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## Scrap Metal Recycler Should Reduce Employee Exposures to Hazardous Metals, NIOSH Says - 08/24/2005

The National Institute for Occupational Safety and Health (NIOSH) is advising a scrap metal recycling facility in Lima, Ohio, to comply with substance-specific OSHA requirements for reducing employee exposures to certain hazardous metals, among other recommendations made in a Health Hazard Evaluation conducted by the agency.

As part of a Health Hazard Evaluation of OmniSource Corp.'s recycling facility in Lima, NIOSH found that workers' exposures to lead, cadmium, nickel, copper, iron and arsenic exceeded federal limits. NIOSH says its investigators also detected lead and other metals on employees' hands and PPE.

OmniSource, which is one of the largest processors and distributors of ferrous and non-ferrous scrap metal in North America, requested the evaluation in 2003. In the request, the company's director of safety asked NIOSH for guidance in determining whether the Lima facility needed showers for employees whose airborne exposures to lead exceeded OSHA's permissible exposure limit of 50 micrograms per cubic meter of air. Workers known to have higher exposures to lead used hand-held oxygen/propane torches to cut bulk scrap into smaller pieces, according to the evaluation report.

After conducting its evaluation, NIOSH says its investigators concluded that:

- Burners cutting scrap at the time of the NIOSH survey were overexposed to lead, cadmium, nickel, copper and inorganic arsenic.
- Some plate cutters were overexposed to lead.
- In general, levels of exposures to hazardous metals were higher for burners than for plate cutters.
- Burners were not exposed to metals at levels that exceeded the protection factor of their air-purifying respirators.
- Lead and other hazardous metals were detected on employees' hands and on their PPE. Surface levels of hazardous metals were higher for burners than for plate cutters.

In order to reduce employees' exposures to lead and other hazardous metals during torching operations, NIOSH recommended that OmniSource's Lima facility:

1. Comply with the substance-specific OSHA standards for arsenic, lead and cadmium. The agency also pointed out that OSHA Standard 29 CFR 1910.1000 (Air Contaminants) provides general compliance requirements for other metals such as copper and nickel.
2. Use engineering controls to reduce worker exposures. A properly designed cross-draft or side-draft booth (similar to a paint booth) may reduce employee exposures to metal fumes, according to NIOSH. The agency pointed to the ACGIH Industrial Ventilation manual, which has examples of designs for a large drive-through spray paint booth; an automated/high production water wash downdraft paint booth; a production line welding booth; and a torch cutting ventilation system that may be modified for employers' own torch cutting operations. The booth also may help protect employees from adverse weather conditions - for example, it could be heated in the winter and air-conditioned in the summer to provide a more comfortable work environment.
3. Provide showers for employees exposed to hazardous metals as required by the substance-specific OSHA standards until engineering controls to reduce occupational exposures are implemented. If engineering controls cannot reduce exposures below applicable occupational exposure limits, then showers must continue to be provided as required by the referenced OSHA standards, NIOSH said.
4. Require employees to clean the interior and exterior surfaces of their PPE daily. A station such as a sink with cleaning supplies should be provided for employees to clean respirators and other PPE. (OSHA's 29 CFR 1910.134 [Appendix B-2] provides mandatory respiratory cleaning procedures.)
5. Require employees to wash hands before eating or smoking to avoid ingesting hazardous metals and contaminating the break room area. This topic, NIOSH said, should be added to the list of Hygiene Rules in the OmniSource written Lead Hazard Program.
6. Conduct PBZ air monitoring to evaluate potential exposures to welding gases. The same engineering controls implemented to reduce exposures to metal fumes also should effectively reduce exposures to welding gases, according to the agency.
7. Include plate cutters in the OmniSource Lead Hazard and Respiratory Protection programs.
8. Encourage employees to wear gauntlet leather gloves designed for torch cutting to minimize the risk of burn injury and review torch cutting practices to determine the cause of burns and take corrective action to minimize these injuries.

OmniSource, according to its Web site, generates annual sales revenue of \$1.8 billion from 6.5 million tons of ferrous

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scrap and 700 million pounds of non-ferrous metals. The company says it employs more than 1,750 people in 35 facilities located in seven states and Canada. OmniSource employs 35 individuals at its Lima facility, according to NIOSH.

The full evaluation report is available at <http://www.cdc.gov/niosh/hhe/reports/pdfs/2003-0367-2973.pdf>.

- Josh Cable



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