



ELECTRICAL CURRENTS

Newsletter from the Office of the Chief Electrical Inspector

Ron Fuller, Chief Electrical Inspector

Vol. 10 No. 3

March 2007

● Trainee Basic Electrical Classroom Education Information

A new education requirement affecting electrical trainees becomes effective July 1, 2007. A change in the electrical law requires trainees to receive eight hours of basic electrical classroom education per year before renewing their training certificate. Trainees renewing their training certificate, after December 31, 2007, must have completed a total of sixteen hours of basic electrical classroom education during the previous two years. Trainees who attempt to renew without the required training will be placed into inactive status and cannot work until the training is completed and the training certificate is reactivated.

Between July 1, 2007 and December 31, 2007 will need to have only eight hours of required basic electrical classroom education.

The industry has a need for providers of electrical training classes. Education providers should review WAC 296-46B-970 before submitting a "Classroom Education Electrical Training" course to the department for approval. Classroom education classes must cover the RCW 19.28, WAC 296-46B, the currently adopted National Electrical Code, or electrical theory. Electrical theory must be based on currently published materials that are readily available through retail purchase. All classes are required to be at least eight hours in length. Classes may be divided into intervals of not less than two hours each, so long as the class is completed within a one month period. Based on input from the Electrical Board, the required exam must have at least 5 questions for each two hours of credit.

All approved classes in this new category are posted on the Electrical Program website. The list will be updated regularly as more classes and providers are approved. Visit the link for more information:

<http://www.lni.wa.gov/TradesLicensing/Electrical/LicenseExamEd/Education/TraineeClasses>

● Engineering Evaluations

The department is pleased to announce the approval of two engineers to perform engineering evaluations of industrial utilization equipment and industrial control panels, as defined in WAC 296-46B-901. The evaluation is used to determine that equipment conforms to applicable electrical standards.

Engineering evaluations were created to allow customers an alternative method to get their industrial equipment approved for use. After July 1st, 2007, the Electrical Program will no longer evaluate industrial equipment. For industrial equipment to be approved under an Engineering Evaluation, the equipment must meet the same electrical safety standards as in a department review. As with a department evaluation, an engineering evaluation will only approve or disapprove the equipment as it was manufactured.

If the equipment is determined to not meet the minimum safety standard, the equipment must have a field evaluation performed. Engineers will not issue correction notices to meet the standard.

If the evaluating engineer determines that the equipment meets the applicable standard(s), the engineer will place an approval label on the equipment. The electrical inspector will accept the approving engineer's label as verification that the equipment is appropriate for use.

The contact information for all approved engineers is located on the electrical program website and updated regularly as individuals are approved. **The department will refer all requests for Department Evaluations to approved engineers.** Below is the contact information for the two approved engineers.

- Parker Messana & Associates, Inc (253) 926-0884 www.pma-engr.com/
- Power Science Engineering (206) 306-6745 www.power-sci.com/

● **AFCI Are required For Fire Station Sleeping Quarters NEC 210.12(B)**

As stated in the National Electric Code: "All 120-volt, single phase, 15-and 20-ampere branch circuits supplying outlets installed in dwelling unit bedrooms shall be protected by a listed arc-fault circuit interrupter, combination type installed to provide protection of the branch circuit."

Webster's Dictionary defines "bedroom" as "a room intended for sleeping". In a fire station, the sleeping area and living area are similar to those found in a dwelling (i.e. it has space intended for living and sleeping, and permanent provisions for cooking and sanitation). NEC 210.12(B) must be followed in these types of occupancies. This requirement does not extend to rooms such as living rooms, food preparation rooms, or recreation rooms that are not primarily designed for use as a sleeping room.

● **Camera Installation Questions: Limited Energy (06) or Telecommunications (09)?**

We have been asked to clarify which specialties are allowed to do work associated with various technologies used in the installation of surveillance cameras. Some acronyms commonly used in this industry are: Internet Protocol (IP) camera, Power over Ethernet (POE), Pan, Tilt, and Zoom (PTZ), Category 5e Unshielded Twisted Pair data cable (Cat 5e UTP) and type RG6 coaxial cable (RG6 co-ax).

Which of the following can be installed by a (09) telecom contractor/uncertified worker and which must be installed by a (06) limited energy contractor/electrician (or higher)?

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|---|-----------|
| 1. POE, IP camera both fixed and PTZ over which the power for the camera and the PTZ is superimposed over the video data transmission pairs (Cat 5e UTP) feeding the camera. | 06 |
| 2. POE, IP camera with PTZ powered by a separate 2 conductor low voltage cable and video data run over the Cat 5e UTP cable. | 06 |
| 3. POE, IP camera with PTZ with local power outlet installed by an electrician at the camera location and powered from this outlet using a plug in transformer. Video data run over Cat 5e UTP. | 06 |
| 4. Analog camera fixed using RG6 co-ax and powered using a transformer plugged into a local electrical outlet installed by an electrician. | 09 |
| 5. Analog camera (fixed or PTZ) using RG6 co-ax and powered by separate 2 conductor low voltage cables. | 06 |

During the development of the telecommunications bill in the 2000 legislative session, telecom industry representatives agreed that telecom workers would only install voice, data, video, and limited audio cables at signal levels well below the level of limited energy (typically Class 2) power conductors. For this concession, telecommunications workers were not required to have individual certification. Installation of limited energy power conductors remained exclusive to the (06) limited energy specialty scope requiring 06 contractor licensing and 06 electrician certification.

The telecom bill, RCW 129.28.400(13) (b), allowed "other limited-energy interconnections associated with telecommunications systems or appliances". This allows the:

- Installation of local plug-in power for fixed video monitoring, plug-in power supply to a phone answering machine or wireless alarm panel;

Local Class 2 power supply connection to a radio frequency (RF) product identification system transmitter (at a store exit door) could be completed by a telecom worker.

● **Electrical Question of the Month**

This Month's Question: Ground-fault circuit-interrupter protection for personnel shall be provided for outlets that supply _____ installed in dwelling unit locations and supplied by 125-volt, 15- and 20-ampere branch circuits.

A) attics, **B)** boat hoists, **C)** unfinished basement bedrooms, **D)** none of the answers are correct

Last Month's Question: The replacement of a like-in-kind 120V lighting control panel containing relays, contactors, snap switches, timers, and inter-connected wiring only, requires a general permit?

A) Yes, **B)** No; Class B label required, **C)** Either A or B, **D)** None; it's like-in-kind Class A work
The answer is: A) (It is an assembly of exempted components, not a single component) [WAC 296-46B-900(8)(b)].