



● **This Month's Question of the Month** – Multiple power sources that may include photovoltaic, wind, micro-hydro generators, engine driven generators, etc., but do not include utility distribution systems or batteries are defined as: A) hybrid systems, B) composite systems, C) mixed systems, D) photo voltaic distribution systems – *See the correct answer on page 2.*

● **Note From The Chief**

The Governor's Executive Order 11-03 extended the restrictions on rule making to December 31, 2012. I will be seeking an exception to the order that may allow for adoption of the 2014 NEC and adoption of rule proposals that have no significant opposition and benefit the electrical industry.

The Electrical Program will likely begin rule development about April 2012. WAC 296-46B will be opened for proposals and a Technical Advisory Committee will be formed to help review proposals and make recommendations to the department.

If you are interested in being a part of the program's rule making process and receiving other general Electrical Program information, you should join the Electrical Email List at: <http://www.lni.wa.gov/Main/Listservs/Electrical.asp> Additional information will also be published in the *Electrical Currents* newsletter in the coming months.

● **Grounding Electrode Conductor – Protection From Physical Damage**

Inspectors have been encountering grounding electrode installations that are subject to physical damage. NEC 250.64(B) has specific requirements for protection of exposed grounding electrode conductors.

Exposed grounding electrode conductors:

- Smaller than 6 AWG must always have physical protection.
- Sized 6 AWG that are free from exposure to physical damage are permitted to run along the surface of the building construction without protection where it is securely fastened to the building surface.
- Sized 4 AWG or larger must be protected where exposed to physical damage. This requirement was changed from "severe" physical damage in the 2005 NEC.

Physical damage is not defined in the NEC. The department's electrical inspectors will consider the grounding electrode conductor to not be exposed to physical damage when:

- The conductor is buried more than 12" deep in the earth outside the building's footprint.
- Encased or covered by 2" of concrete or asphalt.
- The conductor is inside the building footprint and protected by the building's structural elements or when inside and determined, by the inspector, to not be subject to physical damage.
- Enclosed by a metal or nonmetallic raceway or enclosure. The raceway or enclosure must be approved to protect from severe physical damage if it is not protected by appropriate physical barriers from contact with vehicles, lawn mowers, and other equipment that might damage the conductor or enclosure.

If ferrous metal raceways or enclosures are used to protect the conductor, they must be bonded at both ends to the conductor according to the requirements in NEC 250.64(E).

Problems with physical protection may be avoided by using grounding electrodes that do not require supplemental electrodes or where the grounding electrode conductor can be installed solely inside the structure of the building (e.g. concrete-encased electrode, exterior metal underground water pipe with 10' or more of the pipe in direct contact with the earth, etc.).

Safety Tip of the Month!

NW rains are coming. When flood waters suddenly inundate a building the damage can be catastrophic. For helpful information go to: <http://www.lni.wa.gov/TradesLicensing/Electrical/BasicElectInstall/NaturalDisasters/default.asp>

● Electrical Inspections On Tribal Trust or Fee Land

In simple terms, tribal trust lands are held in trust by the United States government for the use of a tribe. The United States holds the legal title and the tribe holds the beneficial interest. The electrical law does not apply on trust land. Fee lands are held by an owner, whether Indian or non-Indian. It is not uncommon for trust and fee lands to be intermingled with each other.

On tribal fee land, the electrical law applies and L&I will inspect electrical work and enforce licensing compliance as required by the electrical law. You must determine if you are working on fee land. If you are, you and your workers must be appropriately licensed and certified and get the appropriate permits and inspections.

The Electrical Program is often asked to make electrical inspections on tribal trust land. The program will make those inspections if the tribe is in agreement that we do our inspections using our normal methods (i.e. complete inspection of all electrical work – permit, cover, service, feeders, correction repair, etc.). If the tribe does not support having L&I do those activities, we will not inspect any of the electrical work. To not inspect the work behind a service potentially places the program and consumers at risk from possible electrical hazards that are not inspected. Before applying for an electrical permit, check with your tribal representative to determine if your work is on trust land. If the answer is yes, you should ask the tribe's representative to contact your local electrical supervisor with the tribe's approval to inspect.

● Placing Pre-manufactured Heat Mats

The placement of pre-manufactured heat mats in tile grout was added to Class A basic electrical work (i.e. work that doesn't require a permit) in a rule change that became effective November 25, 2005. WAC 296-46B-900(8)(b)(iv) says: *"Embedding pre-manufactured heat mats in tile grout where the mat is listed by an approved testing laboratory and comes from the manufacturer with pre-connected lead-in conductors. All listing marks and lead-in conductor labels must be left intact and visible for evaluation and inspection by the installing electrician and the electrical inspector."* The placement of pre-manufactured heat mats is considered a Class A electrical installation.

The mat installer does not have to be a certified electrician or an electrical trainee under supervision to place the pre-manufactured heat mat in tile grout (e.g. a tile setter). However, the connections of the cable leads to the controlling device must be done by a licensed electrical contractor using a certified electrician. An electrical permit and inspection is required for the electrical work. The field installation of single-wire heat cables or any mats that require field-connection of the non-heating leads to the mat is an electrical installation that requires electrical contractor licensing, electrician certification, permitting, and inspection.

● You Must Have Your Electrician Certificate On Your Person

Since 2009, all electricians and trainees have been required to have their certificate and a government issued photo identification in their possession at all times when working as an electrician or trainee. All electrical inspectors have the right to ask you to provide both. If you do not comply with the request for identification or do not have them in your possession, you are subject to civil penalties.

● When Do You Need To Be A Licensed Electrical Contractor?

You must be a licensed electrical contractor if you advertise, bid – a registered general contractor can also advertise and bid, or are in the business of installing or working on electrical wiring or equipment. Being a certified electrician does not allow a person to be an electrical contractor. Penalties for a violation of the electrical contractor licensing law begin at \$500 per violation. To become an electrical contractor, you must apply to L&I – electrical contractor application, an assigned electrical administrator, and a \$4,000 bond or assignment of savings.

An administrator is responsible to ensure the electrical contractor and the contractor's electricians follow the electrical law's requirements (see RCW 19.28.061(5)) and must be an officer in the company or a full-time supervisory employee. For more information about exams or becoming an electrical contractor or administrator call (360) 902-5269 or go to:

<http://www.lni.wa.gov/TradesLicensing/Electrical/LicenseExamEd/LicenseCert/default.asp>

● Answer to This Month's Question of the Month: A) – 2008 NEC 690.2

Electrical Section Internet Address: <http://www.Lni.wa.gov/TradesLicensing/electrical>

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