall be crimped closed in order to avoid air pressure leakage during either of these tests.

(b) An abbreviated screening isoamyl acetate test or irritant fume test may be utilized in order to quickly identify poor fitting respirators which passed the positive and/or negative pressure test and thus reduce the amount of QNFT time. When performing a screening isoamyl acetate test, combination high-efficiency organic vapor cartridges/canisters shall be used.

(c) A reasonably stable challenge agent concentration shall be measured in the test chamber prior to testing. For canopy or shower curtain type of test units the determination of the challenge agent stability may be established after the test subject has entered the test environment.

(d) Immediately after the subject enters the test chamber, the challenge agent concentration inside the respirator shall be measured to ensure that the peak penetration does not exceed 5 percent for a half mask or 1 percent for a full facepiece respirator.

(e) A stable challenge concentration shall be obtained prior to the actual start of testing.

(f) Respirator restraining straps shall not be overtightened for testing. The straps shall be adjusted by the wearer without assistance from other persons to give a reasonable comfortable fit typical of normal use.

(g) The test shall be terminated whenever any single peak penetration exceeds 5 percent for half masks and 1 percent for full facepiece respirators. The test subject shall be refitted and retested. If two of the three required tests are terminated, the fit shall be deemed inadequate.

(h) In order to successfully complete a QNFT, three successful fit tests are required. The results of each of the three independent fit tests must exceed the minimum fit factor needed for the class of respirator (e.g. half mask respirator, full facepiece respirator).

(i) Calculation of fit factors.

(1) The fit factor shall be determined for the quantitative fit test by taking the ratio of the average chamber concentration to the concentration inside the respirator.

(2) The average test chamber concentration is the arithmetic average of the test chamber concentration at the beginning and of the end of the test.

(3) The concentration of the challenge agent inside the respirator shall be determined by one of the following methods:

(i) Average peak concentration

(ii) Maximum peak concentration

(iii) Integration by calculation of the area under the individual peak for each exercise. This includes computerized integration.

(j) Interpretation of test results. The fit factor established by the quantitative fit testing shall be the lowest of the three fit factor values calculated from the three required fit tests.

(k) The test subject shall not be permitted to wear a half mask, or full facepiece respirator unless a minimum fit factor equivalent to at least 10 times the hazardous exposure level is obtained.

(l)) Filters used for quantitative fit testing shall be replaced at least weekly, or whenever increased breathing resistance is encountered, or when the test agent has altered the integrity of the filter media. Organic vapor cartridges/canisters shall be replaced daily (when used) or sooner if there is any indication of breakthrough by a test agent.

§1926.63 Cadmium.

[1926.63 added by 57 FR 42388, September 14, 1992; amended by 57 FR 49272, October 30, 1992; corrected by 58 FR 21787, April 23, 1993]

(a) *Scope.* This standard applies to all occupational exposures to cadmium and cadmium compounds, in all forms, in all construction work where an employee may potentially be exposed to cadmium. Construction work is defined as work involving construction, alteration and/or repair, including but not limited to the following:

(1) Wrecking, demolition or salvage of structures where cadmium or materials containing cadmium are present;

(2) Use of cadmium containing-paints and cutting, brazing, burning, grinding or welding on surfaces that were painted with cadmium-containing paints;

(3) Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain cadmium, or materials containing cadmium;

(4) Cadmium welding; cutting and welding cadmium-plated steel; brazing or welding with cadmium alloys;

(5) Installation of products containing cadmium;

(6) Electrical grounding with cadmium welding, or electrical work using cadmium-coated conduit;

[1926.63(a)(6) corrected by 58 FR 21787, April 23, 1993]

(7) Maintaining or retrofitting cadmium-coated equipment;

(8) Cadmium contamination/emergency cleanup; and

(9) Transportation, disposal, storage, or containment of cadmium or materials containing cadmium on the site or location at which construction activities are performed.

(b) *Definitions.*

[1926.63(b) corrected by 58 FR 21787, April 23, 1993]

Action level (AL) is defined as an airborne concentration of cadmium of 2.5 micrograms per cubic meter of air (2.5 $\mu g/m^3$), calculated as an 8-hour time-weighted average (TWA).

Assistant Secretary means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

Authorized person means any person authorized by the employer and required by work duties to be present in regulated areas or any person authorized by the OSH Act or regulations issued under it to be in regulated areas.

Competent person, in accordance with 29 CFR 1926.32(f), means a person designated by the employer to act on the employer's behalf who is capable of identifying existing and potential cadmium hazards in the workplace and the proper methods to control them in order to protect workers, and has the authority necessary to take prompt corrective measures to eliminate or control such hazards. The duties of a competent person include at least the following: Determining prior to the performance of work whether cadmium is present in the workplace; establishing, where necessary, regulated areas and assuring that access to and from those areas is limited to authorized employees; assuring the adequacy of any employee exposure monitoring required by this standard; assuring that all employees exposed to air cadmium levels above the PEL wear appropriate personal protective equipment and are trained in the use of appropriate methods of exposure control; assuring that proper hygiene facilities are provided and that workers are trained to use those facilities; and assuring that the engineering controls required by this standard are implemented, maintained in proper operating condition, and functioning properly.

Director means the Director of the National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, or designee.

Employee exposure and similar language referring to the air cadmium level to which an employee is exposed means the exposure to airborne cadmium that would occur if the employee were not using respiratory protective equipment.

Final medical determination is the written medical opinion of the employee's health status by the examining physician under paragraphs (l)(3)-(12) of this section or, if multiple physician review under paragraph (l)(13) of this section or the alternative physician determination under paragraph (l)(14) of this section is invoked, it is the final, written medical finding, recommendation or determination that emerges from that process.

High-efficiency particulate air (HEPA) filter means a filter capable of trapping and retaining at least 99.97 percent of mono-dispersed particles of 0.3 micrometers in diameter.

[Corrected by 58 FR 21787, April 23, 1993]

Regulated area means an area demarcated by the employer where an employee's exposure to airborne concentrations of cadmium exceeds, or can reasonably be