Washington State Department of Labor and Industries

ELECTRICAL CURRENTS

Newsletter from the Office of the Chief Electrical Inspector

Ron Fuller, Chief Electrical Inspector **Vol. 11 No. 8** **August 2008**

Contractors Receiving Improper Corrections

Contractors that received the latest Correction Reduction Initiative letter called us to say they were issued corrections in error. Some said the corrections they received should have been issued to the business or property owner. Some believe they received invalid corrections from the inspector.

Contractors, who believe they have received improper corrections, should contact the Electrical Inspection Field Supervisor for the issuing office to discuss possible removal of invalid corrections from their records.

Safety Tip of the Month!

Test equipment allows us to know the energized status of electrical systems. Keep yours in good repair and check it often with a known source of power. Your life may depend on it.

We use this initiative to improve our own performance as inspectors. A contractor should never accept invalid corrections because they fear reprisal from an inspector or supervisor.

Our inspectors are required to provide an accurate reference (NEC, WAC) for all corrections issued. Improper corrections will be removed from the contractor's records. If you feel you received inappropriate treatment from an electrical inspector, the local Electrical Inspection Field Supervisor and Regional Administrator need to be made aware of your situation.

Change Of Electrical Inspection Responsibility For The City Of Marysville

Labor and Industries was informed at the end of July that the City of Marysville will be taking responsibility for all electrical inspections within their jurisdiction on **September 15, 2008**. Permits and electrical inspections for electrical installations done within the City of Marysville must be obtained directly from the city offices. Please contact the city for permit requirements and information.

The City of Marysville web site is: http://ci.marysville.wa.us/

Do not buy your electrical permits from a Labor and Industries field office or from our online permitting system for work done in the city limits of Marysville after September 15, 2008. Labor and Industries will continue to perform inspections on electrical permits already in progress or those purchased prior to September 15th. Refunds are not allowed on any permit that has had an inspection.

WAC Revision Proposals Reviewed By The Electrical Board

At the regular, July 31, 2008, quarterly meeting the Electrical Board reviewed the WAC revision work of the department and Technical Advisory Committee. Their recommendations will be considered and the resulting WAC revisions will be presented at public hearings in Tumwater, Tukwila, and Spokane in late September. The exact times, dates, and locations will be in the September issue of this newsletter and announced first on the Electrical Listserv (a free subscription to this monthly newsletter and other electrical industry announcements available at: http://www.lni.wa.gov/Main/Listservs/Electrical.asp).

Starting with the September edition of this newsletter, we will include articles on 2008 NEC changes that will have economic impact on our stakeholders. We will continue with these and WAC revision preview articles each month until the effective date (target: December 31, 2008) of the 2008 NEC and revised chapter 296-46B WAC.

Rating Of The Feeder Disconnect At A Separate Building Or Structure

Two Code Making Panels (CMP) are responsible for the NEC articles relating to feeders. Article 215 (under CMP 2) determines the ampacity and overcurrent protection of all feeders. Article 225 (under CMP 4) addresses equipment ratings and physical characteristics of wiring at a separate building. The two panels avoid covering issues outside of their specific scope and responsibilities. Substantial revisions to these articles happened in the 1999 Code cycle. Study of the Committee Reports on Proposals (ROP) and Reports on Comments (ROC) published since that time reveals little about the specific "intent" of CMP actions.

In 2004 (for the 2005 NEC) CMP 2 rejected a proposal to add the following to Article 215-2(A)(5): "*The rating of panelboards and similar devices at which feeder conductors terminate, shall not exceed the feeder conductors ampacities.*" Their rejection statement stated: "*Larger ampere panelboards are often used in installations to gain the number of circuit spaces required by the design.*"

As recently as 2007 (for the 2008 NEC) CMP 4 has rejected proposals to clarify whether the minimum disconnect ratings in Article 225.39 "*applies to the rating of the disconnect or does this mean that the minimum size of a feeder to a building should be 60 amperes.*" CMP 4 responded to such proposals with statements like "*The title of 225.39 defines the requirement as solely being the rating of the disconnect*" and "*Future expansion has nothing to do with this requirement.*"

Until CMP 2 and CMP 4 do a better job of clarification, we will not make assumptions about their intent. For consistency, we will enforce exactly what each article says. Article 215.2 (and 220) will be used to determine the feeder conductor ampacity and overcurrent protection based on the calculated loads at a separate building. Article 225.39 will be used to determine the minimum rating of the separate building's disconnecting means.

Under the right combination of load calculation and number/type of circuits, it is possible to have a 30 ampere feeder terminate on a 60 ampere (or larger) disconnecting means at a separate building. This can create an unsafe condition if an unqualified individual reads only the circuit breaker marking and assumes there is more capacity for expansion than actually exists. At this time a mismatch of conductor ampacity and equipment rating needs an identification plate only on services, per WAC 296-46B-230(6). In this situation, we hope that quality contractors will do this identification voluntarily.

● Access To Inspect Installations Of Elevated Electrical Equipment

Increasing numbers of alternative energy source installations (and similar situations) have prompted this reminder. Inspection is required for the electrical work (solar panels, conduits, etc.) on the steep, snowy roof pictured to the right.

The contractor that performs any electrical installation requiring bucket or ladder trucks, scaffolding, special ladders, or other such equipment must make that equipment available to conduct the electrical inspection. Getting inspections completed is a required part of the overall installation responsibilities of the contractor and administrator. The contractor should make prior arrangements with the electrical inspector to provide access to conduct these inspections.

The department's inspectors will make every possible effort to accommodate the electrical contractor's schedule and be there while the equipment (and the contractor's safety system) is in place.

Electrical inspectors are exposed to various jobsite hazards daily while performing their job duties. The department takes the welfare of its employees very seriously. We provide our employees with appropriate personal protective equipment (PPE) and training for the situations an inspector is expected to encounter while doing inspections. We have the ability to utilize the contractor's legal safety system.

● Electrical Question of the Month

This Month's Question: The Department of Labor and Industries with electrical industry stakeholder input may change the duties of the electrical administrator by following the formal WAC development process in the Administrative Procedure Act (chapter 34.05 RCW). True or False?

Last Month's Question: What is the maximum rating for an inverse time circuit breaker used to provide motor branch-circuit short-circuit and ground-fault protection for a residential 240 VAC, single-phase, ¾ horsepower well pump motor, controller, and branch-circuit? **A)** 30 amps, **B)** 25 amps, **C)** 20 amps, **D)** 15 amps.

The answer is: C) The motor full load current is 6.9 amps (NEC Table 430.248) multiplied by the percentage of motor full load current for an inverse time circuit breaker (250% from NEC Table 430.52) which equals 17.25 amps. The next highest standard OCPD (NEC 430.52, Exception No. 1) is 20 amps.