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MEXICO'S REVISED STANDARD ON WELDING AND CUTTING SAFETY & HEALTH

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In the last two months of 2008 Mexico's Secretariat of Labor and Social Security (STPS in Spanish) issued a number of new and revised workplace health and safety rules, known as Official Mexican Standards (NOMs). These included revisions to NOM-001-STPS-2008 referring to safety conditions in buildings, premises, installations, and areas, NOM-017-STPS-2008 for Personal Protection Equipment (PPE), NOM-022-STPS-2008 for static electricity in the workplace, NOM-025-STPS-2008 addressing lighting conditions in the workplace, NOM-026-STPS-2008 on Safety and Health colors and signals, and hazard identification of fluids in pipe systems, and NOM-027-STPS-2008 on welding and cutting. A new standard dealing with safety in underground coal mines, NOM-032-STPS-2008, was also issued nearly two years after 65 miners lost their lives at the Pasta de Conchos coal mine in Mexico's worst mine disaster. Over the next few months we will take a look at some of these standards to see how they have changed.

We start the year with an overview of the revised standard for welding and cutting health and safety, NOM-027-STPS-2008, published in Mexico's Official Journal of the Federation (similar to the U. S. Federal Register) on November 7, 2008. The standard comes into effect 60 days following its publication. Most of the requirements of the original standard issued in December 2000 remain in place with some important additions, which we will highlight.

The revised standard maintains the employer's responsibility for conducting a hazard assessment of welding and cutting operations to serve as the basis for establishing preventive measures for protection of workers, other exposed individuals, and the workplace. The job hazard assessment must include, at a minimum:

- The type of equipment or welding and cutting machinery used.
- A list of materials, elements, and alloys used as base material or additives, as well as the chemical reactions that are produced and the contaminants generated.

- A list of all health hazard factors, which includes the cause and effect relationship due to exposure to fumes and gases; infrared, ultraviolet radiation and high intensity light; noise; electric shock; explosions, or oxygen-deficient atmospheres.
- The control strategy to minimize or eliminate the hazard.
- A list of contents of the first aid kit

The revised standard contains a non-mandatory reference guide to assist in the hazard identification process listing various hazard types such as ergonomic, electric shock, noise and vibration, fumes, gases and vapor emissions, non-ionizing radiation (visible, ultraviolet and infrared), heat and burns in different welding operations, including plasma, gas metal, gas tungsten, submerged arc, and oxy-fuel.

The employer's obligations include:

- Notifying workers of the risks related to welding and cutting activities.
- Establishing and maintaining adequate health and safety conditions in the areas, equipment and accessories involved in welding and cutting.
- Developing safety procedures for welding and cutting operations.
- Providing workers with personal protection equipment according to the revised PPE standard NOM-017-STPS-2008, and training them on the proper use and maintenance of such equipment.
- Providing at a minimum annual training for workers engaged in welding and cutting based on established procedures.
- In a new requirement, verifying that outside contractors performing welding comply with all the requirements of the standard.

The health and safety conditions to be followed for welding and cutting are:

- Adequate natural or artificial ventilation in welding areas.
- Proper personal protection equipment must be provided for the hazards identified.
- Welding booths or screens must be used to delineate welding and cutting areas.
- A hot work permit with the procedures and forms for authorizing welding and cutting operations in hazardous locations must be completed and signed.
- Following established safety procedures during welding or cutting operations.
- Keeping a first aid kit in the welding or cutting areas based on the risks identified in the job hazard assessment.
- Tools, equipment, materials and protection devices must be in good working order.

In addition, the revised standard now requires keeping a maintenance log of welding equipment safety devices with their serial number, make, model and lot number, and prohibits the use of reconstructed pressure regulators. It also requires that electrical installations supplying power to welding and cutting equipment be labeled and have

signage in accordance to the machine guarding and lock-out standard, NOM-004-STPS-1999, and the revised NOM-026-STPS-2008 on safety colors and signals.

The site-specific health and safety program in the old standard has been replaced by a Safety Procedures chapter in the revised NOM covering specific requirements in six major areas: welding and cutting activities; machinery and equipment; areas and facilities; contingencies in the event of combustible gas releases; welding in confined spaces, and work authorization for welding in hazardous areas. Some of these requirements include:

- Monthly documented inspections of welding and cutting equipment to ensure fitness-for-service.
- Grounding all equipment in compliance with NOM-022-STPS-2008 for static electricity in the workplace.
- Monitoring for explosive, flammable, irritant or oxygen-deficient atmospheres.

In the revised NOM the safety procedures for handling, operation, and maintenance of cylinders, valves, regulators, hoses and connections, and electrical power supply are described in a non-mandatory Reference Guide with concrete instructions in each of the areas, which is included as an attachment to the standard.

The standard describes procedures to be followed during confined space welding and cutting, including: completing a hot work permit, implementing a lockout-tagout procedure, monitoring for hazardous atmospheres, providing a rescue apparatus and attendant system, and conducting a close-out inspection.

The revised standard includes a new chapter dealing with rescue operations when welding on elevated surfaces, in confined spaces, basements, underground areas, or in containers where flammable or explosive vapors or dusts may be present. A life rescue procedure and equipment is now required when welding and cutting in these hazardous conditions. Rescue workers must be trained at least annually to provide first aid, cardio-pulmonary resuscitation, and in life rescue for those welding operations. In addition, at least one fire extinguisher must be available in the welding and cutting area.

Welders are still required to undergo specific medical evaluations in accordance to the Health Ministry's (SSA) requirements, or based on recommendations from their private physician. In the absence of regulatory guidance from SSA, the company's doctor shall determine the scope of the annual medical exams and any follow-up activities. All medical information shall be recorded and filed in the worker's permanent record.

A major addition to the standard is the Compliance Guide consisting of a checklist of verification criteria to be used by STPS inspectors to evaluate compliance with the requirements of the standard. The provisions of the standard may be verified by direct observation, documentary proof, and personnel interviews. As in all STPS standards, employers still have the option of contracting with an accredited third-party Verification Unit to verify or evaluate compliance with the standard.

The non-mandatory reference guide for personal protection equipment in welding and cutting operations in the original standard has been deleted from this version.

The revised standard's bibliography section lists the American National Standard Institute's voluntary standard ANSI/ASC Z49.1-1988: Safety in Welding and Cutting, as well as the U.S. National Institute for Occupational Safety and Health's (NIOSH) Criteria for Recommended Standard for Welding Brazing and Thermal Cutting.

If you have questions about how the new environmental impact regulations may affect your current or future projects, please contact us at (619) 297-1469 or send us an email at emedina@pulse-point.com.

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