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ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: PROTECTING WORKERS FROM LEAD AND MATERIALS CONTAINING LEAD (PAINT)

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This EI is to update requirements for worker protection associated with exposure to lead on construction projects. Lead is a toxic metal that can cause damage to the nervous system, kidneys, bones, heart, and reproductive systems. Lead poisoning cases linked to workplace exposure may result from inhalation of fine dust particles containing lead, and from ingestion (eating) fine lead particles. Severe lead poisoning may also result from vaporization of lead during flame cutting, welding, or grinding operations.

EI-92-016 -- RESPIRATORY PROTECTION -- provided information on the hazards associated with worker lead exposure on Department Contracts, and referenced OSHA standards that must be met to protect workers. A special note was provided for inclusion in projects involving steel repairs and painting that alerted contractors to OSHA standards that were applicable at that time. In 1993, OSHA enacted an Interim Final Standard -- 1926.62 -- dealing with worker exposure to lead in construction. This new standard consolidates previous health and safety requirements relative to lead into a single standard, and adds or clarifies a number of provisions.

Contained in the standard are an Action Level (AL) and Permissible Exposure Level (PEL) for worker exposure to lead, both based on an 8-hr. Time Weighted Average (TWA). Exposure of workers above the AL of 30 ug/m^3 triggers various provisions of the standard including periodic exposure monitoring, biologic monitoring, and certain training. Employers are required to ensure that no employees are exposed to concentrations of lead in excess of the PEL of 50 ug/m^3.

This Engineering Instruction addresses three key elements:

1. NOTIFICATION

A revised special note -- consistent with OSHA 1926.62 -- is attached for inclusion in all Department projects that include work on structures coated with lead based paint. This will include contracts with items in any of the following series: 202, 211, 564, 565, 566, 568, 569, 570, 585, 587 and 589.

Projects involving any other work on structures with lead based paint, or any other anticipated exposure to lead, are to include this Special Note, beginning with the letting of January 13, 1994. Structures built after 1988 generally do not include lead-based paint. Projects involving these structures, and any others where lead-based paint or other forms of lead are not present, need not include this Special Note.

2. CONTRACTOR RESPONSIBILITIES

The most significant impacts of this standard are that employers are now required to develop written lead health plans prior to the start of work that may involve worker exposure to lead. The plan must identify potential sources of lead exposure, and propose specific procedures to protect workers from those exposures. To the extent feasible, employers must reduce worker lead exposure to the PEL by a combination of engineering, work practice, and administrative controls. Respiratory protection and other protective equipment must be provided and used to the extent that the engineering and work practice controls cannot reduce exposure to the PEL. In addition, employers must monitor worker exposure to lead, and must provide medical monitoring for exposed workers. Specific details on these requirements are provided in the standard, as well as in the OSHA Fact Sheets listed in the Special Note.

The OSHA Lead Standard requires that engineering and work practice controls be implemented to maintain worker exposure to lead at or below the PEL of 50 ug/m^3, based on an 8-hr. TWA. A number of provisions in current Department specifications for abrasive blasting require engineering and work practice controls that will help to reduce lead exposure. These include containment structures, ventilation systems with HEPA (High Efficiency Particulate - Air) filters, and use of vacuums with HEPA filters to clean up paint waste debris. As a minimum, the contractor shall be required to remove lead-based paint prior to heating, welding, or flame-cutting painted steel to reduce worker exposure below the PEL. In cases where the contractor can clearly demonstrate through exposure monitoring that other engineering and work practice controls can maintain worker exposure below the PEL, exceptions to this requirement may be granted.

To be in compliance with OSHA Standard 1926.62 and with various requirements of the Department's P S & E, the contractor must develop and submit to the EIC a written Lead Program prior to the start of any work that may involve worker exposure to lead. That plan must address all of the issues listed in the standard. As a minimum, it must address specific sources of lead exposure on the project, identifying specific operations and workers involved. An assessment of the anticipated exposure must be provided, including a discussion of the engineering and work practice controls

considered to maintain exposure at or below the PEL. In addition, worker training, exposure monitoring, health monitoring, respirators and protective equipment, hygiene practices, and other requirements of the standard must be addressed in specific terms relative to the project.

3. INSPECTION STAFF

To the extent required by the actual levels of exposure encountered during the conduct of their duties, inspection staff must be provided protection under this standard by their employers. This requirement applies to both Department and Consultant employees. The Department is currently monitoring lead exposure for inspection staff assigned to sandblasting and steel repair activities. At this time, the Department's approach is to limit exposure of inspection staff to below the PEL and preferably to below the AL in order to reduce the need for respirators and other protective equipment. However, at this time, the need for respirators and the protective equipment must be assessed on a case-by-case basis, under the guidance of the Regional Construction Safety Coordinator and Regional Safety Representative. When the anticipated exposure requires respirators and protective equipment, the requirements of 1926.62 are to be followed. RCSC's have been provided more detailed instructions for protecting Department employees from lead exposure, and they are to be consulted prior to the start of any inspection tasks involving lead-based paint.

The attached Special Note replaces the Special Note issued by EI-92-016. Efforts are currently underway to develop a Specification for Worker Lead Protection, including appropriate pay items. However, the attached Special Note is to be used until that Specification is ready.

SPECIAL NOTE

By issuance of this Special Note, contractors are alerted to the fact that the paint coating on the structures in this project contains lead. Lead is a toxic metal capable of causing damage to the nervous system, kidneys, bones, heart, and reproductive system.

The contractor is alerted to OSHA requirements for worker lead protection included in 29 CFR 1926.62. Additional OSHA requirements including Hazard Communication (29 CFR 1926.59), Safety Training (29 CFR 1926.21), and other OSHA standards must also be met as applicable. A written lead compliance program is a required component of the Project Health and Safety Plan listed in Section 107-05, Subsection A, of the Standard Specifications.

The Contractor shall provide to the Engineer a written lead compliance program in full compliance with all aspects of OSHA CFR 1926.62. As a minimum, it shall address the specific issues listed in paragraph (e) (2) of 1926.62. In addition, it shall provide detailed information describing the training and experience of the competent person who will supervise the compliance program on site. A description of procedures to monitor worker exposures to lead and the proposed medical monitoring program shall be provided. If respirators are to be used to protect workers from lead exposure, a written respirator program shall be provided. In addition, the contractor's written Hazard Communication program and worker lead training program shall be included.

Specific operations that would likely result in worker exposure to lead include, but are not limited to, the following:

- Removal of lead based paint coatings by abrasive blasting or other procedures.
- Cleanup and removal of paint debris.
- Cleanup, relocation, and dismantling of paint removal containment structures.
- Flame cutting, heating, or welding of steel coated with lead-based paint.
- Removal of bolts or rivets coated with lead-based paint.
- Any other operations that may dislodge existing coatings of lead-based paint, or subject them to abrasion or elevated temperatures.

Contractors are specifically alerted to the requirements of CFR 1926.62 relating to the implementation of engineering and work practice controls. Contractors shall be required to identify and implement feasible controls to reduce worker exposure to lead to a level at or below the Permissible Exposure Level stated in CFR 1926.62. The use of respirators and protective clothing as described in 1926.62 shall be used to supplement engineering and

work practice controls, if necessary, to protect workers from exposures above the Permissible Exposure Level. Sole reliance on respirators or protective clothing to protect workers from exposures above the Permissible Exposure Level, without first implementing feasible engineering and work practice controls, shall not be permitted except for initial assessment of exposure levels as described in 1926.62 (d). The removal of lead-based paint from structural steel shall be required prior to heating, welding, or flame cutting to reduce worker exposure below the Permissible Exposure Level. In cases where the contractor can clearly demonstrate through exposure monitoring that other work practices and engineering controls, under the oversight of a certified industrial hygienist, can effectively maintain actual worker exposure below the permissible exposure level, exceptions to this requirement may be granted by the Engineer.

The contractor shall provide to the Engineer upon request copies of documentation to demonstrate full compliance with CFR 1926.62. These records shall include the written compliance plan and associated training and respirator programs, as well as records relating to completion of required training, exposure and medical monitoring, and other such records as are necessary to document compliance with the standard.

The contractor is referred to the following publications for additional information:

OSHA - 3142 - Lead in Construction
OSHA - Fact Sheet 93-47 - Worker Protection Programs
OSHA - Fact Sheet 93-48 - Engineering Controls
OSHA - Fact Sheet 93-49 - Housekeeping and Personal Hygiene Practices
OSHA - Fact Sheet 93-50 - Protective Clothing
OSHA - Fact Sheet 93-51 - Respiratory Protection
OSHA - Fact Sheet 93-52 - Medical Surveillance