

# ELECTRICAL CURRENTS

A Newsletter from the Office of L&I Chief Electrical Inspector Wayne Molesworth December 2024

**Question of the Month** - Calculation of loads in accordance with the National Electrical Code (NEC) requires knowledge of the amount of power consumed by the circuits, feeders, and service. Power is expressed in volt-amperes or watts. How many volt-amperes are drawn by the following (assume 100 percent power factor).

- 1) A 4.5 kilowatt (kw), 240-volt single-phase water heater.
- 2) A 10 ampere, 120-volt dishwasher.
- 3) A 5 horsepower, 460-volt three-phase air compressor.

See correct answer on Page 2.

## Safety Tip of the Month

Winter has arrived and this is a good time for reminders about the importance of proper preparation and what to do in the event of damage to your electrical wiring. Wind, flooding, snow and ice will occur and with them, the likelihood of downed power lines and electrical outages.

Learn more: [After Floods & Other Natural Disasters](#).

## July 1, 2026 Deadline to Qualify for the 01 Journey Level Exam Without Completing an Apprenticeship.

According to RCW [19.28.195](#), if you have 3000 hours of experience worked before July 1, 2023, you may qualify for the journey level electrician certification examination without completing the work and education requirements of an apprenticeship program. Before you can qualify, you must have 8000 hours of experience, 4000 hours of which must be new commercial or industrial installations. To qualify under this provision, L&I must receive all affidavits and your application for examination before July 1, 2026.

Learn about how to report hours of experience and deadlines that apply: [www.Lni.wa.gov/ElectricalTrainee](http://www.Lni.wa.gov/ElectricalTrainee). Find out how to apply for examination: [www.Lni.wa.gov/ElectricalLicensing](http://www.Lni.wa.gov/ElectricalLicensing) and select Electrician.

Learn more: [www.Lni.wa.gov/ElectricalApprenticeship](http://www.Lni.wa.gov/ElectricalApprenticeship).

## When Will Exams be Based on the 2023 National Electrical Code?

Spring 2025 is the target. We will announce a date in future editions of this newsletter. Candidates receive the latest exam version, even when they started testing on prior versions. Very few things change between code cycles. Exams focus on foundational elements, not all the changes in the new version. New or revised definitions and any changes to load calculations always get updated.

Exams are open-book. The key to success is preparation. Candidates get the best results when they are familiar with the NEC, [WAC/RCW](#) and electrical theory reference books. Learn more about what to study and what you can bring in: [PSI Exam Bulletin](#).

Exams are not an opportunity to study. Approval for electrical exams expires year from the date of approval. If you fail to pass three times, during this one-year exam period, you have to wait 3 months between all future attempts until you pass the exam.

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## Inspector Training—No Electrical Inspections on January 8, February 12, 2025

A statewide approach to training improves consistency and is the most efficient way to educate our staff. We regret the inconvenience this causes, please plan accordingly.

### Interested in becoming an electrical construction inspector?

Look for available positions at [careers.wa.gov](https://careers.wa.gov). To apply you must first take an electrical assessment. To sign up for the assessment, contact [electricalassessment@lni.wa.gov](mailto:electricalassessment@lni.wa.gov).

#### The schedule for assessments is:

1<sup>st</sup> Tuesday of each month: [7273 Linderson Way SW, Tumwater](#)

2<sup>nd</sup> Tuesday of each month: [12806 Gateway Drive S, Tukwila](#)

3<sup>rd</sup> Tuesday of each month: [3001 W Broadway Avenue, Moses Lake](#)

You are required to pass an assessment as part of the application process for Electrical Construction Inspector positions. This is an open book assessment that covers the NEC, WAC, RCW, electrical theory and wiring diagrams. Applicants must bring all the materials they intend to use to include but not limited to codebooks and non-programmable calculators. Use of a computer or cell phone is not allowed during testing.

If you do not schedule and pass the assessment within two weeks of the position closing, you will not be considered for the position.

*\*\*Persons with a disability who need accommodation in the testing process may call 360-902-5700. TTY users should first call 711 to access the Washington Relay Service.*

### Who Enforces and Interprets State Energy Codes?

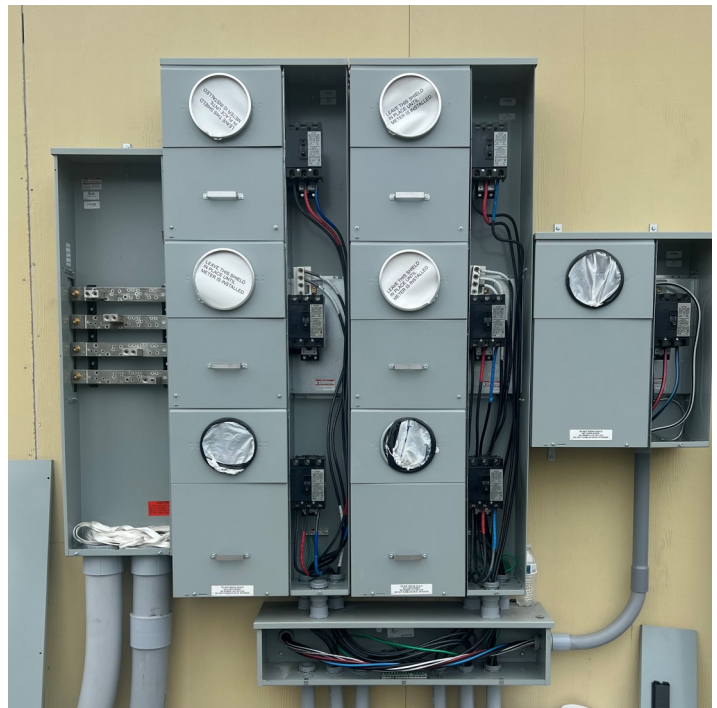
According to [19.27.050](#), only counties and cities have authority to enforce energy codes that are part of the State Building Code.

### Answer to Question of the Month:

- 1) 4,500 volt-amperes (4.5 kW X 1,000 W/kW ÷ 1.0 power factor);
  - 2) 1,200 volt-amperes (10 amperes X 120 volts);
  - 3) 6,311 volt-amperes (7.6 amperes X 480V X  $\sqrt{3}$ )
- See NEC Table 430.250 for 3-phase motor full-load current.  
 $\sqrt{\text{(square root) of 3}} = 1.73$  (3-phase power formula).

**Picture of the Month:** An electrical inspector found this installation of the side of a building. Does this installation conform to NEC 230.71(B)? If you say no, you are correct!

*If viewing this document online, click on the picture to open a larger image.*



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