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SAFETY IN ELECTRICAL INSTALLATIONS – NEW STANDARD ISSUED BY MEXICO’S LABOR DEPARTMENT

By Enrique Medina, MS, CIH

The Mexican Secretariat of Labor and Social Security (STPS for its Spanish acronym) published Official Mexican Standard NOM-029-STPS-2005, “Maintenance of Electrical Installations in the Workplace. Safety Conditions” in the Official Gazette on May 31, 2005. The standard, commonly referred to as a “NOM”, became enforceable on July 30, 2005.

The purpose of the NOM is to establish safety conditions for electrical maintenance activities in an effort to avoid accidents for personnel involved in this work, as well as other exposed workers.

The Standard applies in all workplaces in Mexico for both permanent and temporary electrical installations, and to all maintenance activities performed in aerial and underground electrical lines.

The standard emphasizes the following key compliance aspects:

- Establishes Best Management Practices in maintenance procedures in aerial and underground electrical lines for the safety of employees and the facility.
- Establishes specific procedures for risk assessments prior to proceeding with maintenance actions. The Potential Risk Assessment process identifies hazardous activities during maintenance of the electrical installations, which may result in release of energy, and worker injury from direct contact or even proximity to energized parts, including electric arcs, sparks, or explosion of electrical devices.
- It details the procedures to implement during maintenance activities, including obtaining written authorization from the supervisor to a qualified worker; describing where, when, and how the action will take place; listing materials, equipment, and documentation that must be used, and documenting how these activities will be controlled and recorded.
- Emphasizes the importance of training supervisory and maintenance personnel, as well as all facility employees on the potential risks of coming in contact with

electrical system components. Training must include classroom and practical topics on the use, maintenance, inspection, and storage of personal protective equipment (PPE), as well as insulated tools, equipment, and materials.

- It also requires training all personnel assigned to rescue employees injured by electric shock, and those assigned to provide first aid responders.
- It describes safety measures that must be implemented in permanent or temporary electrical installations, substations, and aerial and underground lines.

Among the safety measures that must be adopted in the workplace are the following:

- Maintenance personnel must have access to current electrical wiring diagrams of the electrical installation, and a table of installed load of the main installation, and each branch circuit.
- Written authorization must be provided to electrical maintenance workers in hazardous locations (heights, confined spaces, substations, and others). Lockout devices or safety tags must be placed on equipment or electrical control devices where the activity will take place. Before performing maintenance tasks, employees must check that the grounding system is operating, or connect a temporary ground.
- Electrical maintenance employees must be provided with the required PPE according to Appendix A of NOM-017-STPS-2001, based on the specific risk assessment. Examples of PPE are insulated poles, leather or non-conductive gloves (depending on the type, and voltage), eye protection, hardhat, work clothes, and non-conductive boots.
- Make available the necessary non-conductive protection equipment and materials according to the voltage or feed current. Designate an area for storing PPE, non-conductive tools and equipment, as well as instructions for its use, maintenance, storage, and inspection. Such instructions must include a schedule for inspection and replacement of tools and equipment.
- In the event outside contractors perform electrical maintenance activities, the facility is responsible for ensuring that contractor employees have the training, and qualifications to demonstrate their competence in conducting the electrical maintenance activities.
- All equipment destined for the use and distribution of electrical energy must have information to identify its electrical characteristics, and the safe distance for the present voltage, either on a plate, attached stickers, or directly marked on the equipment. Working distances must follow NOM-001-SEDE-1999, item 110-16 (working space around electrical equipment, and sections 110-32, and 110-33).
- Protection measures must be in place to keep energized devices out of reach of workers, such as protective barriers, insulation, access controls, and lowering to a safety voltage.
- Access to electrical substations must be control through locks, enclosures, fences, and limiting access only to those with a written work order authorization. Activities inside

of the substation must follow the “second man rule”, and must never be performed by only one individual.

- Written authorization from the control center or dispatch shift leader is required to set up temporary electrical installations.

The correct application and interpretation of this NOM may require consulting and applying the following current official Mexican standards, or those that replace them:

NOM-017-STPS-2001 Personal Protection Equipment – Selection, use, and maintenance in the workplace.

NOM-026-STPS-1998 Safety and health colors and signage, and identification of hazards from fluids conducted in pipes.

NOM-001-SEDE-1999 Electrical Installations (utilization).

NOM-029-STPS-2005 reinforces Chapter 4, Articles 47 through 51 in Chapter Four of the Federal Regulations on Safety, Hygiene, and the Work Environment, and fills an important gap in the regulatory framework in Mexico by clarifying the electrical safety measures that must be adopted in the workplace.

If you have questions about how this article or other health, safety or environmental issues, please contact us at (619) 297-1469 or send us an email at emedina@pulse-point.com.

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Alliance Consulting International
Partners in Environmental and Occupational Health and Safety
3361 28th St.
San Diego, California 92104
(619)297-1469
(fax (619)297-1023
emedina@pulse-point.com
www.pulse-point.com/alliance

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