Question of the Month – When are photovoltaic (PV) system output circuit conductors required to be marked to indicate their polarity? See correct answer on Page 2.

Electrical Plan Review for Small Projects and Load Reductions

In L&I jurisdictions, plan review is required for all new or altered electrical projects in educational, institutional, or health care occupancies by WAC 296-46B-900(3)(b). However, under certain conditions allowed under WAC 296-46B-900(3)(a), projects that result in an electrical load reduction and modifications to existing installations where the service or feeder load calculations are not increased by more than 5% may be exempted from formal plan review requirements (and associated fees).

For these types of installations to qualify as exempt, the following information must be submitted to the local L&I electrical inspection office and reviewed before the work is initiated:

- A clear and adequate description of the project’s scope;
- A load calculation(s);
- What the load changes are, providing both before and after panel schedules, as needed; and
- Provide information showing that the service and feeder(s) supplying the panel(s) where the work is taking place has adequate capacity for any increased load and has code compliant overcurrent protection for that supply.

NICET Certification Required for Fire Alarm System Non-Electrical Tasks Effective July 1, 2018

Local fire and building inspection jurisdictions are the authorities having jurisdiction for enforcement of NICET certification requirements described in WAC 51-50-907.10.3 for fire alarm inspection, testing maintenance not defined as “electrical construction trade” by RCW 19.28.006.

In accordance with RCW 19.28.211(4), a properly certified electrician working within the scope of his certificate cannot be required to have additional certification to work in the electrical construction trade. Local fire and building inspection jurisdictions will enforce NICET certification requirements, which will only apply to tasks that do not require the worker to hold an electrician’s certificate of competency under RCW 19.28.

2020 NEC First Draft Report Published – Public Comment Period Now Open

As discussed last month, you may now view the First Draft of the 2020 NEC. This opens the public comment period, which will close on August 30, 2018. You may view the First Draft and submit a public comment for consideration by the code-making panels by visiting the NFPA 70 Next Edition page of NFPA’s website. The code-making panels will consider all public comments, and a Second Draft Report will be posted in April 2019. The 2020 NEC will be published in August 2019 and will probably be adopted in Washington beginning July 1, 2020.

NEW - Rapid Shutdown of PV Systems Inside the Array Boundary Effective January 1, 2019

Since 2014, the NEC has required PV systems installed in or on buildings to have a rapid shutdown function to reduce shock hazard for emergency responders. Effective January 1, 2019, NEC 690.12(B)(2) will require rapid shutdown of...
conductors and/or equipment inside the array boundary. If you install or inspect PV systems, review NEC 690.12(B)(2) for three options to comply with the rapid shutdown requirements within the array boundary.

**Supply Side PV Interconnection Grounding, Bonding, and Wiring Methods**

The supply side interconnection described in NEC 705.12(A) is a very popular method of interconnecting an alternate power production source such as PV in parallel with a normal supply system of a building or structure. This connection may be made on the supply side of the service disconnecting means as permitted by 230.82(C). In addition, 230.2(A) permits a building or structure to have an additional service to supply a parallel power production system. When a supply-side interconnection is made, it must be installed using the wiring methods, grounding, and bonding as if it were a separate service. Overcurrent protection for electric power production source conductors must be located within 10 feet of the point where they are connected to the service entrance conductors. The disconnecting means for the alternate power production source is not required to be grouped with the normal building service disconnect(s). **WAC 296-46B-705** states that electric power production source conductors connected to the supply side of the service disconnecting means must be installed using wiring methods specified for service conductors in **WAC 296-46B-230(7)**. In addition, the disconnecting means must be treated as an additional service disconnecting means for the purposes of grounding and bonding (i.e., main bonding jumper, grounding electrode conductor connected to the building electrode system, and bonding of services per NEC 250 Part V).

**PV Interconnection Rules Apply to Busbars in all Upstream Equipment**

When making an interconnection for an electric power production source such as a PV system in parallel with a utility service, rules must be followed to avoid overloading electrical conductors and equipment. NEC 705.12(B) says the output of an interconnected electric power production source may be connected to the load side of the service disconnecting means of the other source(s) at any distribution equipment on the premises. Interconnection of two sources of power in parallel have the potential to overload conductors and equipment if other loads are also being supplied. 705.12(B)(2) gives requirements for bus or conductor ampere ratings for feeders, taps, and busbars. Often, we receive questions about the protection of busbars upstream when the interconnection is made to a feeder or feeder panel downstream of the service panel. The rules for protecting busbars in 705.12(B)(2)(3) must be applied to all busbars in the current path from the point of interconnection upstream to and including the service panel for all busbars that also supply other loads. See the November and December 2014 newsletters for more details. The information is still accurate but some NEC article numbers have changed.

**Consideration of Fee Increase for Non-Electrical L&I Programs**

L&I is considering rule changes to increase fees for its Construction Contractor Registration, Elevator, and Factory Assembled Structures (FAS) programs. A fee increase is sought to cover increased operating expenses for inspections and other program public safety activities.

The rule changes under consideration would increase fees by the fiscal-growth factor rate of 4 percent. For example, a $60 fee would increase to $62.40.

As a required part of the rulemaking process, L&I filed a **preproposal (CR101)**, with the state Office of the Code Reviser on July 17, 2018. There will be opportunities to provide written comments or present testimony at public hearings. See the **L&I web site** for information about how to participate in the process.

If you need additional information or have any questions, please contact Alicia Curry, at 360-902-6244 or **Alicia.Curry@Lni.wa.gov**.

**Ugly Picture:** If viewing this document online, click on the picture to open a larger image. Hmm. I wonder what ill-conceived thought process produced this dangerous installation. Before the inspector took these pics, an electrical contractor discovered this and removed #10 conductors that were feeding a sub-panel from these screws.

**Answer to Question of the Month:** Where connected to energy storage systems. NEC 690.55