



# Oregon

Kate Brown, Governor

Department of Consumer and Business Services

Building Codes Division

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[oregon.gov/bcd](http://oregon.gov/bcd)

## ***Electrical and Elevator Board***

### ***Amendment to Item VII.A.***

Thursday, Sept. 23, 2021, 9:30 a.m.

***Live virtual-conference board meeting***

***Audio streamed via the [Internet](#)***

## **I. Board business**

- A. Call to order
- B. Roll call
- C. Approval of agenda and order of business
- D. Approval of the draft meeting minutes of [July 22, 2021](#)
- E. Date of the next regularly scheduled meeting: Nov. 18, 2021

## **II. Public comment**

The division is taking extra precautions for public meetings given concerns regarding the Coronavirus/COVID-19. Board members and staff will be connected by "GoToMeeting." Because of these unusual circumstances, the division is taking steps to ensure an opportunity for written testimony and remote oral testimony for the public. Send your written testimony or request to provide oral public testimony to the boards coordinator 24 hours in advance of this meeting date. Requesting oral testimony for this meeting has a cutoff date of Sept. 22, 2021, at noon. *(Additional instructions are at the end of the agenda).*

## **III. Reports**

- A. Board vote on consent orders for [5 cases proposed for resolution](#) as outlined in the enforcement board report ***(Board action required)***
- B. Elevator program update
- C. Electrical program update

## **IV. Communications**

Connection of solar photovoltaic (PV) electrical system to a feeder; [Statewide Code Interpretation No. 21-03](#)

## **V. Appeals - None**

## **VI. Unfinished business - None**

## **VII. New business**

- A. Review and approval of committee recommendations for [new continuing education](#) course and instructor applications ***(Amendment to Course No. 13 on matrix, committee approval)***
- B. Request received from Pacific Inside Electrical JATC for [retroactive approval](#) for licensees that have taken one or more of the Grounding and Bonding, parts A, B, C & D courses

- C. Request received from e-Hazard for [retroactive approval](#) for licensees that have taken the Electrical Workplace Safety NFPA 70E course
- D. Request received from ESS Electrical Safety Specialists, LLC for [retroactive approval](#) for licensees that have taken the 10-hour Qualified Electrical Worker training course
- E. Request received from Central Electrical JATC for [retroactive approval](#) for licensees that have taken the 4-hour 2020 Oregon Rule and Law course

## VIII. Announcements - None

## IX. Adjournment

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### **Please read carefully**

Temporary instructions for submitting public testimony for board meetings:

- Please submit written testimony for consideration by noon the day before the scheduled meeting by email to [debra.j.woods@oregon.gov](mailto:debra.j.woods@oregon.gov).
- Include your name and the organization you represent (if any).
- List the board and agenda item to which your comments are related.
- Please include all related material.
- Expect an email from the boards coordinator, the chief, or the chair of the board acknowledging that your testimony has been received and will be presented to the board.
- *If you would like to be connected by the GoToMeeting for oral testimony, please send an email to [debra.j.woods@oregon.gov](mailto:debra.j.woods@oregon.gov) and the boards coordinator will send you specific instruction on the process by email. Please include your name, organization, and the agenda item to which your testimony relates. The board Chair will manage public testimony during the meeting. Testimony will be limited to 5 minutes.*
- If you do not receive confirmation of your testimony within one business day or by 8:30 a.m. on the date of the board meeting, please resubmit your testimony.

*Thank you for working with us to ensure the health and safety of all participants.*

*Note:* For information regarding re-appointments or board vacancies, please visit the Governor's [website](#).

**Electrical and Elevator Board**  
**Virtual meeting minutes of July 22, 2021**

*(Minutes amended by adding Items III.C. and IV.B.)*

**Members:** Heather Miller, journeyman electrician, Chair  
Thomas Kyle, electrical contractor, Vice-chair  
Elizabeth Bunga, building official  
Amy Beyer, public member  
Randy Carmony, journeyman elevator installer  
Jon Flegel, journeyman electrician  
Robert McNeill, elevator-manufacturing representative  
Ryan Richards, electrical contractor  
Randy Smith, electrical inspector

**Members absent:** Vacant, power and light industry  
Vacant, electrical equipment supplier  
Vacant, owner/manager of a commercial office building  
Vacant, commercial underwriter  
Vacant, industrial plant employing electricians

**Staff:** Alana Cox, administrator, Building Codes Division (BCD)  
Keith Anderson, electrical program chief, Policy and Technical Services (PTS)  
Todd Smith, interim manager, Enforcement Services  
Warren Hartung, elevator program chief, Statewide Services  
Julia Hier, senior policy advisor, PTS  
Megan Sachet, contested case representative, Enforcement Services  
Tyler Glaze, policy analyst, PTS  
Debi Barnes-Woods, boards administrator, PTS

**Guests:** Nathan Philips, technical advisor, National Electrical Contractors Association (NECA)  
Rod Belisle, training director, NECA-IBEW  
Sara Currie, self  
Angela Crouley-Koch, executive director, OSEIA

**I. Board business**

**A. Call to order**

The virtual Electrical and Elevator Board meeting of July 22, 2021, was called to order at 9:31 a.m. by Chair Heather Miller. The division continues to take extra precautions for public meetings given concerns regarding Coronavirus/COVID-19. Virtual meetings will continue to be streamed live through the division website until further notice.

The division is looking into the way meetings are currently being streamed. The division will notify all meeting participants of any type of change.

**B. Roll call**

William (BJ) Barlow, electrical equipment manufacturing rep., was having technical issues and was not able to connect until Agenda Item III.B. All other board members were connected at the start of the meeting.

This board has five vacant positions. If you are interested or know someone that would be a great fit in one of the open positions, please visit the Governor's [website](#) to complete or pass on an [interest form](#).

**C. Approval of the amended agenda and order of business**

The agenda was previously amended by adding the document to Item III.C. and the addition of Item VI.B., prior to the meeting date.

Chair Miller ruled the amended agenda and order of business approved.

**D. Approval of the board meeting draft minutes**

Chair Miller ruled the draft meeting minutes of March 25, 2021, final.

**E. Date of the next regularly scheduled meeting**

Sept. 23, 2021.

**II. Public comment - None**

**III. Reports**

**A. Board review an Amended Proposed Order in consideration of a final order in the Matter of Daniel A. Reeves (*Board action require*)**

Megan Sachet, contested case representative, said that the case before the board was for a license denial in the matter of Daniel Reeves. The applicant did not meet the minimum requirements for a general journeyman license. The amended proposed order was due to grammatical changes and an incorrect statute was cited in the order. The overall outcome was not changed. The division is requesting a motion from the board that incorporates board's decision.

**Motion by Vice-chair Thomas Kyle** to approve the amended proposed order and issue a final order for Daniel A. Reeves.

**Roll call vote:**

**Yea:** Amy Beyer; Elizabeth Bunga; Randy Carmony; Jon Flegel; Robert McNeill; Ryan Richards; Randy Smith; Vice-chair Thomas Kyle; and Chair Heather Miller.  
**Nay:** None.

**Motion carried unanimously.**

**B. Board vote on consent orders for five cases proposed for resolution as outlined in the enforcement board report (*Board action required*)**

Megan Sachet reviewed the five cases for the board that entered into consent agreements since the May 27, 2021, board meeting. Board members reviewed the summary of consent orders before a decision was made.

**Motion by Ryan Richards** to approve division recommendation.

**Roll call vote taken:**

**Yea:** BJ Barlow; Amy Beyer; Elizabeth Bunga; Randy Carmony; Jon Flegel; Robert McNeill; Ryan Richards; Randy Smith; Vice-chair Thomas Kyle; and Chair Heather Miller.

**Nay:** None.

**Motion carried unanimously.**

**C. Legislative update (*The document was added to this item as a late submission*)**

Julia Hier, senior policy advisor, delivered an update specific to the Electrical and Elevator Board, which included eight legislative bills and 10 additional bills that may be of interest. The eighteen bills are included in the [board packet](#):

- SB 866 Program delegation
- HB 2415 Electronic processes
- SB762 Wildfire
- HB 2280 Electrical service capacity for parking spaces
- HB 2062 Oregon Department of Energy Bill
- HB 2560 Remote meetings/testimony)
- HB 2992 (Compensation to board members)
- SB 338 (Limited renewable energy technicians license)

**D. Elevator program update**

Warren Hartung, elevator program chief, Statewide Services, was having technical issues and could not log into the GoToMeeting. Elevator stats were emailed out to members the day before the meeting.

**E. Electrical program update**

Keith Anderson, electrical program chief, said that the licensing program L2K, has been changed to a new system; MyLicenseOffice. The General Journeyman Electrical licenses and the Limited Residential licenses are the first test run for the renewal cycle. Chief Anderson announced Roseanne Nelson, licensing manager, Statewide Services, is retiring at the end of the month. Roseanne has been with the division for over 30 years and has been in several different roles at the division. She will be greatly missed by all.

**IV. Communications - None**

**V. Appeals - None**

## **VI. Unfinished business**

### **A. Board review request from HSI to be recognized as a national organization and a nationally accredited continuing education provider to include the scope of the courses taught and the type of credit awarded for all courses submitted for the current code cycle**

At the board's May 27, 2021, meeting, the board reviewed HSI's application to be recognized as a national organization for the purposes of OAR 918-035-0040(2). Several board members requested clarification as to the scope of classes that HSI would be teaching, and whether or not the board could restrict the types of courses that would be automatically approved.

HSI has confirmed they only intend to teach First Aid/CPR/AED code-related courses if recognized as a national organization. OAR 918-035-0040(2) also allows the appropriate board to restrict the courses approved, and credit awarded, for any recognized national organization.

**Motion by Ryan Richards** to approve HSI's request for recognition as a national organization for the purposes of OAR 918-035-0040(2) for CPR/AED/First Aid continuing education courses.

#### **Roll call vote taken:**

**Yea:** BJ Barlow; Amy Beyer; Elizabeth Bunga; Randy Carmony; Jon Flegel; Robert McNeill; Ryan Richards; Randy Smith; Vice-chair Thomas Kyle, and Chair Heather Miller.

**Nay:** None.

**Motion carried unanimously.**

### **B. Board review and approve permanent rulemaking for limited renewable energy technician license *(This item was added to the board packet as a late submission)***

Tyler Glaze, policy analyst, Policy and Technical Services, said these temporary rules were approved at the May 27, 2021, board meeting and they will expire on November 22, 2021. On July 16, 2021, a Rules Advisory Committee (RAC) was convened to provide advice regarding permanent rulemaking for SB 338. This bill allows a Limited Renewable Energy Technician to install AC electrical wiring and connections to the termination of the final factory-provided interconnecting cable on the exterior of a structure that extends a maximum distance of 10 feet from the renewable energy system, *or a longer distance that the board specifies by rule*, and extending not more than three feet within an accessible space of a structure, but not including connection to the structure's wiring system.

The RAC members suggested adopting the temporary rules as permanent. Some members preferred that the 10-foot distance be expanded but, after some discussion, no one disagreed with the recommendation to maintain the maximum 10-foot distance in the permanent rulemaking.

**Motion by Chair Miller** to approve the proposed rules for OAR 918-282-0033 and 918-282-0400, and forward to the Administrator for rulemaking and subsequent adoption.

**Roll call vote taken:**

**Yea:** BJ Barlow; Amy Beyer; Elizabeth Bunga; Randy Carmony; Jon Flegel; Robert McNeill; Ryan Richards; Randy Smith; Vice-chair Thomas Kyle, and Chair Heather Miller.

**Nay:** None.

**Motion carried unanimously.**

**VII. New business**

**Review and approve committee recommendations for new continuing education course and instructor applications**

**Motion by Ryan Richards** to approve committee recommendations for approval or denial of courses or instructors.

**Roll call vote taken:**

**Yea:** BJ Barlow; Amy Beyer; Elizabeth Bunga; Randy Carmony; Jon Flegel; Robert McNeill; Ryan Richards; Randy Smith; Vice-chair Thomas Kyle; and Chair Heather Miller.

**Nay:** None.

**Motion carried unanimously.**

**VIII. Announcements - None**

**IX. Adjournment**

The meeting was adjourned at 10:19 a.m. by Chair Heather Miller.

Respectfully submitted by Debi Woods, BCD boards administrator, coordinator.

**State of Oregon**

**Board memo**

**Building Codes Division**

**September 23, 2021**

**To:** Electrical and Elevator Board

**From:** Megan Sachet, contested case representative, Enforcement Services

**Subject:** Consent orders for cases resolved on behalf of the Electrical and Elevator Board

**Action requested:**

To consider the adoption of recent consent orders and issue final orders.

**Background:**

The board, through division staff, implemented a civil penalty matrix for electrical violations. The penalty matrix establishes civil penalties based upon the type and number of violations committed within five years of the date of the present violation. The penalty matrix further provides that a stay of some portion of a penalty is within the sole discretion of the board or the division acting on the board's behalf for purposes of settling cases prior to hearing.

The Enforcement Section, acting on behalf of the board, has entered into a consent agreement in five (5) cases since the board's June 22, 2021, meeting. A summary of the consent orders is included for your review.

Each consent order contains the following conditions, any additions or exceptions to these conditions is noted with the individual case information:

- Respondent agrees to fully cooperate with the division's enforcement efforts.
- Respondent understands that further enforcement action may be taken for any other violations.
- Respondent understands that failure to comply with the consent orders may be used as a basis for the denial, suspension, revocation, or conditioning of a license, certificate, or registration.

In these cases the penalty amounts assessed, amounts suspended, and amounts due and payable are consistent with the board's penalty matrix.



## Electrical and Elevator Board Enforcement Report for September 23, 2021

Summary Report						
Case #	Name	Violation	Location	Date of Violation	Civil Penalty	Other Comments
C2020-0098 Russ/Sarah	Torres-Mendoza, Francisco (Frank) dba "Professional Electrician Frank"	Installation of new electrical outlet, electrical receptacle and an electrical distribution panel. <ul style="list-style-type: none"> <li>•No journeymen electrician license</li> <li>•No electrical contractor license</li> <li>•No electrical permit</li> </ul>	Willamina and Keizer	May 2020 through August 2020	Assessed: \$6,000 Imposed: \$2,250 Suspended: \$3,750 This is a first time violator.	Respondent agrees to fully cooperate with the Division's enforcement efforts in other cases that rely on the facts underlying this case.
C2020-0151 Russ/Megan	Crooke, Wesley Scott	Installation of Romex wiring, 2 electrical circuits; a bathroom fan; a main breaker panel and several can lights. <ul style="list-style-type: none"> <li>•No supervising electrician license</li> <li>•No electrical contractor license</li> <li>•No electrical permit</li> </ul>	Sandy	May 2020 to June 2020	Assessed: \$6,000 Imposed: \$2,000 Suspended: \$4,000 This is a first time violator.	Respondent's journeyman electrician license will be suspended for 30 days.
C2020-0084 Russ/Megan	Blattner, Jacob A. aka Jake A. Blattner	Installation of two new 240 volt electrical circuits; Romex wiring from an electrical distribution panel; new electrical circuit for a refrigerator outlet and all associated electrical wiring. <ul style="list-style-type: none"> <li>•No journeyman electrician license</li> </ul>	Salem	July 2020	Assessed: \$2,000 Imposed: \$500 Suspended: \$1,500 This is a first time violator.	Respondent agrees to fully cooperate with the Division's enforcement efforts in other cases that rely on the facts underlying this case.
C2020-0010 Russ/Megan	Mendez, Jesus David abn Cascadia Remodeling	Installation of ceiling light fixtures, electrical wire to dishwasher and new range hood. <ul style="list-style-type: none"> <li>•No journeymen electrician license</li> <li>•No electrical contractor license</li> <li>•No electrical permit</li> </ul>	Salem	December 2018 through July 2019	Assessed: \$6,000* Imposed: \$2,000 Suspended: \$4,000 This is a first time violator.	Respondent agrees to fully cooperate with the Division's enforcement efforts in other cases that rely on the facts underlying this case.
C2020-0148 Russ/Megan	Clayton, Jerry Gaylen abn Crimebusters Security	Installation of 40' of Romex electrical wiring; several new outlets and several new receptacles. <ul style="list-style-type: none"> <li>•No journeymen electrician license</li> <li>•No electrical contractor license</li> <li>•No electrical permit</li> </ul>	Beaverton	August 2020	Assessed: \$6,000 Imposed: \$750 Suspended: \$5,250 This is a first time violator.	Respondent agrees to fully cooperate with the Division's enforcement efforts in other cases that rely on the facts underlying this case.

\*Total civil penalty assessed for more than one program

## Solar connections to feeders

*In accordance with OAR 918-008-0110, the information contained in this statewide code interpretation is legally binding on any party involved in activities regulated by applicable Oregon law, applicable Oregon regulations or the state building code. If the information contained in this statewide code interpretation is cited as a basis for a civil infraction, a representative of the jurisdiction must cite the interpretation number found in this document.*

**Code/edition/section:** 2021 Oregon Electrical Specialty Code (OESC) Sections 690.4 and 705.12

**Date:** Aug. 5, 2021

**Subject:** Connection of solar photovoltaic (PV) electrical system to a feeder

### Question:

Are solar system inverter output conductors allowed to be tapped to feeder conductors on the load side of the service disconnecting means?

### Answer:

Article 690.4 permits the use of a PV system to supply a building or other structure in addition to other electrical power sources such as the utility. The rules for connecting these systems on the load side of the service disconnecting means are found in Article 705.12.

### Code language:

#### **705.12 Load-Side Source Connections.**

The output of an interconnected electric power source shall be permitted to be connected to the load side of the service disconnecting means of the other source(s) at any distribution equipment on the premises. Where distribution equipment or feeders are fed simultaneously by a primary source of electricity and one or more other power source and are capable of supplying multiple branch circuits or feeders, or both, the interconnecting equipment shall comply with 705.12(A) through (E). Where a power control system (PCS) is installed in accordance with 705.13, the setting of the PCS controller shall be considered the power-source output circuit current in 705.12(A) through (E).

#### **705.12(B)(1) Feeders.**

Where the power source output connection is made to a feeder, the feeder shall have an ampacity greater than or equal to 125 percent of the power-source output circuit current. Where the power-source output connection is made to a feeder at a location other than the opposite end of the feeder from the primary source overcurrent device, that portion of the feeder on the load side of the power source output connection shall be protected by **one** of the following:

- a. The feeder ampacity shall be not less than the sum of the primary source overcurrent device and 125 percent of the power-source output circuit current.
- b. An overcurrent device at the load side of the power source connection point shall be rated not greater than the ampacity of the feeder.

**Analysis:**

There is confusion among installers and inspectors on the application of the 2021 OESC to the connection of PV inverter output conductors to feeders on the load side of the service disconnecting means. This interpretation will help to clarify one option for connecting interconnected power source circuits to feeders for solar installations made in Oregon.

The PV inverter output connection may be made as a tap to a feeder in accordance with 240.21(B) as long as the feeder supplies a subpanel and the load on the feeder is limited to its ampacity by the installation of a main breaker in the subpanel as permitted in 705.12(B)(1)(b). See 705.12(B)(2) for requirements applicable to sizing the tap conductors. Section 240.4(B) may be used when sizing the overcurrent device installed in the subpanel. This does not preclude the use of 705.12(B)(1)(a).

This type of connection is quite common and helps to facilitate compliance with renewable energy mandates in a safe and affordable manner while providing a reasonable measure of safety mirroring similar requirements throughout the electrical code.

**Contact:** Visit the division website to [contact a building code specialist](#).

**State of Oregon**

**Board memo**

**Building Codes Division**

**September 23, 2021**

**To:** The Electrical and Elevator Board

**From:** Tyler Glaze, policy analyst, Policy and Technical Services

**Subject:** Continuing Education Applications

**Action requested:**

Electrical and Elevator Board consideration of the Continuing Education Committee's recommendations regarding continuing education courses and instructors.

**Background:**

The Electrical and Elevator Board establishes continuing education requirements for all electrical licensees in order to ensure licensees possess up-to-date knowledge of the code and administrative requirements. They set standards for approval of courses and instructors in order to have a sufficient number and variety of continuing education courses available to licensees. The board's continuing education committee has been meeting to evaluate courses and instructors on the board's behalf. The committee reviewed the applications electronically on August 27, 2021. The committee reviewed 32 applications from 16 organizations:

- 19 courses were recommended for approval.
- 4 courses were recommended for denial.
- 9 instructors were recommended for approval.

See attached summary for more information.

In addition to the Oregon Rule and Law criteria, the committee is using the following when reviewing applications:

- NFPA 70E courses are eligible for a maximum of eight hours code-related credits.
- OSHA 10 courses are eligible for a maximum of four hours code-related credits.
- OSHA 30 courses are eligible for a maximum of sixteen hours code-related credits.
- First Aid/CPR courses are eligible for a maximum of four hours code-related credits (two hours for each course).
- For correspondence courses – Provider must submit complete course.
- For online courses – Provider must submit a log-on or screen shots of course content.

**Options:**

- Approve the committee's recommendations for approval or denial of courses or instructors.
- Amend and approve the committee's recommendation for approval or denial of courses or instructors.
- Disapprove the committee's recommendation for approval or denial of courses or instructors.

**Electrical and Elevator Board  
Committee on Continuing Education Course and Instructor Review  
September 23, 2021**

**Courses**

	<b>Applicant</b>	<b>Course Name</b>	<b>Committee Recommendation</b>	<b>Board Action</b>
1	Adaptability for Life	Rule and Law for Electricians 4 hours ORL	Approve for 2021 Code Cycle	
2	Applied Electrical Training	Rule and Law for Electricians 4 HR 4 hours ORL	Approve for 2021 Code Cycle	
3	Eaton	104 – Arc Flash Safety 4 hours CR	Approve for 2021 Code Cycle	
4	Eaton	108 – Electrical and Arc Flash Safety 8 hours CR	Approve for 2021 Code Cycle	
5	Electrical Education & Consulting	OESC, Oregon Rule and Law 4 hours ORL	Approve for 2021 Code Cycle	
6	ElectricalLicenseRenewal.com	2020 Grounding and Bonding 4 hours CR	Approve for 2021 Code Cycle	
7	ElectricalLicenseRenewal.com	Theory and Calculations 4 hours CR	Approve for 2021 Code Cycle	
8	Ewing-Foley	Power Quality 4 hours CR	Deny	
9	International Association of Electrical Inspectors (IAEI)	Analysis of Changes – 2020 NEC (4 part series) 6 hours CC:MC Only	Approve for 2021 Code Cycle	
10	International Association of Electrical Inspectors (IAEI)	Common Electrical Code Calculations (2-part series) 3 hours CR	Deny	
11	International Association of Electrical Inspectors (IAEI)	Soares Grounding and Bonding – 2020 NEC 4 hours CR	Deny	
12	IEC of Oregon	2020 Oregon Rule and Law with OESC 4 hours ORL	Approve for 2021 Code Cycle	
13	Imlah Electrical Consulting	Electrical Energy Efficiency Requirements 4 hours CR	Approve for 2 hours CR for 2021 Code Cycle	
14	LS Training CO	2020 Changes with Oregon Law LRT, SIG 4 hours (2 CC and 2 CR)	Approve for 2021 Code Cycle	

15	LS Training CO	2020 NEC Changes – Oregon 8 hours CC:MC Only	Approve for 2021 Code Cycle	
16	LS Training CO	Online Commercial Wiring – Oregon 8 hours CR	Approve for 2021 Code Cycle	
17	LS Training CO	Electrical Code Calculations 4 hours CR	Approve for 2021 Code Cycle	
18	LS Training CO	Online Electrical Words and Terms – Oregon 4 hours CR	Approve for 2021 Code Cycle	
19	LS Training CO	Online Residential Wiring – Oregon 8 hours CR	Approve for 2021 Code Cycle	
20	Electrical Safety Specialists	8 hours NFPA 70E 8 hours CR	Approve for 2021 Code Cycle	
21	MyelectricalCEU.com	Electrical Theory and Calculations 4 hours CR	Deny	
22	Rob Cochran	Grounding and Bonding 8 hours CR	Approve for 2021 Code Cycle	
23	Rob Cochran	NEC Calculations 8 hours CR	Approve for 2021 Code Cycle	

### **Instructors**

	<b>Applicant</b>	<b>Committee Recommendation</b>	<b>Board Action</b>
1	Todd Warda @HomePrep	Approve for 2021 Code Cycle	
2	Kevin Scott Barnett Eaton	Approve for 2021 Code Cycle	
3	Douglas Halamay Eaton	Approve for 2021 Code Cycle	
4	Matthew Moore Eaton	Approve for 2021 Code Cycle	
5	Dave Hill Electrical Education & Consulting	Approve for 2021 Code Cycle	
6	Keith Lofland International Association of Electrical Inspectors (IAEI)	Approve for 2021 Code Cycle	
7	Dave Hill	Approve for 2021 Code Cycle	

	IEC of Oregon		
8	Ethan H. Rinier NECA-IBEW	Approve for 2021 Code Cycle	
9	Justine Sanchez OSEIA	Approve for 2021 Code Cycle	
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# PACIFIC INSIDE ELECTRICAL JATC



3427 Ash Street, North Bend, Oregon 97459 • Telephone: (541) 756-6997 / Fax: (541) 756-5612

<b>Agenda Item VII.B.</b>
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August 20, 2021

Becky Rasca  
Manager's Assistance and Customer Service Coordinator  
Oregon Building Codes Division, State of Oregon

MS Rasca,

We are requesting retroactive approval, as instructed by Tyler Glaze, for individuals that have taken one or more of the Grounding and Bonding, parts A, B, C & D courses as follows:

Date: July 10, 2021 Grounding & Bonding, Part A (4 hours Code Related Credit)

Eric Sherman	6014S
Shannon Coates	22082J
Ben Gauvain	24666J
Shane Jordan	29384J
Brad Marca	5249S
Brad Marca	11077J
Bill McCaffree	3674S
Bill Mecklenburg	24522J
Dwight Reed	21953J
Howard Ridge	20725J
Jesse Smith	27674J

Date: July 10, 2021 Grounding & Bonding, Part B (4 hours Code Related Credit)

Eric Sherman	6014S
Joe Buchanan	12268J
Shannon Coates	22082J
Ben Gauvain	24666J
Shane Jordan	29384J
Brad Marca	5249S
Brad Marca	11077J
Bill McCaffree	3674S
Bill Mecklenburg	24522J
Dwight Reed	21953J
Howard Ridge	20725J

Date: July 24, 2021 Grounding & Bonding, Part C (4 hours Code Related Credit)

Eric Sherman	6014S
Shannon Coates	22082J
Brian Coplin	27378J
Ryan Hansen	22704J
Richard Jensen	21221J
Gaetano LaCorte	12636J
Brad Marca	5249S
Brad Marca	11077J
Andy McCaffree	26699J
Bill McCaffree	3674S

Date: July 24, 2021 Grounding & Bonding, Part D (4 hours Code Related Credit)

Eric Sherman	6014S
Shannon Coates	22082J
Brian Coplin	27378J
Ryan Hansen	22704J
Richard Jensen	21221J
Gaetano LaCorte	12636J
Brad Marca	5249S
Brad Marca	11077J
Andy McCaffree	26699J

Thank you,

A handwritten signature in blue ink, appearing to read 'Niq Brening', with a stylized flourish at the end.

Niq Brening  
Training Director  
Pacific Inside Electrical JATC

Cc: Tyler Glaze

August 24, 2021

Oregon Electrical Board  
Building Codes Division  
Department of Consumer & Business Services  
P.O. Box 14470  
Salem, OR 97309-0404

Dear Oregon Electrical Board:

We are an approved provider of electrical safety training for Oregon licensed electricians. Our currently approved courses are: Electrical Workplace Safety NFPA 70E (8201580) and Low Voltage Refresher (8201610). (We are awaiting renewal of High Voltage Qualified and High Voltage Refresher.)

We inadvertently allowed our courses to expire on 4-1-21 and submitted applications for renewal shortly thereafter. While the courses were being considered for renewal, we had a student who attended the NFPA 70E class. The instructor, also an Oregon licensee, would also like to receive credit. We are asking that the board please, if possible, allow these licensees to receive credit retroactively for the course taken/taught during that time.

A course roster is attached.

The course and student information is as follows:

Course: Electrical Workplace Safety NFPA 70E (8201580)  
Date: May 1, 2021  
Location: Hampton Lumber, Willamina, Oregon  
Student: James A. Cooley, OR 4582PJ  
Instructor: Christopher D. Fink, OR 5808S

If you have questions or would like any additional information, please contact me at the office listed below. Thank you very much for your consideration.

Sincerely,



Rosemarie L. Boyd  
CEU Coordinator  
e-Hazard

# CEU

SIGN-IN

Date 1 /May/2021

Instructor Christopher Fink

Company Hampton Lumber

NFPA 70e Low Voltage- 10 contact

Class hours

City/State Willamina, Oregon

LEGIBLY PRINT NAME – Document used for Certificates

Printed Name	Signature	Email Address	License Type/ Number (e.g., Journeyman ABC 12345)	Licensing State/ Organization (e.g., North Carolina Electrical Board)
1. James A. Cooley		Jim Cooley <JimCooley@HamptonLumber.com>	4582PJ	Oregon
2. Cody Strouse		Cody Strouse <CodyStrouse@HamptonLumber.com>	Apprentice	
3. Kevin Lowe		Kevin Lowe <KevinLowe@HamptonLumber.com>	Apprentice	
4. Nathaniel Boardman		Nathaniel Boardman <Boardman@HamptonLumber.com>	Apprentice	
5. Will Latter		William Latter <WilliamLatter@HamptonLumber.com>	Apprentice	
6. Carlos Gijon		Carlos Gijon <CarlosGijon@HamptonLumber.com>	Apprentice	
7. Chris Miller		Chris Miller <Millerchr@hamptonlumber.com>	Apprentice	
8. Tony Crabtree		Tony Crabtree <TonyCrabtree@HamptonLumber.com>	Apprentice	
9.				
10.				
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14.				

August 24, 2021

Oregon Electrical Board  
Building Codes Division  
Department of Consumer & Business Services  
P.O. Box 14470  
Salem, OR 97309-0404

Dear Oregon Electrical Board:

We are an approved provider of electrical safety training for Oregon licensed electricians. Our currently approved courses are: Electrical Workplace Safety NFPA 70E (8201580) and Low Voltage Refresher (8201610). (We are awaiting renewal of High Voltage Qualified and High Voltage Refresher.)

We inadvertently allowed our courses to expire on 4-1-21 and submitted applications for renewal shortly thereafter. While the courses were being considered for renewal, we had a student who attended the NFPA 70E class. The instructor, also an Oregon licensee, would also like to receive credit. We are asking that the board please, if possible, allow these licensees to receive credit retroactively for the course taken/taught during that time.

A course roster is attached.

The course and student information is as follows:

Course: Electrical Workplace Safety NFPA 70E (8201580)  
Date: May 1, 2021  
Location: Hampton Lumber, Willamina, Oregon  
Student: James A. Cooley, OR 4582PJ  
Instructor: Christopher D. Fink, OR 5808S

If you have questions or would like any additional information, please contact me at the office listed below. Thank you very much for your consideration.

Sincerely,



Rosemarie L. Boyd  
CEU Coordinator  
e-Hazard

# CEU

SIGN-IN

Date 1 /May/2021

Instructor Christopher Fink

Company Hampton Lumber

NFPA 70e Low Voltage- 10 contact

Class hours

City/State Willamina, Oregon

LEGIBLY PRINT NAME – Document used for Certificates

Printed Name	Signature	Email Address	License Type/ Number (e.g., Journeyman ABC 12345)	Licensing State/ Organization (e.g., North Carolina Electrical Board)
1. James A. Cooley		Jim Cooley <JimCooley@HamptonLumber.com>	4582PJ	Oregon
2. Cody Strouse		Cody Strouse <CodyStrouse@HamptonLumber.com>	Apprentice	
3. Kevin Lowe		Kevin Lowe <KevinLowe@HamptonLumber.com>	Apprentice	
4. Nathaniel Boardman		Nathaniel Boardman <Boardman@HamptonLumber.com>	Apprentice	
5. Will Latter		William Latter <WilliamLatter@HamptonLumber.com>	Apprentice	
6. Carlos Gijon		Carlos Gijon <CarlosGijon@HamptonLumber.com>	Apprentice	
7. Chris Miller		Chris Miller <Millerchr@hamptonlumber.com>	Apprentice	
8. Tony Crabtree		Tony Crabtree <TonyCrabtree@HamptonLumber.com>	Apprentice	
9.				
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14.				



June 30, 2021

**Agenda  
Item  
VII.D.**

To: Oregon Building Codes Division

RE: Retroactive CEU Approval

To whom it may concern,

We are requesting retroactive CEU approval for Boyd Percy, license# 813PS. He attended the 10hour Qualified Electrical Worker training on March 11, 2021.

Our provider license# is BCD CE-191

Thank you,

Brandi Bowles  
Office Manager  
Electrical Safety Specialists, LLC  
[bbowles@arcflashpro.com](mailto:bbowles@arcflashpro.com)  
816-925-0443



**CENTRAL TRAINING TRUST**  
**CENTRAL ELECTRICAL J.A.T.C.**

*ELECTRICAL TRAINING THROUGH APPRENTICESHIP*

33309 Hwy 99E • Tangent, OR 97389  
(541) 917-6199 • FAX (541) 917-6190 • [www.cjatc.org](http://www.cjatc.org)

September 1, 2021

Elevator and Electrical Board  
PO Box 14470  
Salem, Oregon 97309-0404

RE: Retroactive Approval for 2020 Oregon Rule and Law – 4 Hours ORL (6001280)

Board Members:

The Central Electrical JATC respectfully requests retroactive approval for 2020 Oregon Rule and Law taught prior to our course approval on July 22, 2021.

The attached list of individuals took our 2020 Oregon Rule and Law course prior to July 22, 2021. We request each person receive the 4 hours of credit for their attendance and participation. Some people on the list took the class twice to complete not only the ORL requirements but also for credit towards the Code related requirements. Their names appear on the list twice.

The course was taught by approved instructors based on the documents provided, reviewed, and approved by the Elevator and Electrical Board on July 22, 2021. We have attached these documents with this request as well as a new application.

We appreciate your time and effort to assist us in getting these credits approved. Please don't hesitate to contact us with questions.

Sincerely,

Mike Ellison  
Training Director

Nicki Halin  
Apprentice Coordinator

Jo Garcia  
Operations Director

Cc: file

Encl: 2020 Oregon Rule & Law Application  
2020 Oregon Rule and Law Approved Packet  
Attendee List





**2020 Oregon Rule Law (6001280)  
Retroactive Approval Request List**

Name Last	Name First	License #
Abrahamson	Mark	20077J
Adams	Mark	18324J
Adams	Robert	27568J
Aldama	Jody	14398J
Allen	Brian	16541J
Allenby	William	18314J
Allenby	William	18314J
Allman	Scott	5359S
Apperson	Todd	24304J
Ballard	John	11463J
Bate	Christopher	24904J
Beede	Jeremy	24793J
Bishop	Gregory	13446J
Braun	Jeremy	24030J
Burbee	John	12439J
Butler	Fletcher	18252J
Cillis	David	5242PJ
Coleman	Janet	13766J
Collins	Gary	4286PJ
Cook	Jason	25396J
Creal	Greg	13478J
Creal	Greg	13478J
Davis	Mark	20085J
DeHaan	Clayton	24762J
Deryk	Jon	2313S
Dietrich	Wendell	3835S
Dolan	Jeff	21821J
Duke	Terry	21623J
Duke	Terry	21623J
Dunlap	Jeff	19027J
Edgerly	Chance	27492J
Elias	James	28073J
Eversull	Manuel	28782J
Faherty	Travis	27407J
Fairclough	Ryan	30278J
Findley	Shawn	20273J
Findley	Shawn	5638S

Name Last	Name First	License #
Findley	Shawn	20273J
Findley	Shawn	5638S
Garza	Santos	21019J
Golf	Ralph	20059J
Goodrich	Donald	7501J
Grever	Tim	5470PJ
Grossnicklaus	Christian	30280J
Gustafson	Joseph	13746J
Guthrie	Evan	26598J
Haase	Aaron	21780J
Halin	Jennifer	23552J
Halin	Jennifer	23552J
Harnden	Dylan	29057J
Hatcher	Victoria	5311PJ
Haynes	Charles	980PS
Hensley	Sean	4720PJ
Hobbs	Don	25661J
Holmes	Roy	1310PS
Howard	Stephen	3788S
Huff	Josh	26053J
Huffaker	Allan	3868PJ
Humpherys	Christopher	26928J
Hunt	Travis	5882S
Hunt Jr	Travis	28075J
Justis	Tim	13660J
King	Ryan	27496J
Krause	Kirk	13831J
Kuiper	Travis	26644J
Landlis	Audie	19196J
Landson	Matt	19127J
Lee	Trevor	23623J
Lindsey	Andrew	19134J
Lindsey	Anthony	4173S
Martin	Greg	10680J
Marzicola	John	3606S
McDonald	Trevor	27306J
McKinney	Adam	28147J

Name Last	Name First	License #
Meyers	Ryan	22642J
Miller	Derek	28332J
Neet	Jacob	24323J
Nielson	David	13636J
O'Connor	Clancy	24661J
O'Flynn	John	22612J
Patterson	Tye	23383J
Pollak	Rich	5200PJ
Power	Jeffery	19673J
Privratsky	Trase	25511J
Privratsky	Chad	4980S
Quinlan	Timothy	28984J
Ramsdal	Anthony	28079J
Richert	Bruce	18882J
Rivera	Ricardo	9717J
Rodgers	Tyler	27488J
Rodriguez	Miguel	5284PJ
Rowe	Ben	20055J
Rufener	James(Mike)	10392J
Rutherford	Justin	20076J
Rutherford	Justin	6410S
Shahparast	Reza	25535J
Sicheneder	Joshua	26804J
Stahlberg	Daniel	27327J
Stewart	Mark	15004J
Stricklin	Timothy	27441J
Such	Michael	19126J
Tippets	Kim	26348J
Wageman	Lawrence	18283J
Welter	Craig	16539J
Wright	Steven	24898J
Young	Ronald	5324PJ
Zuschlag	Kail	22256J





# Continuing Education Course Approval Application

Department of Consumer and Business Services

Building Codes Division

1535 Edgewater NW, Salem, Oregon

Mailing address: P.O. Box 14470, Salem, OR 97309-0404

503-373-1268 • Fax: 503-378-2322 Web: bcd.oregon.gov

Date received by BCD: \_\_\_\_\_

## INSTRUCTIONS

**Two easy steps:** 1. Print clearly. 2. Include all requested information.

**An incomplete application will delay evaluation of your course(s).**

Your contact information provided below will be published on the Building Codes Division Web site.

Company name: Central Electrical JATC Contact person: Nicki Halin

Address (street or P.O. Box): 33309 Hwy 99e

City: Tangent State: OR ZIP: 97389

Phone: 541-917-6199 Fax: 541-917-6190

E-mail: nicki@cjatc.org Web address: www.cjatc.org

## COURSE INFORMATION

Course name: 2020 Oregon Rule & Law

Course approval requested for: ☐ Boiler ☒ Electrical ☐ Plumbing

Total course hours (min. 2 hrs.): 4

Has BCD approved this course previously? ☐ No ☒ Yes If yes, year of approval: 2017

Check the appropriate category:

☐ Code-change: Model Code only

☒ Oregon Rule and Law

☐ Code-change: Model Code with  
Oregon Rule and Law materials

☐ Code -related

Course is offered (check all that apply):

☒ Live

☒ To the public

☐ Online

☐ By correspondence

Please include the following:

- Brief description of the course.
- Detailed course outline, including:
  - Course content and time spent on each content area.
  - Course objectives.
  - Learning outcomes.
- Name or names of instructors and qualifications (Form 440-2505). Previously approved instructors do not need to resubmit instructor application.
- Course prerequisites, if any.
- For code-change courses, be sure to include:
  - A specific statement that the course meets the minimum code-change requirements for the license types in the matrix approved by the appropriate board.
  - Oregon Rule and Law will count towards the code-change hours requirement. Course content must include permit process and requirements. Scope of work for specific license relevant to the course, and rule and law changes including alternate method ruling and changes.
- List of all program materials.

Are there limitations on who may attend? ☒ No ☐ Yes (specify): \_\_\_\_\_

By my signature, I authorize the Oregon Building Codes Division to monitor and evaluate the continuing education course described in this application.

Signature: Nicki Halin

Date: 8/31/2021

## DEPARTMENT USE ONLY

Application complete? ..... ☐ Yes ☐ No\* Course information attached? ..... ☐ Yes ☐ No

Course outline attached? ..... ☐ Yes ☐ No Course has division-approved instructor? ..... ☐ Yes ☐ No

\* If application is not complete, return it to applicant for completion and resubmission.

☐ Approved from \_\_\_\_\_ to \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
MM/DD/YYYY MM/DD/YYYY

☐ Denied ..... Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Comments: \_\_\_\_\_



440-2506 (11/12/COM/WEB)





# Oregon

Kate Brown, Governor

Department of Consumer and Business Services  
Building Codes Division  
1535 Edgewater Street NW  
P.O. Box 14470  
Salem, OR 97309-0404  
503-378-4133  
Fax: 503-378-2322  
[oregon.gov/bcd](http://oregon.gov/bcd)

August 3, 2021

Central Electrical JATC  
Attn: Dave Baker  
33309 Hwy 99E  
Tangent, OR 97389

Re: Applications for Continuing Education

The Electrical and Elevator Board, through the Building Codes Division, received your applications for continuing education credit approval under Oregon Administrative Rules 918-035-0000 to 918-035-0080. On July 8, 2021, the board's Continuing Education sub-committee reviewed your applications. The Electrical and Elevator Board, at the board's July 22, 2021 meeting, considered and concurred with the committee's recommendation to approve your applications.

Courses approved for electrical continuing education effective July 22, 2021, through the duration of the 2021 Oregon Electrical Specialty Code cycle:

- 2020 Oregon Rule & Law - 4 hours ORL (6001280)
- 2020 Photovoltaic Grid Systems - 4 hours CR (6001320)
- 2020 OSHA-10 - 4 hours CR (6001160)

If you have any questions related to the approved courses please contact Becky Rasca, Continuing Education Specialist, at 503-378-4867. If you have any questions regarding the board's actions, feel free to contact me.

Sincerely,

Shon Cole  
Electrical Program Assistant Chief  
[Shon.L.Cole@oregon.gov](mailto:Shon.L.Cole@oregon.gov)  
503.378.5838





# Continuing Education Course Approval Application

Department of Consumer and Business Services

## Building Codes Division

1535 Edgewater NW, Salem, Oregon

Mailing address: P.O. Box 14470, Salem, OR 97309-0404

503-373-1268 • Fax: 503-378-2322 Web: bcd.oregon.gov

Date received by BCD: \_\_\_\_\_

### INSTRUCTIONS

**Two easy steps:** 1. Print clearly. 2. Include all requested information.  
**An incomplete application will delay evaluation of your course(s).**

Your contact information provided below will be published on the Building Codes Division Web site.

Company name: Central Electrical JATC

Contact person: Nicki Halin

Address (street or P.O. Box): 33309 Hwy 99e

City: Tangent

State: OR

ZIP: 97389

Phone: 541-917-6199

Fax: 541-917-6190

E-mail: nicki@cjatc.org

Web address: www.cjatc.org

### COURSE INFORMATION

Course name: 2020 Oregon Rule & Law

Course approval requested for: ☐ Boiler ☒ Electrical ☐ Plumbing

Total course hours (min. 2 hrs.): 4

Has BCD approved this course previously? ☐ No ☒ Yes If yes, year of approval: 2017

Check the appropriate category:

☐ Code-change: Model Code only

☒ Oregon Rule and Law

☐ Code-change: Model Code with  
Oregon Rule and Law materials

☐ Code -related

Course is offered (check all that apply):

☒ Live

☒ To the public

☐ Online

☐ By correspondence

Please include the following:

- Brief description of the course.
- Detailed course outline, including:
  - Course content and time spent on each content area.
  - Course objectives.
  - Learning outcomes.
- Name or names of instructors and qualifications (Form 440-2505). Previously approved instructors do not need to resubmit instructor application.
- Course prerequisites, if any.
- For code-change courses, be sure to include:
  - A specific statement that the course meets the minimum code-change requirements for the license types in the matrix approved by the appropriate board.
  - Oregon Rule and Law will count towards the code-change hours requirement. Course content must include permit process and requirements. Scope of work for specific license relevant to the course, and rule and law changes including alternate method ruling and changes.
- List of all program materials.

Are there limitations on who may attend? ☒ No ☐ Yes (specify): \_\_\_\_\_

By my signature, I authorize the Oregon Building Codes Division to monitor and evaluate the continuing education course described in this application.

Signature: Nicki Halin

Date: 5/24/2021

### DEPARTMENT USE ONLY

Application complete? ..... ☐ Yes ☐ No\*

Course information attached? ..... ☐ Yes ☐ No

Course outline attached? ..... ☐ Yes ☐ No

Course has division-approved instructor? ..... ☐ Yes ☐ No

\* If application is not complete, return it to applicant for completion and resubmission.

☐ Approved from \_\_\_\_\_ to \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
MM/DD/YYYY MM/DD/YYYY

☐ Denied ..... Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Comments: \_\_\_\_\_



440-2506 (11/12/COM/WEB)





## COURSE DETAILS for 2020 Oregon Electrical Rule and Law (ORL): 4 hours

### **1. Course outline: Give general description of course, including specific code articles referenced.**

- a. This course will give the students an in-depth look at changes and additions to Oregon Electrical Specialty Code (OESC) with amendments 918-305 with respect to 2020 NEC NFPA-70.
- b. This course will cover Oregon Revised Statutes 183, 455 & 479.
- c. This course will cover Oregon Administrative Rules: OAR 918-001 through 311.
- d. This course will be presented in a combination format of PowerPoint, presentation, lecture and textbook
- e. The course will meet or exceed State of Oregon requirement for the license types in the matrix approved by Oregon Electrical Board.

### **2. Class schedule: 4 hours Oregon Rule and Law (4 hrs. ORL)**

- a. Course introduction by instructor and staff: 1.5 hours.
  - i. Oregon Administrative Rules: OAR's 918-001 through 311
  - ii. Oregon Revised Statutes:
    1. ORS 183: Administrative Procedures Act; Legislative review of rules: Civil penalties.
    2. ORS 455: Building codes.
    3. ORS 479: Protection of Buildings from Fire: Electrical Safety Law.
      - a. ORS 479.510 through 479.995.
  - iii. Oregon Building Codes website navigation and access.
    1. License requirements.
    2. Oregon Administrative Rule & Laws (OAR's & ORS).
    3. Electrical Statewide Interpretations.
    4. Electrical interpretations.
    5. Electrical Statewide Alternative Methods (SAMs).
- b. Oregon Electrical Specialty Code OAR 918-305: 2.5 hours.

### **3. Course objectives: Explain what the student will gain from the class.**

- a. The student will have an in-depth look at changes to the Oregon Electrical Special Code (OESC) with amendments in respect to 2020 NEC NFPA-70.
- b. The course will include permit process and requirements, scope of work for specific licenses relevant to the course, rule and law changes, including alternate method rulings and interpretations.

### **4. Materials and visual aids: List texts and references.**

- a. 2020 NEC NFPA-70 required.
- b. Handouts.
  - i. OAR 918-030 through 311.
  - ii. ORS 183, 455 & 479.
- c. PowerPoint presentation.

### **5. Course Prerequisites: None**

### **6. Schedule of classes: List dates, times, and location.**

- a. The class is a 4-hour class. It will be scheduled throughout the year at Central Electrical Training Centers located in Tangent and Redmond.

### **7. Cost of course:**

- a. \$25 for 4-hour class for non-IBEW members

### **8. Evidence of completion:**

- a. Certificate of completion to be mailed to student after class completion.

### **9. Administrative Issues:**

- a. The student will sign in on a roster at the beginning of class.
- b. At the end of the course, an instructor evaluation will be given and turned in to the JATC.



## 2021 Oregon Electrical Specialty Code (OESC)

**TABLE 1-E**  
**Effective April 1, 2021**

The 2021 Oregon Electrical Specialty Code (OESC) is based on the 2020 edition of the National Fire Protection Association (NFPA) 70, National Electrical Code (NEC), approved as an American National Standard on August 25, 2019.

Amendments include the addition of code language developed by Oregon or the deletion of NFPA 70, NEC code language.

Language contained in the NFPA 70, NEC not listed in this table has not been amended by Oregon.

See **OAR 918-305-0030** for other codes or publications that may impact electrical installations.

1

## CODE BOOK MARKING EXAMPLE FOR OESC

OESC

O

**Ground-Fault Circuit Interrupter Protection for Personnel**  
601. Ground-fault circuit interrupter protection for personnel shall be provided as required in 210.8(A) through (E). The ground-fault circuit interrupter shall be installed in a readily accessible location.

**Informational Note No. 1:** See 315.6 for ground-fault circuit interrupter protection for personnel on ladders.

**Informational Note No. 2:** See 408.5(A) for GFCI requirements for appliances.

**For the purposes of this section, when determining distance from receptacles the distance shall be measured to the device with the cord of an appliance connected to the receptacle shall follow without piercing a floor, wall, ceiling, or listed outlet, or passing through a door, doorway, or window.**

**Exception:** All 120-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in 210.8(A)(1) through (10) shall have ground-fault circuit interrupter protection for personnel.

(1) Bedrooms.  
(2) Garages, and also accessory buildings that have a floor

*Example Make a mark next to a specific code section to indicate there is an Oregon amendment.*

2

## 90.4 Enforcement. ... pg. 30

- By special permission, the authority having jurisdiction may waive specific requirements in this *Code* or permit alternative methods where it is assured that equivalent objectives can be achieved by establishing and maintaining effective safety.
- Requests for special permission shall be made in writing to the authority having jurisdiction. Special permission must be granted in writing by the authority having jurisdiction and shall be obtained prior to the start of the electrical installation.

3

## 90.4 Enforcement. ...

- This *Code* may require new products, constructions, or materials that may not yet be available at the time the *Code* is adopted. In such event, the authority having jurisdiction may permit the use of the products, constructions, or materials that comply with the most recent previous edition of this *Code* adopted by the jurisdiction.
- Where the NEC requires electrical products to be "listed" or "labeled", the words "listed" or "labeled" shall have the same meaning as "certified electrical product" under ORS 479.530.
- The occupancy classification and use designations shall be established in accordance with the *Oregon Structural Specialty Code (OSSC)*, as stated on the construction documents by the registered design professional and approved by the building official.

4

## 100 Definitions

- Dormitory (replace) pg. 34
- A space in a building where group sleeping accommodations are provided in one room, or in a series of closely associated rooms, for persons not members of the same family group, under joint occupancy and single management, as in college dormitories, or fraternity houses. (Source OSSC)
- Fire Protection System (insert between Field Labeled and Fitting) pg.35-36
- Approved devices, equipment and systems or combinations of systems used to detect a fire, activate an alarm, extinguish or control a fire, control or manage smoke and products of a fire or any combination thereof. (Source OSSC)

5

## 100 Definitions

- Reconditioned** pg. 39
- Electromechanical systems, equipment, apparatus, or components that are restored to operating conditions. This process differs from the normal servicing of equipment that remains within a facility, or replacement of listed equipment on a one-to-one basis.
- Informational Note No.1:** The term *reconditioned* is frequently referred to as *rebuild*, *refurbished*, or *remanufactured*.
- Informational Note No. 2:** Used equipment that has been inspected, tested, or repaired with listed or recognized components, is not considered to be reconditioned.
- Informational Note No. 3:** See ANSI EERS 2018.

6

**110.10 Circuit Impedance; Short-Circuit Current Ratings, and Other Characteristics. ... pg. 47**

- 110.10 Circuit Impedance, Short-Circuit Current Ratings, and Other Characteristics. ©2020 NEC 70
- The overcurrent protective devices, the total impedance, the equipment short-circuit current ratings, and other characteristics of the circuit to be protected shall be selected and coordinated to permit the circuit protective devices used to clear a fault to do so without extensive damage to the electrical equipment of the circuit. This fault shall be assumed to be either between two or more of the circuit conductors or between any circuit conductor and the equipment grounding conductor(s) permitted in 250.118. Listed equipment applied in accordance with their listing shall be considered to meet the requirements of this section.
- Exception No. 1: A temporary service may be energized without demonstrating compliance with this section. This exception is applied at the discretion of the supervising electrician.
- Exception No. 2: Fault-current values provided by the serving utility may be used to satisfy the labeling requirements.

7

**110.14 (D) Terminal Connection Torque. pg 48**

- **110.14 (D) Terminal Connection Torque.** Tightening torque values for terminal connections shall be as indicated on equipment or in installation instructions provided by the manufacturer. An approved means shall be used to achieve the indicated torque value. The permit holder is not required to demonstrate compliance with this section.

8

**110.21 (A)(2) Reconditioned Equipment. ... pg 49**

- Informational Note No. 4: Used equipment that has been inspected, tested, or repaired with listed or recognized components, is not considered to be reconditioned.
- Informational Note No. 5: See ANSI EERS 2018.

• <https://pearl1.org/ansi-pearl-reconditioning-standard/>

9

**110.24 Available Fault Current. (A) Field Marking pg. 49**

- (A) Field Marking. Service equipment at other than dwelling units shall be legibly marked in the field with the available fault current. The field marking(s) shall include the date the fault-current calculation was performed and be of sufficient durability to withstand the environment involved. The calculation shall be documented and made available to those authorized to design, install, inspect, maintain, or operate the system.
- Exception No. 1: A temporary service may be energized without demonstrating compliance with this section. This exception is applied at the discretion of the supervising electrician.
- Exception No. 2: Fault-current values provided by the serving utility may be used to satisfy the labeling requirements.

10

**110.24 Available Fault Current. (B) Modifications. Pg. 50**

- (B) Modifications. When modifications to the electrical installation occur that affect the available fault current at the service, the available fault current shall be verified or recalculated as necessary to ensure the service equipment ratings are sufficient for the available fault current at the line terminals of the equipment. The required field marking(s) in 110.24(A) shall be adjusted to reflect the new level of available fault current.
- Exception: Not adopted by the State of Oregon. The field marking requirements in 110.24(A) and 110.24(B) shall not be required in industrial installations where conditions of maintenance and supervision ensure that only qualified persons service the equipment.

11

**110.26 Spaces About Electrical Equipment. (C)(3) Personnel Doors. Pg. 51**

- 110.26 Spaces About Electrical Equipment. Access and working space shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment.
- (C)(3) Personnel Doors. Where equipment rated 800 amperes or more that contains overcurrent devices, switching devices, or control devices is installed in structures other than one- and two-family dwellings and individual multifamily units and there is a personnel door(s) intended for entrance to and egress from the working space less than 7.6 m (25 ft) from the nearest edge of the working space, the door(s) shall open in the direction of egress and be equipped with listed panic hardware or listed fire exit hardware.
- Informational Note: Additional construction requirements are located in Section 1010.1.10 of the OSSC. This section governs panic hardware listing and installation requirements. The following OSSC sections are not part of this code but are provided here for the reader's convenience.

12

### 110.26 (C)(3) Informational Note

- OSSC Section 1010.10.10.1
- **Installation.** Where panic or fire exit hardware is installed, it shall comply with the following:
  - 1 Panic hardware shall be listed in accordance with UL 305.
  - 2 Fire exit hardware shall be listed in accordance with UL 10C and UL 305.
  - 3 The actuating portion of the releasing device shall extend not less than one-half of the door leaf width.
  - 4 The maximum unlatching force shall not exceed 15 pounds (67 N).
- OSSC Section 1010.1.10.2
- **Balanced doors.** If balanced doors are used and panic hardware is required, the panic hardware shall be the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

13

### 110.26 Spaces About Electrical Equipment. (D) Illumination. Pg. 51

- **(D) Illumination.** Illumination of 10 foot candles average, measured at the floor, shall be provided for all working spaces about service equipment, switchgear switchboards, switchgear, panelboards, or motor control centers installed indoors. Control by automatic means shall not be permitted to control all illumination within the working spaces. Additional lighting outlets shall not be required where the work space is illuminated by an adjacent light source or as permitted by 210.70(A)(1), Exception No. 1, for switched receptacles.

14

### 110.31 Enclosure for Electrical Installations. (A)(4) Locks pg. 53 (over 1000v)

- **110.31 Enclosure for Electrical Installations.** Electrical installations in a vault, room, or closet or in an area surrounded by a wall, screen, or fence, access to which is controlled by a lock(s) or other approved means, shall be considered to be accessible to qualified persons only. The type of enclosure used in a given case shall be designed and constructed according to the nature and degree of the hazard(s) associated with the installation.
- **(A)(4) Locks.** Doors shall be equipped with locks, and doors shall be kept locked, with access allowed only to qualified persons. Personnel doors shall open in the direction of egress and be equipped with listed panic hardware or **listed** fire exit hardware.
- **Informational Note:** See the OESC Section 110.26(C)(3) amendment.

15

### 110.33 Entrance to Enclosures and Access to Working Space.

#### (A)(3) Personnel Doors. Pg. 54

- **(A)(3) Personnel Doors.** Where there is a personnel door(s) intended for entrance to and egress from the working space less than 7.6 m (25 ft) from the nearest edge of the working space, the door(s) shall open in the direction of egress and be equipped with **listed** panic hardware or listed fire exit hardware.
- **Informational Note:** See the OESC Section 110.26(C)(3) amendment.

16

### 210.8 Ground-Fault Circuit-Interrupter Protection for Personnel. Pg. 62

Ground-fault circuit-interrupter protection for personnel shall be provided as required in 210.8(A) through (F). The ground-fault circuit-interrupter shall be installed in a readily accessible location.

For the purposes of this section, when determining the distance from receptacles the distance shall be measured as the shortest path the supply cord of an appliance connected to the receptacle would follow without piercing a floor, wall, ceiling, or fixed barrier, or the shortest path without passing through a window.

- **210.8 (A) Dwelling Units.** All 125-volt, **single-phase, through 250-volt 15- and 20-ampere** receptacles installed in the locations specified in 210.8(A)(1) through (A)(10) **and supplied by single-phase branch circuits rated 150 volts or less to ground** shall have ground-fault circuit-interrupter protection for personnel.

17

### 210.8 (A) Dwelling Units

**210.8 (A) Dwelling Units.** All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in 210.8(A)(1) through (A)(10) shall have ground-fault circuit-interrupter protection for personnel.

18

### 210.8 Ground-Fault Circuit-Interrupter Protection for Personnel. Pg. 62

- (A)(5) Unfinished portions or areas of the basement not intended as habitable rooms. Basements
  - Exception to (5): A receptacle supplying only a permanently installed fire alarm or burglar alarm system shall not be required to have ground-fault circuit-interrupter protection if the receptacle is labeled as "not GFCI protected."
  - Informational Note: See 760.41(B) and 760.121(B) for power supply requirements for fire alarm systems.
- Receptacles installed under the exception to 210.8(A)(5) shall not be considered as meeting the requirements of 210.52(G).

19

### 210.8 Ground-Fault Circuit-Interrupter Protection for Personnel. Pg. 62

- [ locate just before 210.8 (A)(11) ]
- Exception to
- (2) garages,
- (5) unfinished portions or areas of the basement not intended as habitable rooms,
- (6) kitchens,
- (7) sinks,
- (10) laundry:
- GFCI protection shall not be required for a single receptacle serving an appliance or a duplex receptacle serving two appliances if all of the following conditions are met:
  - a. The appliance is located within a dedicated space.
  - b. In normal use the appliance is not easily moved or is fastened in place.
  - c. The receptacle is labeled as "not GFCI protected."
- Receptacle(s) installed under the exception to 210.8(A)(2), (5), (6), (7), and (10) shall not be considered as meeting the requirements of 210.52(G).

20

### 210.52(G) pg. 70

- **Basements, Garages, and Accessory Buildings.** For one and two-family dwellings, and multifamily dwellings, at least one receptacle outlet shall be installed in the areas specified in 210.52(G) (1 ) through (G) (3). These receptacles shall be in addition to receptacles required for specific equipment.

21

### 210.8 (A)(11) pg.62

- (A)(11) Not adopted by the State of Oregon.  
Indoor damp-and-wet-locations.

22

### 210.8 (B) Other than Dwelling Units. Pg. 62

- (B) Other than Dwelling Units.
- All 125-volt, single-phase, through 250-volt 15- and 20-ampere receptacles supplied by single-phase branch circuits rated 150-volts or less to ground, 50 amperes or less, and all receptacles supplied by three-phase branch circuits rated 150-volts or less to ground, 100 amperes or less, installed in the locations specified in 210.8(B)(1) through (B)(12) shall have ground-fault circuit-interrupter protection for personnel.

23

### 210.8 (B) Other than Dwelling Units.

- All 125-volt, single-phase, 15- and 20-ampere receptacles installed in the locations specified in 210.8(B)(1) through (B)(12) shall have ground-fault circuit-interrupter protection for personnel.

24

### 210.8 (B) Other than Dwelling Units. Pg. 63

- (B)(6) Indoor ~~damp and~~ wet locations

25

### 210.8 (B) Other than Dwelling Units. Pg. 63

- (B)(8) Garages, ~~accessory buildings~~, service bays, and similar areas other than vehicle exhibition halls and showrooms

26

### 210.8 (B) Other than Dwelling Units. Pg. 63

- (B)(11) Laundry areas.
- Exception to (11): GFCI protection shall not be required for a single receptacle serving an appliance or a duplex receptacle serving two appliances if all of the following conditions are met:
  - a. The appliance is located within a dedicated space.
  - b. In normal use the appliance is not easily moved or is fastened in place.
  - c. The receptacle is labeled as "not GFCI protected."

27

### 210.8 (C) Crawl Space Lighting Outlets. Pg.63

- (C) Crawl Space Lighting Outlets. GFCI protection shall be provided for lighting outlets not exceeding 120 volts installed in crawl spaces at or below grade level.

28

### 210.8 (E) Equipment Requiring Servicing. Pg. 63

- (E) Equipment Requiring Servicing. GFCI protection shall be provided for the receptacles required by 210.63.
- Exception: Receptacles installed indoors in dwelling units shall not be required to be ground-fault circuit-interrupter protected, unless otherwise required.

29

### 210.8 (F) Outdoor Outlets. Pg. 63

- (F) Outdoor ~~Receptacles~~ Outlets. All outdoor ~~outlets~~ general-purpose receptacles for other than dwellings units, other than those covered in 210.8(A)(3), Exception to (3), that are supplied by single-phase branch circuits rated 150 volts to ground or less, 50 amperes or less, shall have ground-fault circuit-interrupter protection for personnel.
- Informational Note: This requirement does not apply to specific-use receptacles that are regulated by other sections in this code such as 551.71.
- ~~Exception: Ground-fault circuit-interrupter protection shall not be required on lighting outlets other than those covered in 210.8(C).~~

30



## 210.12 Arc-Fault Circuit-Interrupter Protection. Pg. 64

210.12 Arc-Fault Circuit-Interrupter Protection. Arc-fault circuit-interrupter protection shall be provided as required in 210.12(A), (B), (C), and (D). The arc-fault circuit interrupter shall be installed in a readily accessible location.

- **A) Dwelling Units.** All 120-volt, single phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, alcoves, laundry areas, or similar rooms or areas shall be protected by any of the means described in 210.12(A)(1) through (6):

31

## 210.12 Arc-Fault Circuit-Interrupter Protection. Pg. 64

- Exception No. 1: AFCI protection shall not be required for an individual branch circuit supplying a fire alarm system installed in accordance with 760.41(B) or 760.121(B). The branch circuit shall be installed in a metal raceway, metal auxiliary gutter, steel-armored cable, Type MC or Type AC, meeting the applicable requirements of 250.118, with metal boxes, conduit bodies, and enclosures.
- Exception No. 2: AFCI protection shall not be required on branch circuits supplying receptacles located in hallways, kitchens or laundry areas and GFCI protected receptacles installed in dining rooms.
- Exception No. 3: AFCI protection shall not be required for optional, dedicated outlets that supply equipment known to cause unwanted tripping of AFCI devices.
- Exception No. 4: AFCI protection shall not be required for branch circuits that serve an appliance that is not easily moved or that is fastened in place.

32

## 210.12 Arc-Fault Circuit-Interrupter Protection. Pg. 65

- **(B) Dormitory Units.** All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets and devices installed in dormitory unit bedrooms, living rooms, hallways, closets, **bathrooms**, and similar rooms shall be protected by any of the means described in 210.12(A)(1) through (6).

33

## 210.12 Arc-Fault Circuit-Interrupter Protection. Pg. 65

- **(C) Guest Rooms, Guest Suites, and Patient Sleeping Rooms in Nursing Homes and Limited-Care Facilities.**
- Not adopted by the State of Oregon. All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets and devices installed in guest rooms and guest suites of hotels and motels and patient sleeping rooms in nursing homes and limited-care facilities shall be protected by any of the means described in 210.12(A)(1) through (6).

34

## 210.12 Arc-Fault Circuit-Interrupter Protection. Pg. 65

- **(D) Branch Circuit Extensions or Modifications – Dwelling Units, and Dormitory Units, and Guest Rooms and Guest Suites.** Where branch circuit wiring for any of the areas specified in 210.12(A), or (B) or ~~(C)~~ (C is not adopted), is modified, replaced, or extended, the branch circuit shall be protected by one of with the following:
  - (1) By any of the means described in 210.12(A)(1) through (A)(6)
  - (2) A listed outlet branch-circuit type AFCI located at the first receptacle outlet of the existing branch circuit.
  - Exception No. 1: Extensions or modifications of existing circuits shall not require the installation of AFCI protection.
  - Exception No. 2: Replacement or upgrading of a service or panelboard shall not require that existing circuits be protected by AFCI devices.
  - Exception: AFCI protection shall not be required where the extension of the existing branch circuit conductors is not more than 1.8 m (6 ft) and does not include any additional outlets or devices, other than splicing devices. This measurement shall not include the conductors inside an enclosure, cabinet, or junction box.

35

## 210.52 Dwelling Unit Receptacle Outlets pg.69

- **210.52 (C)(2) Island and Peninsular Countertops and work surfaces.** Receptacle outlets shall be installed in accordance with 210.52(C)(2)(a) and (C)(2)(b).
- (a) At least one receptacle outlet shall be provided for the first ~~0.84 m<sup>2</sup> (9 ft<sup>2</sup>)~~ or fraction thereof, of the countertop or work surface. A receptacle outlet shall be provided for every additional 1.7 m<sup>2</sup> (18 ft<sup>2</sup>), or fraction thereof, of the countertop or work surface.
- (b) At least one receptacle outlet shall be located within 600 mm (2 ft) of the outer end of a peninsular countertop or permitted to be located as determined by the installer, designer, or building owner. The location of the receptacle outlets shall be in accordance with 210.52(C)(3).
- ~~A peninsular countertop shall be measured from the connected perpendicular wall.~~

36

### 210.52 (C)(2) Island and Peninsular Countertops and work surfaces.

Receptacle outlets shall be installed in accordance with 210.52(C)(2)(a) and (C)(2)(b).

- (a) At least one receptacle outlet shall be provided for the countertop or work surface.
- (b) At least one receptacle outlet shall be located within 600 mm (2 ft) of the outer end of a peninsular countertop or permitted to be located as determined by the installer, designer, or building owner. The location of the receptacle outlets shall be in accordance with 210.52(C)(3).

37

### 210.52 Dwelling Unit Receptacle Outlets pg.69

- **(D) Bathrooms.** Unless prohibited in 406.9(C), at least one receptacle outlet shall be installed in bathrooms within 900 mm (3 ft) of the outside edge of each basin.

38

### 210.52 Dwelling Unit Receptacle Outlets pg.69

- **(E)(3) Balconies, Decks, and Porches.** Balconies, decks, and porches that are within 102 mm (4 in.) horizontally of the dwelling unit shall have at least one receptacle outlet accessible from the balcony, deck, or porch. The receptacle outlet shall not be located more than 2.0 m (6½ ft) above the balcony, deck, or porch walking surface.
- Exception No. 1 to (3): Decks or porches located at grade level with an area of less than 20 sq. ft. are not required to have an additional receptacle installed.
- Exception No. 2 to (3): Decks or porches located above grade level with a depth of 1 ft. or less are not required to have an additional receptacle installed.

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### 210.52 Dwelling Unit Receptacle Outlets pg.70

- ~~(F) Foyers. Foyers that are not part of a hallway in accordance with 210.52(H) and that have an area that is greater than 5.6 m<sup>2</sup> (60 ft<sup>2</sup>) shall have a receptacle(s) located in each wall space 900 mm (3 ft) or more in width. Doorways, door-side windows that extend to the floor, and similar openings shall not be considered wall space.~~
- **(I) Alcoves.** In dwelling units, alcoves shall have at least one receptacle installed. These outlets shall be in addition to the required hallway outlets.
- As used in this subsection an Alcove is an area extending from, and returning to, the common wall of hallways, foyers, entries, and landings with a depth of not less than 2 ft. and a length of not less than 3 ft.

40

### 210.63 Equipment Requiring Servicing pg. 70

- 210.63 (A) Heating, Air Conditioning, and Refrigeration Equipment Outlet.
- The required receptacle outlet shall be located on the same level as the heating, air-conditioning, and refrigeration equipment. The receptacle outlet shall not be connected to the load side of the equipment's branch-circuit disconnecting means.
- Exception No. 1: A receptacle outlet shall not be required at one- and two-family dwellings for the service of evaporative coolers.
- Exception No. 2: An additional receptacle outlet shall not be required to be installed when replacing existing HVAC equipment if a receptacle outlet is located on the same level and within 75 feet.

41

### 210.65 Meeting Rooms. Pg. 70

#### • 210.65 Meeting Rooms.

- Entire section: Not adopted by the State of Oregon

42

### 225.36 Type of Disconnecting Means. Pg.86

- **225.36 Type of Disconnecting Means.** The disconnecting means specified in 225.31 shall be comprised of a circuit breaker, molded case switch, general use switch, snap switch, or other approved means. Where applied in accordance with 250.32(B), Exception No. 1, the disconnecting means shall be suitable for use as service equipment.
- **Exception:** In single light pole installations that have the connections to the light pole circuit made in a location accessible only to qualified persons, recognized or certified in-line fuse holders shall be allowed, subject to special permission.

43

### 230.40 Number of Service-Entrance Conductor Sets. Pg.91

- **230.40 Number of Service-Entrance Conductor Sets.** Each service drop, set of overhead service conductors, set of underground service conductors, or service lateral shall supply only one set of service entrance conductors.
- **Exception No. 3:** A one-family dwelling unit and its accessory structures shall be permitted to have one set of service-entrance conductors run to each from a single service drop, set of overhead service conductors, set of underground service conductors, or service lateral. When there are continuous metallic paths bonded to the grounding system in the buildings involved, a disconnect, a grounded conductor and an equipment grounding conductor shall be installed to meet the provisions of Article 225, 230, and 250.

44

### 230.43 Wiring Methods for 1000 Volts, Nominal, or Less. Pg. 91

**230.43 Wiring Methods for 1000 Volts, Nominal, or Less.** Service-entrance conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used and shall be limited to the following methods:

**Exception:** Items (13) and (15) are limited to traffic control devices and highway lighting poles.

(13) Type MC cable

(15) Flexible metal conduit (FMC) not over 1.8 m (6 ft) long or liquidtight flexible metal conduit (LFMC) not over 1.8 m (6 ft) long between a raceway, or between a raceway and service equipment, with a supply-side bonding jumper routed with the flexible metal conduit (FMC) or the liquidtight flexible metal conduit (LFMC) according to 250.102(A), (B), (C), and (E)

45

### 230.67 Surge Protection pg. 93

~~230.67 Surge Protection.~~

~~(A) Surge-Protective Device.~~ All services supplying dwelling units shall be provided with a surge-protective device (SPD).

~~(B) Location.~~ The SPD shall be an integral part of the service equipment or shall be located immediately adjacent thereto.

~~Exception:~~ The SPD shall not be required to be located in the service equipment as required in (B) if located at each next-level distribution equipment downstream toward the load.

~~(C) Type.~~ The SPD shall be a Type-1 or Type-2 SPD.

~~(D) Replacement.~~ Where service equipment is replaced, all of the requirements of this section shall apply.

• **Entire section:** Not adopted by the State of Oregon

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### 230.70 (A)(1) Readily Accessible Location. Pg. 93

- **230.70 (A)(1) Readily Accessible Location.**

**Exception:** In existing installations where the service panel or meter base is being replaced, the panel and service disconnecting means may remain at the existing location if the following conditions exist:

(1) The existing service conductors are of sufficient ampacity to supply the load or the existing conduit is large enough to accommodate new conductors that are of sufficient size to supply the load.

(2) All requirements of 110.26 and 240.24 are met. If the installation was made prior to July 1, 1996, the provisions of 240.24 (F) do not apply.

47

### 230.71 Maximum Number of Disconnects. Pg. 94

- **230.71 Maximum Number of Disconnects.**

• Each service shall have only one disconnecting means unless the requirements of 230.71(B) are met:

• **(A) General.** The service disconnecting means for each service permitted by 230.2, or for each set of service-entrance conductors permitted by 230.40, Exception No. 1, 3, 4, or 5, shall consist of not more than six switches or sets of circuit breakers, or a combination of not more than six switches and sets of circuit breakers, mounted in a single enclosure, in a group of separate enclosures, or in or on a switchboard or in switchgear. There shall be not more than six sets of disconnects per service grouped in any one location.

For the purpose of this section, disconnecting means installed as part of listed equipment and used solely for the following shall not be considered a service disconnecting means ...

48

**230.71 (B) Two to Six Service Disconnecting Means. Pg. 94**

~~(B) Two to Six Service Disconnecting Means. Two to six service disconnects shall be permitted for each service permitted by 230.2 or for each set of service entrance conductors permitted by 230.40, Exception No. 1, 3, 4, or 5. The two to six service disconnecting means shall be permitted to consist of a combination of any of the following:~~

- ~~(1) Separate enclosures with a main service disconnecting means in each enclosure~~
- ~~(2) Panelboards with a main service disconnecting means in each panelboard enclosure~~
- ~~(3) Switchboard (s) where there is only one service disconnect in each separate vertical section where there are barriers separating each vertical section~~
- ~~(4) Service disconnects in switchgear or motoring centers where each disconnect is located in a separate compartment~~

~~• **Entire section: Not adopted by the State of Oregon.**~~

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**230.71 (B) Two to Six Service Disconnecting Means. Pg. 94**

- (B) Single-Pole Units. Two or three single-pole switches or breakers, capable of individual operation, shall be permitted on multiwire circuits, one pole for each ungrounded conductor, as one multipole disconnect, provided they are equipped with identified handle ties or a master handle to disconnect all conductors of the service with no more than six operations of the hand.

• Informational Note: See 408.36, Exception No. 1 and Exception No. 2, for service equipment in certain panelboards, and see 430.95 for service equipment in motor control centers.

50

**230.85 Emergency Disconnects. Pg. 95**

~~230.85 Emergency Disconnects. For one- and two-family dwelling units, all service conductors shall terminate in disconnecting means having a short-circuit current rating equal to or greater than the available fault current, installed in a readily accessible outdoor location. If more than one disconnect is provided, they shall be grouped. Each disconnect shall be one of the following: ...~~

~~• **Entire section: Not adopted by the State of Oregon.**~~

51

**230.95 Ground-Fault Protection of Equipment pg. 96**

- 230.95 (C) Performance Testing. The ground-fault protection system shall be performance tested when first installed on site. This testing shall be conducted by a qualified person(s) having proper training and experience required to perform and evaluate the results of such performance testing, using a test process of primary current injection, in accordance with instructions that shall be provided with the equipment. A written record of this testing shall be made, signed by the person(s) performing this test, and shall be available to the authority having jurisdiction.

52

**240.67 Arc Energy Reduction pg. 105**

- 240.67 (C) Performance Testing. The arc energy reduction protection system shall be performance tested primary current injection testing or another approved method when first installed on site. The testing shall be conducted by a qualified person(s) having proper training and experience required to perform and evaluate the results of such performance testing, in accordance with instructions that shall be provided with the equipment.

• A written record of this testing shall be made, signed by the person(s) performing this test, and shall be available to the authority having jurisdiction.

53

**240.87 Arc Energy Reduction pg. 106**

- 240.87 (C) Performance Testing. The arc energy reduction protection system shall be performance tested primary current injection testing or another approved method when first installed on site. The testing shall be conducted by a qualified person(s) having proper training and experience required to perform and evaluate the results of such performance testing, in accordance with instructions that shall be provided with the equipment.

• A written record of this testing shall be made, signed by the person(s) performing this test, and shall be available to the authority having jurisdiction.

54

## 250.24 Grounding of Service-Supplied Alternating-Current Systems pg. 114

- 250.24 (A)(1) General.
- **Informational Note:** See definitions of Service Conductors, Overhead; Service Conductors, Underground; Service Drop; and Service Lateral in Article 100.
- **Exception:** When the electric utility has installed a ground fault protection system ahead of the customer's service equipment, no bonding or electrical connection from the grounding electrode system shall be made to the grounded service conductor on the load side of the utility ground fault sensing device. The neutral or grounded service conductor, however, shall be grounded on the line side of the first ground fault sensor in a manner otherwise required at the customer's service equipment. The grounding electrode conductor shall be run to an equipment grounding bus or terminal at the service equipment as long as the equipment grounding conductor and the grounded neutral conductor are not connected to each other at this point. The on-site ground fault test required by 230.95 shall not be performed prior to the above installation requirements. Warning signs shall be installed.

55

## 250.24 Grounding of Service-Supplied Alternating-Current Systems pg. 114

- 250.24 (B) Main Bonding Jumper.
- **Exception No. 3:** When the electric utility has installed a ground fault protection system ahead of the customer's service equipment and if the operation of the ground fault system relies on the absence of the main bonding jumper at the service equipment but includes an otherwise satisfactory main bonding jumper as a part of its sensing device, the main bonding jumper shall not be installed at the service equipment which would otherwise bond the grounded service conductor to the equipment ground. The on-site ground fault test required by 230.95 shall not be performed prior to the above installation requirements. Warning signs shall be installed.

56

## 250.52 Grounding Electrodes pg. 120

- (A) Electrodes Permitted for Grounding
- (A)(3) Concrete-Encased Electrode. A concrete-encased electrode shall consist of at least 6.0 m (20 ft) of either (1) or (2):...
- Metallic components shall be encased by at least 50 mm (2 in.) of concrete and shall be located horizontally within that portion of a concrete foundation or footing that is in direct contact with the earth or within vertical foundations or structural components or members that are in direct contact with the earth. If multiple concrete-encased electrodes are present at a building or structure, it shall be permissible to bond only one into the grounding electrode system. Where an addition to a building or structure is remote from the service and the integrity of the grounding electrode system has been verified, connection of the remote concrete encased electrode is not required.

57

## 250.52 Grounding Electrodes pg. 121

- (B) Not Permitted for Use as Grounding Electrodes. The following systems and materials shall not be used as grounding electrodes:
- (1) Metal underground gas piping systems
- (2) Aluminum
- (3) The structures and structural reinforcing steel described in 680.26(B)(1) and (B)(2)
- (4) In existing electrical installations, when a service change or upgrade occurs, an existing metal underground water pipe shall not be used unless the metal underground water pipe has been verified as suitable for continued use as a grounding electrode. An existing metal underground water pipe shall be bonded to the new grounding electrode system as required by 250.104(A).
- **Informational Note:** See Chapter 6 of the Oregon Plumbing Specialty Code.

58

## Grounding Electrode System Installation pg. 121

- (A)(2) Supplemental Electrode Required. A single rod, pipe, or plate electrode shall be supplemented by an additional electrode of a type specified in 250.52 (A) (2) through (A) (8). The supplemental electrode shall be permitted to be bonded to one of the following:
- (1) Rod, pipe, or plate electrode
- (2) Grounding electrode conductor
- (3) Grounded service-entrance conductor
- (4) Nonflexible grounded service raceway
- (5) Any grounded service enclosure
- **Exception No. 1:** If a single rod, pipe, or plate grounding electrode has a resistance to earth of 25 ohms or less, the supplemental electrode shall not be required.
- **Exception No. 2:** A supplemental electrode shall not be required for a single-phase, 200 amps or less temporary service.

59

## 250.94 Bonding for Communication Systems pg. 125

- (A) The Intersystem Bonding Termination Devices. An intersystem bonding termination (IBT) or an exposed and supported length of #6 bare copper conductor for connecting intersystem bonding conductors shall be provided external to enclosures at the service equipment or metering equipment enclosure and at the disconnecting means for any additional buildings or structures. If an IBT is used it shall comply with the following:...

60

### 250.118 Types of Equipment Grounding Conductors. Pg.120

- **250.118 Types of Equipment Grounding Conductors.** The equipment grounding conductor run with or enclosing the circuit conductors shall be one or more or a combination of the following:
  - (1 – 13)
  - (14) Surface metal raceways listed for grounding.
  - Where metallic conduit is installed on roof tops, an equipment grounding conductor shall be provided within the raceway and sized per 250.122.

61

### 300.5 Underground Installations pg. 142

- **300.5 (G) Raceway Seals.** Conduits or raceways through which moisture may contact live parts shall be sealed or plugged at either or both ends. Spare or unused raceways shall also be sealed. ~~Sealants shall be identified for use with the cable insulation, conductor insulation, bare conductor, shield, or other components.~~

62

### 300.9 Raceways in Wet Locations Abovegrade pg. 145

- **300.9 Raceways in Wet Locations Above grade.** Where raceways are installed in wet locations above grade, the interior of these raceways shall be considered to be a wet location. Insulated conductors and cables installed in raceways in wet locations above grade shall comply with 310.10(C).
- Exception: The interior of raceways up to 8 ft in length installed solely to provide physical protection shall not be considered a wet location.

63

### 311 Medium Voltage Conductors and Cable pg. 168

- **311.40 Support.** Type MV cable terminated in equipment or installed in pull boxes or vaults shall be secured and supported by metallic or nonmetallic supports suitable to withstand the weight by cable ties ~~listed and identified for securement and support~~, or other approved means, at intervals not exceeding 1.5 m (5 ft) from terminations or a maximum of 1.8 m (6 ft) between supports.

64

### 314.27 Outlet Boxes pg. 187

- **314.27 (C) Boxes at Ceiling-Suspended (Paddle) Fan Outlets. ...**
- ~~Outlet boxes mounted in the ceilings of habitable rooms of dwelling occupancies. Where spare, separately switched, ungrounded conductors are provided to a ceiling-mounted outlet box, in a location acceptable for the installation of a ceiling-suspended (paddle) fan in one-family, two-family, or multifamily dwellings, the outlet box or outlet box system shall be complied with one of the following: (1) listed for the sole support of ceiling-suspended (paddle) fans.~~
- ~~(2) An outlet box complying with the applicable requirements of 314.27 and providing access to structural framing capable of supporting of a ceiling-suspended (paddle) fan bracket or equivalent.~~

65

### 314.27 Outlet Boxes pg. 187

- **314.27 (C) Boxes at Ceiling-Suspended (Paddle) Fan Outlets.**
- Where spare, separately switched, ungrounded conductors are provided to a ceiling-mounted outlet box, in a location acceptable for the installation of a ceiling-suspended (paddle) fan in one-family, two-family, or multifamily dwellings, the outlet box or outlet box system shall be listed for the sole support of ceiling-suspended (paddle) fans.

66

**320 Armored Cable: Type AC pg. 190**

- **320.30 (A) General.** Type AC cable shall be supported and secured by staples; cable ties ~~listed and identified for securement and support~~; straps, hangers, or similar fittings; or other approved means designed and installed so as not to damage the cable.

67

**330 Metal-Clad Cable: Type MC pg. 196**

- **330.30 (A) General.** Type MC cable shall be supported and secured by staples; cable ties ~~listed and identified for securement and support~~; straps, hangers, or similar fittings; or other approved means designed and installed so as not to damage the cable.

68

**334 Nonmetallic-Sheathed Cable:**

- **334.12 (A) Types NM and NMC.** Types NM and NMC cables shall not be permitted as follows:
- (2) Exposed within a dropped or suspended ceiling cavity in other than one- and two-family and multifamily dwellings.
- **Exception to (2): Types NM and NMC cables may be installed within a dropped or suspended ceiling cavity in structures other than one- and two-family and multifamily dwellings when installed in accordance with 334.15.**

69

**334.15 Exposed Work pg. 199**

- **(B) Protection from Physical Damage.** Cable shall be protected from physical damage where necessary by rigid metal conduit, intermediate metal conduit, electrical metallic tubing, Schedule 80 PVC conduit, type RTRC marked with the suffix -XW, or other approved means. Where passing through a floor, the cable shall be enclosed in rigid metal conduit, intermediate metal conduit, electrical metallic tubing, Schedule 80 PVC conduit, type RTRC marked with the suffix -XW, or other approved means extending at least 150 mm (6 in.) above the floor.
- Type NMC cable installed in the shallow chases or grooves in masonry, concrete, or adobe, shall be protected in accordance with the requirements in 300.4(F) and covered with plaster, adobe, or similar finish.
- **Exposed nonmetallic sheathed cable shall be protected where it is installed horizontally less than 8 feet above the floor. Exposed nonmetallic sheathed cable less than 8 feet above the floor that enters the top or bottom of a panel board shall be protected from physical damage by conduit, raceway, ½-inch plywood, ½-inch drywall, or other approved means.**

70

**334.15 Exposed Work pg. 199**

- **(C) In Unfinished Basements and ~~Crawl Spaces~~.** Where cable is run at angles with joists in unfinished basements ~~and crawl spaces~~, it shall be permissible to secure cables not smaller than two 6 AWG or three 8 AWG conductors directly to the lower edge of the joists. Smaller cables shall be run either through bored holes in joists or on running boards. Nonmetallic-sheathed cable installed on the wall of an unfinished basement shall be permitted to be installed in a listed conduit or tubing or shall be protected in accordance with 300.4.

71

**334.30 Securing and Supporting. Pg. 199**

- **334.30 Securing and Supporting.** Nonmetallic-sheathed cable shall be supported and secured by staples; cable ties ~~listed and identified for securement and support~~; or straps, hangers, or similar fittings designed and installed so as not to damage the cable, at intervals not exceeding 1.4 m (4 1/2 ft) and within 300 mm (12 in.) of every cable entry into enclosures such as outlet boxes, junction boxes, cabinets, or fittings. Flat cables shall not be stapled on edge.

72

### 336 Power and Control Tray Cable: Type TC pg. 201

- **336.10 Uses Permitted.** Type TC cable shall be permitted to be used as follows:
- **(9) In one- and two-family dwelling units,** Type TC-ER-JP cable containing both power and control conductors shall be permitted for branch circuits and feeders. Type TC-ER-JP cable used as interior wiring shall be installed per the requirements of Part II of Article 334 and where installed as exterior wiring shall be installed per the requirements of Part II of Article 340, ...

73

### 337 Type P Cable pg. 202

- **337.30 Securing and Supporting.** Type P cable shall be supported and secured by cable ties, ~~listed and identified for securing and support~~, straps, hangers, or similar fittings; or other approved means designed and installed so as not to damage the cable.

74

### 348 Flexible Metal Conduit: Type FMC pg. 208

- **348.30 (A) Securely Fastened.** FMC shall be securely fastened in place by an approved means within 300 mm (12 in.) of each box, cabinet, conduit body, or other conduit termination and shall be supported and secured at intervals not to exceed 1.4 m (4 1/2 ft). ~~Where used, cable ties shall be listed and be identified for securing and support.~~

75

### 350 Liquidtight Flexible Metal Conduit: Type LFMC pg. 210

- **350.30 (A) Securely Fastened.** LFMC shall be securely fastened in place by an approved means within 300 mm (12 in.) of each box, cabinet, conduit body, or other conduit termination and shall be supported and secured at intervals not to exceed 1.4 m (4 1/2 ft). ~~Where used, cable ties shall be listed and be identified for securing and support.~~

76

### 356 Liquidtight Flexible Nonmetallic Conduit: Type LFNC pg. 218

- **356.30 Securing and Supporting. ...**
- **(1)** Where installed in lengths exceeding 1.8 m (6 ft), the conduit shall be securely fastened at intervals not exceeding 900 mm (3 ft) and within 300 mm (12 in.) on each side of every outlet box, junction box, cabinet, or fitting. ~~Where used, cable ties shall be listed as suitable for the application and for securing and supporting.~~

77

### 362 Electrical Nonmetallic Tubing: Type ENT pg. 221

- **362.30 (A) Securely Fastened.** ENT shall be securely fastened at intervals not exceeding 900 mm (3 ft). In addition, ENT shall be securely fastened in place within 900 mm (3 ft) of each outlet box, device box, junction box, cabinet, or fitting where it terminates. ~~Where used, cable ties shall be listed as suitable for the application and for securing and supporting.~~

78



**392 Cable Trays pg. 238**

- **392.30 (B) Cables and Conductors.** Cables and conductors shall be secured to and supported by the cable tray system in accordance with (1), (2), ~~and (3), and (4)~~ as applicable: ...
- ~~(4) Cable ties shall be listed and identified for the application and for securement and support.~~

79

**393 Low-Voltage Suspended Ceiling Power Distribution Systems pg. 245**

- **393.14 (A) General Requirements.** Support wiring shall be installed in a neat and workmanlike manner. Cables and conductors installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable is not damaged by normal building use. Such cables shall be supported by straps, staples, hangers, cable ties ~~listed and identified for securement and support~~, or similar fittings designed and installed so as not to damage the cable.

80

**394 Concealed Knob-and-Tube Wiring pg. 246**

- **394.12 Uses Not Permitted.** Concealed knob-and-tube wiring shall not be used in the following:
- (5) Hollow spaces of walls, ceilings, and attics where such spaces are insulated by loose, rolled, or foamed-in-place insulating material that envelops the conductors
- Exception: The provisions of 394.12 shall not be construed to prohibit the installation of loose or rolled thermal insulating materials in spaces containing existing knob-and-tube wiring, provided all the following conditions are met:
- (1) The visible wiring shall be inspected by a certified electrical inspector or a general supervising electrician employed by a licensed electrical contractor.
- (2) All defects found during the inspection shall be repaired prior to the installation of insulation.
- (3) Repairs, alterations or extensions of or to the electrical systems shall be inspected by a certified electrical inspector.

81

**394 Concealed Knob-and-Tube Wiring pg. 246**

- (4) The insulation shall have a flame spread rating not to exceed 25 and a smoke density not to exceed 450 when tested in accordance with ASTM E84-91A 2017 Edition. Foamed in place insulation shall not be used with knob-and-tube wiring.
- (5) Exposed splices or connections shall be protected from insulation by installing flame resistant, non-conducting, open top enclosures which provide three inches, but not more than four inches side clearances, and a vertical clearance of at least four inches above the final level of the insulation.
- (6) All knob-and-tube circuits shall have overcurrent protection in compliance with the 60-degree C column of Table 310.15(B)16 of NFPA 70-2017. Overcurrent protection shall be either circuit breakers or type S fuses. The type S fuse adapters shall not accept a fuse of an ampacity greater than permitted in 240.53.

82

**400 Flexible Cords and Cables pg. 259**

- **400.10 (A) Uses.** Flexible cords and flexible cables shall be used only for the following: ...
- (12) Listed assemblies of fixtures and controllers, approved by the Federal Aviation Administration.

83

**400 Flexible Cords and Cables pg. 259**

- **400.12 Uses not permitted.**
- (5) Where concealed by walls, floors, or ceilings or located above suspended or dropped ceilings
- Exception No. 1 to (5): Flexible cord and flexible cable shall be permitted if contained within an enclosure for use in other Spaces Used for Environmental Air as permitted by 300.22(C)(3).
- Exception No. 2 to (5): In other than Spaces Used for Environmental Air, cord sets and power-supply cords shall be permitted above accessible suspended or dropped ceilings if part of a listed assembly, other than a luminaire, and the cord length does not exceed 1.8 m (6 ft).

84

### 406 Receptacles, Cord Connectors, and Attachment Plugs (Caps) pg. 268

- ~~406.4 (D)(4) Arc-Fault Circuit Interrupter Protection.~~
- ~~Arc-Fault Circuit Interrupter Protection. If a receptacle outlet located in any areas specified in 210.12(A), (B), or (C) is replaced, a replacement receptacle at this outlet shall be one of the following:~~
  - ~~(1) A listed outlet branch-circuit type arc-fault circuit interrupter receptacle~~
  - ~~(2) A receptacle protected by a listed outlet branch-circuit type arc-fault circuit interrupter type receptacle~~
  - ~~(3) A receptacle protected by a listed combination type arc-fault circuit interrupter type circuit breaker~~
- Not adopted by the State of Oregon.

85

### 406 Receptacles, Cord Connectors, and Attachment Plugs (Caps) pg. 269

- **406.9 (C) Bathtub and Shower Space.** Receptacles shall not be installed within or directly above a bathtub or shower stall, a zone measured 900 mm (3 ft) horizontally and 2.5 m (8 ft) vertically from the top of the bathtub rim or shower stall threshold. The identified zone is all-encompassing and shall include the space directly over the tub or shower stall.
- ~~Exception: In bathrooms with less than the required zone the receptacle(s) shall be permitted to be installed opposite the bathtub rim or shower stall threshold on the farthest wall within the room.~~

86

### 406 Receptacles, Cord Connectors, and Attachment Plugs (Caps) pg. 270

- **406.12 Tamper-Resistant Receptacles.** All 15- and 20-ampere, 125- and 250-volt nonlocking-type receptacles in the areas specified in 406.12(1) through ~~(4) and (7)~~ shall be listed tamper-resistant receptacles. ~~(406.12(5), (6) and (8) are not adopted by the State of Oregon)~~
- (1) Dwelling units, including attached and detached garages and accessory buildings to dwelling units, and common areas of multifamily dwellings in all areas specified in 210.52 and 550.13
- (2) Guest rooms and guest suites of hotels, motels, and their common areas
- (3) Child care facilities
- (4) Preschools and elementary education facilities
- ~~(5) Business offices, corridors, waiting rooms and the like in clinics, medical and dental offices and outpatient facilities~~
- ~~(6) Subset of assembly occupancies described in 518.2 to include places of waiting transportation, gymnasiums, skating rinks, and auditoriums~~
- (7) Dormitories
- ~~(8) Assisted living facilities~~

87

### 408 Switchboards, Switchgear, and Panelboards pg. 273

- **408.8 Reconditioning of Equipment.** Reconditioning of equipment within the scope of this article shall be limited as described in 408.8(A) and (B). The reconditioning process shall use design qualified parts verified under applicable standards and be performed in accordance with any instructions provided by the manufacturer. If equipment has been damaged by fire, products of combustion, or water, it shall be specifically evaluated by its manufacturer, or a qualified testing laboratory, or the signing supervisor prior to being returned to service.
- ~~(A) Panelboards. Panelboards shall not be permitted to be reconditioned. This shall not prevent the replacement of a panelboard within an enclosure. In the event the replacement has not been listed for specific enclosure and the available fault current is greater than 10,000 amperes, the completed work shall be field labeled, and any previously applied listing marks on the cabinet that pertain to the panelboard shall be removed.~~

88

### 408 Switchboards, Switchgear, and Panelboards pg. 273

- **408.36 Overcurrent Protection.** In addition to the requirement of 408.30, a panelboard shall be protected by an overcurrent protective device having a rating not greater than that of the panelboard. This overcurrent protective device shall be located within or at any point on the supply side of the panelboard.
- Exception No. 1: Individual protection shall not be required for a panelboard used as service equipment with multiple disconnecting means in accordance with 230.71. In panelboards protected by three or more main circuit breakers or sets of fuses, the circuit breakers or sets of fuses shall not supply a second bus structure within the same panelboard assembly.

89

### 408 Switchboards, Switchgear, and Panelboards pg. 273

- ~~408.36 Exception No. 1 No. 2: Individual protection shall not be required for a panelboard protected on its supply side by two main circuit breakers or two sets of fuses in other than service equipment, having a combined rating not greater than that of the panelboard. A panelboard constructed or wired under this exception shall not contain more than 42 overcurrent devices. For the purposes of determining the maximum of 42 overcurrent devices, a 2-pole or a 3-pole circuit breaker shall be considered as two or three overcurrent devices, respectively.~~
- Exception No. 2 No. 3: For existing panelboards, individual protection shall not be required for a panelboard used as service equipment for an individual residential occupancy.

90

### 410 Luminaires, Lampholders, and Lamps pg. 278

~~410.7 Reconditioned Equipment. Luminaires, lampholders, and retrofit kits shall not be permitted to be reconditioned. If a retrofit kit is installed in a luminaire in accordance with the installation instructions, the retrofitted luminaire shall not be considered reconditioned.~~

- Not adopted by the State of Oregon.

91

### 410 Luminaires, Lampholders, and Lamps pg. 278

~~410.69 Identification of Control Conductor Insulation. Where control conductors are spliced, terminated, or connected in the same luminaire or enclosure as the branch-circuit conductors, the field-connected control conductor shall not be of a color reserved for the grounded branch-circuit conductor or the equipment grounding conductor. This requirement shall become effective January 1, 2022.~~

- Not adopted by the State of Oregon.

92

### 410 Luminaires, Lampholders, and Lamps pg. 285

- **Part XVI Special Provisions for Horticultural Lighting Equipment**
- **410.170 General.** Luminaires complying with Parts I, II, III, IV, V, VI, VII, IX, X, XI, and XII of this article shall be permitted to be used for horticultural lighting. Part XVI shall additionally apply to lighting equipment specifically identified for horticultural use and evaluated in accordance with the UL Product Spec category IFAU.

93

### 422 Appliances pg. 286

- **422.5 Ground-Fault Circuit-Interrupter (GFCI) for Personnel**
- **(A) General.** Appliances identified in 422.5(A)(1) through (A)(7) rated 150 volts or less to ground and 60 amperes or less, single- or 3-phase, shall be provided with Class A GFCI protection for personnel. Multiple Class A GFCI protective devices shall be permitted but shall not be required.
- **(6) Sump pumps and sewage pumps**
- Exception to (6): Receptacle ground-fault protection shall not be required for a single receptacle if the receptacle is labeled as "not GFCI protected."
- ~~(7) Dishwashers~~

94

### 422 Appliances pg. 290

- **422.34 Unit Switch(es) as Disconnecting Means.** A unit switch(es) with a marked-off position that is a part of an appliance and disconnects all ungrounded conductors shall be permitted as the disconnecting means required by this article where other means for disconnection are provided in occupancies specified in 422.34 (A) through (D). Unit switches on ranges, ovens and dishwashers shall not be considered the disconnect required by this section.

95

### 445 Generators pg. 340

- ~~445.6 Listing. Stationary generators 600 volts and less shall be listed.~~
- ~~Exception: One of a kind or custom-manufactured generators shall be permitted to be field-labeled by a field evaluation body.~~
- ~~Informational Note: For additional information, see UL 2200, Standard for Stationary Engine Generator Assemblies.~~
- Entire section: Not adopted by the State of Oregon.

96

**445 Generators pg. 342**

- ~~445.18 (D) Emergency Shutdown in One- and Two-Family Dwelling Units. For other than cord-and-plug-connected portable generators, an emergency shutdown device shall be located outside the dwelling unit at a readily accessible location.~~
- Not adopted by the State of Oregon.

97

**450 Transformers and Transformer Vaults pg. 348**

- 450.43 (C) Locks, Doors shall be equipped with locks, and doors shall be kept locked, with access being allowed only to qualified persons. Personnel doors shall open in the direction of egress and be equipped with ~~listed~~ fire exit hardware.
- Informational Note: See the OESC Section 110.26(C)(3) amendment.

98

**480 Storage Batteries pg. 354**

- 480.10 (E) Egress. Personnel doors intended for entrance to, and egress from, rooms designated as battery rooms shall open in the direction of egress and shall be equipped with listed panic or ~~listed~~ fire exit hardware.
- Informational Note: See the OESC Section 110.26(C)(3) amendment.

99

**490 Equipment Over 1000 Volts, Nominal pg. 359**

- 490.49 **Reconditioned Switchgear.** Switchgear, or sections of switchgear, within the scope of this article shall be permitted to be reconditioned. The reconditioning process shall use design qualified parts verified under applicable standards and be performed in accordance with any instructions provided by the manufacturer. Reconditioned switchgear shall be listed or field labeled as *reconditioned*, and previously applied listing marks, if any, within the portions reconditioned shall be removed. If equipment has been damaged by fire, products of combustion, or water, it shall be specifically evaluated by its manufacturer, ~~or~~ a qualified testing laboratory, or the signing supervisor prior to being returned to service.

100

**500 Hazardous Locations pg. 366**

- 500.8 Equipment. (A) Suitability. ~~"Suitability of identified equipment" shall be determined by one of the following: as used in 500.8 (A) means that equipment meets the requirements of ORS 479.760.~~
- (479.760 Certification of electrical products; safety indicators. (1) An electrical product may not be certified unless the product meets electrical product safety standards established in rule by concurrence of the Electrical and Elevator Board and the Director of the Department of Consumer and Business Services.)
- ~~(1) Equipment listing or labeling~~
- ~~(2) Evidence of equipment evaluation from a qualified testing laboratory or inspection agency concerned with product evaluation~~
- ~~(3) Evidence acceptable to the authority having jurisdiction such as a manufacturer's self-evaluation or an owner's engineering judgment.~~
- ~~Informational Note: Additional documentation for equipment may include certificates demonstrating compliance with applicable equipment standards, indicating special conditions of use, and other pertinent information. Guidelines for certificates may be found in ANSI/ISA 12.00.03, Certificate Standard for AEx Equipment for Hazardous (Classified) Locations.~~

101

**517 Health Care Facilities pg. 437**

- 517.10 Applicability
- (B) Not Covered. Part II shall not apply to the following:
  - (1) Business offices, corridors, waiting rooms, and the like in clinics, medical and dental offices, and outpatient facilities.
  - (2) Areas of nursing homes and limited care facilities wired in accordance with Chapters 1 through 4 of this Code where these areas are used exclusively as patient sleeping rooms.
  - (3) Areas used exclusively for any of the following purposes:
    - a. Intramuscular injections (immunizations)
    - b. Psychiatry and psychotherapy
    - c. Alternative medicine (i.e. Acupuncture, Chiropractic therapy, etc.)
    - d. Optometry
- e. Massage therapy
- f. Physical therapy
- g. Audiology

102

**517 Health Care Facilities pg. 437**

- **517.13 (A) Wiring Methods.** All branch circuits serving patient care spaces shall be provided with an effective ground-fault current path by installation in a metal raceway system or a cable having metallic armor or sheath assembly. The metal raceway system, metallic cable armor, or sheath assembly shall itself qualify as an equipment grounding conductor in accordance with 250.118.
- **Exception:** Type PVC conduit may be installed underground or embedded in concrete in Dental Clinics located in type B occupancies, provided that a wire type equipment grounding conductor is installed to meet the requirements of 250.118 and a separate insulated equipment grounding conductor is installed to meet the requirements of 517.13(B).

103

**517 Health Care Facilities pg. 438**

- **517.17 (D) Testing.** When equipment ground-fault protection is first installed, each level shall be performance tested to ensure compliance with 517.17(C). This testing shall be conducted by a **qualified person(s) having proper training and experience required to perform and evaluate the results of such performance testing**, using a test process in accordance with the instruction provided with the equipment. A written record of this testing shall be made, **signed by the person(s) performing this test**, and shall be available to the authority having jurisdiction.

104

**518 Assembly Occupancies pg. 453**

~~• 518.6 Illumination. Illumination shall be provided for all working spaces about fixed service equipment, switchboards, switchgear, panelboards, or motor control centers installed outdoors that serve assembly occupancies. Control by automatic means only shall not be permitted. Additional lighting outlets shall not be required where the workspace is illuminated by an adjacent light source.~~

- **Not adopted by the State of Oregon.**

105

**547 Agricultural Buildings pg. 471**

- **547.5 (G) Receptacles.** All 125-volt, single phase, 15- and 20-ampere general-purpose receptacles installed in the locations listed in (1) through (4) shall have ground-fault circuit-interrupter protection:
- **GFCI protection shall not be required for a single receptacle supplying a dedicated load and marked "not GFCI protected". A GFCI protected receptacle shall be located within 900 mm (3 ft) of the non-GFCI protected receptacle.**

106

**547 Agricultural Buildings pg. 472**

- **547.10 Equipotential Planes and Bonding of Equipotential Planes**
- **(A) Where Required.** Equipotential planes shall be installed where required in (A)(1) and (A)(2).
- **(1) Indoors.** Equipotential planes shall be installed **in areas designated by the owner. Where installed where required equipotential planes shall comply with in 547.10(A)(1) and (A)(2).**
- **(2) Outdoors.** Equipotential planes shall be installed in concrete slabs where metallic equipment is located that may become energized and is accessible to livestock.
- The equipotential plane shall encompass the area where the livestock stands while accessing metallic equipment that may become energized.
- **Exception to (A)(1) and (A)(2): Where the electrical system is designed by a professional engineer, as defined in ORS 672.002(2), and the electrical equipment is isolated and not accessible to livestock, and non-electrical metallic equipment is not likely to become energized.**
- **Informational Note:** See the definition of equipment in Article 100.

107

**555 Marinas, Boatyards ... pg. 503**

- **555.35 Ground-Fault Protection of Equipment (GFPE) and Ground-Fault Circuit-Interrupter (GFCI) Protection.**
- **(A)(3) Feeder and Branch-Circuit Conductors with GFPE.** Feeder and branch-circuit conductors that are installed on docking facilities shall be provided with GFPE set to open at currents not exceeding 100 milliamperes. Coordination with downstream GFPE shall be permitted at the feeder overcurrent protective device.
- **Exception No. 1 to (3): Transformer secondary conductors of a separately derived system that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted to be installed without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.**
- **Exception No. 2 to (3): Modifications to existing systems shall not require GFPE.**

108

**590 Temporary Installations pg. 507**

- **590.8 Overcurrent Protective Devices.**
- (A) **Where reused.** Where overcurrent protective devices that have been previously used are installed in a temporary installation, these overcurrent protective devices shall be ~~examined to ensure these devices have been~~ properly installed, ~~properly~~ and maintained, ~~and there is with~~ no evidence of impending failure.
- (B) **Service Overcurrent Protective Devices. Not adopted by the State of Oregon.** ~~Overcurrent protective devices for solidly grounded wye electrical services of more than 150 volts to ground but not exceeding 1000 volts phase-to-phase shall be current-limiting.~~

109

**590.8 Overcurrent Protective Devices.**

- (A) **Where reused.** Where overcurrent protective devices that have been previously used are installed in a temporary installation, these overcurrent protective devices shall be properly installed and maintained, with no evidence of impending failure.
- Informational Note: The phrase "evidence of impending failure" means that there is evidence such as arcing, overheating, loose or bound equipment parts, visible damage, or deterioration. The phrase "**properly maintained**" means that the equipment has been maintained in accordance with the manufacturers' recommendations and applicable industry codes and standards.

110

**600 Electric Signs and Outline Lighting pg. 513**

- **600.33 (B)(1)** Wiring shall be installed and supported in a neat and workmanlike manner. Cables and conductors installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable is not damaged by normal building use. The cable shall be supported and secured at intervals not exceeding 1.8 m (6 ft). Such cables shall be supported by straps, staples, hangers, cable ties, or similar fittings designed and installed so as not to damage the cable. The installation shall also comply with 300.4(D).

111

**620 Elevators, Dumbwaiters... Pg. 521**

- **620.1 Scope. ...**
- Informational Note No. 1: For further information, see ASME A17.1-2010/CSA B44-10, Safety code for Elevators and Escalators, the Oregon Elevator Specialty Code as adopted in OAR chapter 918, division 400.

112

**620 Elevators, Dumbwaiters... Pg. 522**

- **620.2 Separate Branch Circuit. A circuit dedicated solely for the purpose intended without other devices, systems or equipment connected to the circuit.**

113

**620 Elevators, Dumbwaiters... Pg. 523**

- **620.5 Working Clearances.** Working space shall be provided about controllers, disconnecting means, and other electrical equipment in accordance with 110.26(A).
- Where conditions of maintenance and supervision ensure that only qualified persons examine, adjust, service, and maintain the equipment, the clearance requirements of 110.26(A) shall not be required where any of the conditions in 620.5(A) through (D) are met. Where machine room doors swing inward, the arc of the door shall not encroach on those clearances required by 110.26(A).

114

**620 Elevators, Dumbwaiters... Pg. 523**

- **620.6 Ground-Fault Circuit-Interrupter Protection for Personnel. ...**
- ~~A permanently installed sump pump shall be permanently wired or shall be supplied by a single receptacle that is ground-fault circuit-interrupter protected.~~
- A single receptacle supplying a permanently installed sump pump shall not require ground-fault circuit-interrupter protection.

115

**620 Elevators, Dumbwaiters... Pg. 523**

- **620.11 Insulation of Conductors.** The insulation of conductors shall comply with 620.11(A) through (D).
- **(A) Hoistway Door Interlock Wiring.** The conductors to the hoistway door interlocks from the hoistway riser shall be shall be one of the following:
  - (1) Flame retardant and suitable for temperature of not less than 200°C (392°F). Conductors shall be Type SF or equivalent.
  - (2) Physically protected using an approved method, such that the conductor assembly is flame retardant and suitable for a temperature of not less than 200°C (392°F).
- Exception: Where not required by the Oregon Elevator Specialty Code (ASME A17.1).

116

**620 Elevators, Dumbwaiters... Pg. 527**

- **620.37 Wiring in Hoistways, Machine Rooms, Control Rooms, Machinery Spaces, and Control Spaces.**
- **(A) Uses Permitted.** Only such electrical wiring, raceways, and cables used directly in connection with the elevator or dumbwaiter, including wiring for signals, for communication with the car, for lighting, heating, air conditioning, and ventilating the elevator car, for fire detecting systems, for pit sump pumps, and for heating, lighting, and ventilating the hoistway, shall be permitted inside the hoistway, machine rooms, control rooms, machinery spaces, and control spaces.
- Conduits and raceways necessary for the connection of such devices shall only enter hoistways and machine rooms to the extent necessary to connect the device(s) attached thereto.

117

**620 Elevators, Dumbwaiters... Pg. 528**

- **Part VI. Disconnecting Means and Control**
- **620.51 Disconnecting Means.** A single means for disconnecting all ungrounded main power supply conductors for each elevator, dumbwaiter, escalator, moving walk, platform lift, or stairway chairlift shall be provided and be designed so that no pole can be operated independently. Where multiple driving machines are connected to a single elevator, escalator, moving walk, or pumping unit, there shall be one disconnecting mean to disconnect the motor(s) and control valve operating magnets.

118

**620 Elevators, Dumbwaiters... Pg. 528**

- **Part VI. Disconnecting Means and Control**
- **620.51 Disconnecting Means.**
- **(B) Operation.** No provision shall be made to open or close this disconnecting means from any other part of the premises. If sprinklers are installed in hoistways, machine rooms, control rooms, machinery spaces, or control spaces, the disconnecting means shall be permitted to automatically open the power supply to the affected elevator(s) prior to the application of water. No provision shall be made to automatically close this disconnecting means. Power shall only be restored by manual means.
- Where provided, this disconnecting means shall be located in the elevator control room or control space. The installation shall comply with the requirements of NFPA 72 as adopted in OAR 918-306-0005.
- (NFPA 72 Fire Alarm and Signaling Code)

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**620 Elevators, Dumbwaiters... Pg. 528**

- **Part VI. Disconnecting Means and Control**
- **620.51 Disconnecting Means.**
- **(C) Location.** The disconnecting means shall be located where it is readily accessible to qualified persons. Where machine rooms are provided, the disconnecting means required by 620.51 shall be located within 610 mm (24 inches) of the open side of the machine room access door. Where more than one disconnect is required for a multi-car group, the disconnects shall be adjacent to each other with the first disconnect located within 610 mm (24 inches) of the open side of the machine room access door. Measurement shall be taken from the edge of the disconnect nearest the machine room door.

120

**620 Elevators, Dumbwaiters... Pg. 529**

- Part VI. Disconnecting Means and Control
- 620.51 Disconnecting Means.
- (C)(4) On Platform Lifts and Stairway Chairlifts. On platform lifts and stairway chairlifts, the disconnecting means shall be located within sight of the motor controller or lift and within 1.83 m (six feet) of the motor controller. The disconnecting means shall not be located in the runway enclosure.

121

**620 Elevators, Dumbwaiters... Pg. 529**

- Part VI. Disconnecting Means and Control
- 620.51 Disconnecting Means.
- (C)(5) Residential installations. A disconnecting means shall be required to be placed within sight of the controller or lift. Where such devices are supplied with flexible cord and plug type connectors, the supply receptacle shall be switched by the disconnecting means. The disconnecting means does not require overcurrent protection, provided such protection is supplied by the branch circuit overcurrent device. In all other respects the disconnecting means shall comply with the requirements of this section.

122

**620 Elevators, Dumbwaiters... Pg. 531**

- Part IX Grounding and Bonding
- 620.86 Flexible Metal Conduit. Where flexible metal conduit is utilized between the disconnecting means specified in 620.51 and the elevator controller, an equipment grounding conductor shall be provided within the raceway and sized per 250.122 and Table 250.122.

123

**625 Electric Vehicle Power Transfer System pg. 532**

- **625.42 Rating.** The power transfer equipment shall have sufficient rating to supply the load served. Electric vehicle charging loads shall be considered to be continuous loads for the purposes of this article. Service and feeder shall be sized in accordance with the product ratings. Where an automatic load management system is used, the maximum equipment load on a service and feeder shall be the maximum load permitted by the automatic load management system
- Informational Note: See Statewide Alternate Method 09-01 for the use of a demand factor table for calculating electrical vehicle charging equipment services and feeders.

124

**645 Information Technology Equipment pg. 546**

- **645.2 Critical Operations Data System.** An information technology equipment system that has been designated by the building owner as requires requiring continuous operation. ~~for reasons of public safety, emergency management, national security, or business continuity.~~

125

**645 Information Technology Equipment pg. 548**

- **645.10 Disconnecting Means.** An approved means shall be provided to disconnect power to all electronic equipment in the information technology equipment room or in designated zones within the room. There shall also be a similar approved means to disconnect the power to all dedicated HVAC systems serving the room or designated zones and shall cause all required fire/smoke dampers to close. The disconnecting means shall be grouped and identified and shall be readily accessible at the principal exit doors, or ~~shall~~ comply with either 645.10(A) or (B).

126



**670 Industrial Machinery pg. 562**

- ~~670.6 Surge Protection. Industrial machinery with safety interlock control devices not effectively protected from voltage surges on the incoming supply circuit shall have surge protection installed.~~
- Entire section: Not adopted by the State of Oregon.

127

**680 Swimming Pools, Fountains, ... pg. 565**

- ~~680.4 Inspections After Installation. The authority having jurisdiction shall be permitted to require periodic inspection and testing.~~
- Not adopted by the State of Oregon.

128

**680 Swimming Pools, Fountains, ... pg. 567**

- ~~680.21 (D) Pool Pump Motor Replacement. Where a pool pump motor in 680.21(C) is replaced for maintenance or repair, the replacement pump motor shall be provided with ground-fault circuit interrupter protection.~~
- Not adopted by the State of Oregon.

129

**680 Swimming Pools, Fountains, ... pg. 574**

- **680.42 Outdoor Installations** A spa or hot tub installed outdoors shall comply with the provisions of Parts I and II of this article, except as permitted in 680.42(A) and (B), that would otherwise apply to pools installed outdoors.
- **(B) Bonding.** Equipotential bonding of perimeter surfaces in accordance with 680.26(B) (2) shall not be required to be provided for spas and hot tubs where all of the following conditions apply:
  - [equipotential bonding not required where (1) through (4) are met:]
  - **(4)** The top rim of the spa or hot tub shall be at least 710 mm (28 in.) above all perimeter surfaces that are within 760 mm (30 in.), measured horizontally from the spa or hot tub. The height of nonconductive external steps or deck for exit and entry to or exit from the self-contained spa shall not be used to reduce or increase this rim height measurement.

130

**682 Natural and Artificially Made Bodies of Water pg. 580**

- **682.15 Ground-Fault Protection.** The GFCI requirements in this article, unless otherwise noted, shall be in addition to the requirements in 210.8. Ground-fault protection shall be provided in accordance with 682.15(A) and (B). The protection device shall be located not less than 300 mm (12 in.) above the established electrical datum plane.
- **(A) Outlets.** ~~Not adopted by the State of Oregon. Outlets supplied by branch circuits not exceeding 150 volts to ground and 60 amperes, single phase, shall be provided with ground-fault circuit interrupter protection for personnel.~~
- **(B) Feeder and Branch Circuits on Piers.** Feeder and branch-circuit conductors that are installed on piers shall be provided with ground-fault protection not exceeding ~~100~~ **30** mA. Coordination with downstream ground-fault protection shall be permitted at the feeder overcurrent protective device.

131

**690 Solar Photovoltaic Systems pg. 586**

- **690.12 Rapid Shutdown of PV Systems on Buildings.**
- PV system circuits installed on or in buildings shall include a rapid shutdown function to reduce shock hazard for firefighters in accordance with 690.12(A) through (D). Where an addition to an existing system(s) on or in a building is installed, a rapid shutdown function shall be provided for the existing system(s) on or in the building. The provisions of 690.12(B)(2) shall not apply to the existing system(s).

132

**690 Solar Photovoltaic Systems pg. 592**

- **690.47 Grounding Electrodes and Grounding Electrode Conductors.** Additional grounding electrodes shall be permitted to be installed in accordance with 250.52 and 250.54. Grounding shall be permitted to be connected directly to the PV module frame(s) or support structure. A grounding electrode conductor shall be sized according to 250.66, and shall not be smaller than 6 AWG copper or 4 AWG aluminum. A support structure for a ground-mounted PV array shall be permitted to be considered a grounding electrode if it meets the requirements of 250.52. PV arrays mounted to buildings shall be permitted to use the metal structural frame of the building if the requirements of 250.68(C)(2) are met.

133

**700 Emergency Systems. Pg. 605**

- **700 Emergency Systems.**
- Building Officials and inspectors administering and enforcing the state building code under ORS 455.148 and 455.150, shall ensure compliance with Sections 700.32, 701.27, or 708.54 by verifying receipt of a certificate signed by the Engineer of Record or the Signing Supervisor stating that the proposed installation complies with the selective coordination requirements of this code.

134

**700 Emergency Systems. Pg. 605**

- **700.3 Testing and Maintenance**
- **(F) Temporary Source of Power for Maintenance or Repair of the Alternate Source of Power.** If the building owner deems it necessary and the emergency system relies on a single alternate source of power, which will be disabled for maintenance or repair, the emergency system shall include permanent switching means to connect a portable or temporary alternate source of power, which shall be available for the duration of the maintenance or repair...

135

**700 Emergency Systems. Pg. 611**

- **700.32 Selective Coordination.** Emergency system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.
- For the purposes of this section, supply side overcurrent protection means those protective devices on the emergency system supply side and not on the normal power supply side. The protection shall be selectively coordinated using the higher of the normal power supply fault current levels or emergency system fault current levels. Overcurrent devices shall be selectively coordinated for .01 seconds and greater.

136

**700 Emergency Systems. Pg. 605**

- **700.32 Selective Coordination.** Emergency system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.
- **Exception No. 1:** Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.
- **Exception No. 2:** The requirements for selective coordination shall meet the coordination requirements in effect at the time of the original installation when the installation is being altered, maintained or repaired. The ground fault sensing function of overcurrent protective devices will only be required to selectively coordinate with the ground fault sensing functions of other protective devices.

137

**701 Legally Required Standby Systems pg. 614**

- **701.32 Selective Coordination.** Legally required standby system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.
- For the purposes of this section, supply side overcurrent protection means those protective devices on the emergency system supply side and not on the normal power supply side. The protection shall be selectively coordinated using the higher of the normal power supply fault current levels or emergency system fault current levels. Overcurrent devices shall be selectively coordinated for .01 seconds and greater.

138

### 701 Legally Required Standby Systems pg. 614

- **701.32 Selective Coordination.** Legally required standby system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.
- **Exception No. 1:** *Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.*
- **Exception No. 2:** *The requirements for selective coordination shall meet the coordination requirements in effect at the time of the original installation when the installation is being maintained, altered or repaired. The ground fault sensing function of overcurrent protective devices will only be required to selectively coordinate with the ground fault sensing functions of other protective devices.*

139

### 702 Optional Standby Systems pg. 615

- **(B) System Capacity .**
- **(1) Manual Transfer Equipment.** Where manual transfer equipment is used, an optional standby system shall have adequate capacity and rating for the supply of all equipment intended to be operated at one time. The user of the optional standby system shall be permitted to select the load connected to the system.
- **(2) Automatic Transfer Equipment.** Where automatic transfer equipment is used, an optional standby system shall comply with 702.4(B) (2) (a) or (B) (2) (b) in accordance with Article 220 or by another approved method.
- **(a) Full Load.** The standby source shall be capable of supplying the full load that is transferred by the automatic transfer equipment.
- **(b) Load Management.** Where a system is employed that will automatically manage the connected load, the standby source shall have a capacity sufficient to supply the maximum load that will be connected by the load management system.
- **Exception:** *In one- and two-family dwellings manual management of the connected load shall be permitted.*

140

### 702 Optional Standby Systems pg. 616

- **702.7 Signs**
- **(A) Standby.** A sign shall be placed at the service-entrance equipment ~~for commercial and industrial installations that indicates the type and location of each on-site optional standby power source. A sign shall not be required for individual unit equipment for standby illumination.~~ For one- and two-family dwelling units, a sign shall be placed at the disconnecting means required in 230.85 that indicates the location of each permanently installed on-site optional stand-by power source disconnect or means to shut down the prime mover as required in 445.18(D).

141

### 708 Critical Operations Power Systems (COPS) pg. 624

- **708.1 Scope.** ...Critical operations areas and critical operations power systems are ~~those systems so classed by municipal, state, federal, or other codes by any governmental agency having jurisdiction or by facility engineering documentation establishing the necessity for such a designation by the owner of the facility. A building official has no authority to designate or require designation of an area as requiring a critical operations power system.~~ These Critical operations power systems can include but are not limited to power systems, HVAC, fire alarm, security, communications, and signaling for designated critical operations areas.

142

### 708 Critical Operations Power Systems (COPS) pg. 624

- **Part I. General**
  - **708.1 Scope.** This article applies to the installation, operation, monitoring, control, and maintenance of the portions of the premises wiring system intended to supply, distribute, and control electricity to designated critical operations areas (DCOA) in the event of disruption to elements of the normal system.
- Critical operations areas and critical operations power systems are designated by the owner of the facility. A building official has no authority to designate or require designation of an area as requiring a critical operations power system. Critical operations power systems can include but are not limited to power systems, HVAC, fire alarm, security, communications, and signaling for designated critical operations areas.

143

### 708 Critical Operations Power Systems (COPS) pg. 628

- **708.54 Selective Coordination.** Critical operations power system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.
- **For the purposes of this section, supply side overcurrent protection means those protective devices on the emergency system supply side and not on the normal power supply side. The protection shall be selectively coordinated using the higher of the normal power supply fault current levels or emergency system fault current levels. Overcurrent devices shall be selectively coordinated for .01 seconds and greater.**

144

### 708 Critical Operations Power Systems (COPS) pg. 628

- **708.54 Selective Coordination.** Critical operations power system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.
- **Exception No. 1:** Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.
- **Exception No. 2:** The requirements for selective coordination shall meet the coordination requirements in effect at the time of the original installation when the installation is being maintained, altered or repaired. The ground fault sensing function of overcurrent protective devices will only be required to selectively coordinate with the ground fault sensing functions of other protective devices.

145

### 725 Class 1, 2, and 3 Remote-Control, Signaling, and Power-Limited Circuits pg. 633

- **725.24 Mechanical Execution of Work.** Class 1, Class 2, and Class 3 circuits shall be installed in a neat and workmanlike manner. Cables and conductors installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be supported by straps, staples, hangers, cable ties, or similar fittings designed and installed so as not to damage the cable. This installation shall also comply with 300.4 **and 300.11**.
- (300.11 Securing and Supporting)

146

### 760 Fire Alarm Systems pg. 647

- **760.24 Mechanical Execution of Work.**
- **(A) General.**
- Fire alarm circuits shall be installed in a neat workmanlike manner. Cables and conductors installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be supported by straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also comply with 300.4 and **300.11**.
- (300.11 Securing and Supporting)

147

### 760 Fire Alarm Systems pg. 647

- Part II Non-Power Limited Fire Alarm (NPLFA) Circuits
- **760.41 NPLFA Circuit Power Source Requirements**
- **(B) Branch Circuit.** The branch circuit supplying the fire alarm equipment(s) shall supply no other loads. The location of the branch-circuit overcurrent protective device shall be permanently identified at the fire alarm control unit. The circuit disconnecting means shall have red identification, ~~shall be accessible only to qualified personnel~~, and shall be identified as "FIRE ALARM CIRCUIT." The red identification shall not damage the overcurrent protective devices or obscure the manufacturer's markings. This branch circuit shall not be supplied through ground-fault circuit interrupters or arc-fault circuit-interrupters.

148

### 760 Fire Alarm Systems pg. 649

- Part III Power Limited Fire Alarm (PLFA) Circuits
- **760.121 PLFA Circuit Power Source Requirements**
- **(B) Branch Circuit.** The branch circuit supplying the fire alarm equipment(s) shall supply no other loads. The location of the branch-circuit overcurrent protective device shall be permanently identified at the fire alarm control unit. The circuit disconnecting means shall have red identification, ~~shall be accessible only to qualified personnel~~, and shall be identified as "FIRE ALARM CIRCUIT." The red identification shall not damage the overcurrent protective devices or obscure the manufacturer's markings. This branch circuit shall not be supplied through ground-fault circuit interrupters or arc-fault circuit-interrupters. The fire alarm branch-circuit disconnecting means shall be permitted to be secured in the "on" position.

149

### 770 Optic Fiber Cables pg. 657

- **770.48 Unlisted Cables Entering Buildings**
- **(B) Nonconductive Cables in Raceway.** Unlisted nonconductive outside plant optical fiber cables shall be permitted to enter the building from the outside and shall be permitted to be installed in any of the following raceways:
  - (1) Intermediate metal conduit (IMC)
  - (2) Rigid metal conduit (RMC)
  - (3) Rigid polyvinyl chloride conduit (PVC)
  - (4) Electrical metallic tubing (EMT)
  - **(5) Electrical Nonmetallic Conduit (ENT)**

150



**2020 Rule and Law**

ORS 479-Electrical Safety  
OAR 918-251 through 311  
Oregon Legislation

1

**ORS and OAR**

Oregon Revised Statute 479 contains the legislative actions governing electrical safety in the State of Oregon.

Oregon Administrative Rules 918-030 through 311 define the manner in which these laws will be handled and who will have the authority. (i.e. Building Codes Division).

2

**ORS 479-Electrical Safety**

3

**479.520 Purpose**

To protect the health and safety of the people of Oregon from the danger of electrically caused shocks, fires and explosions

To protect property situated in Oregon from the hazard of electrically caused fires and explosions.

4

For determining where and by whom electrical installations are being made where electrical products are sold in this state.

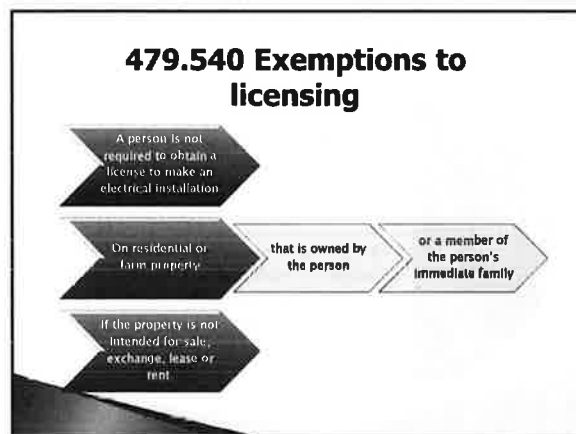
To assure the public that persons making electrical installations in this state are qualified by experience and training.

5

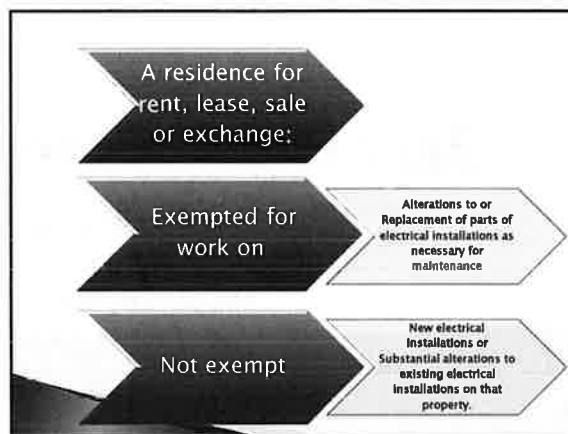
To assure that electrical installations meet minimum safety standards and that electrical products meet electrical product safety standards.

For the administration and enforcement of the Electrical Safety Law

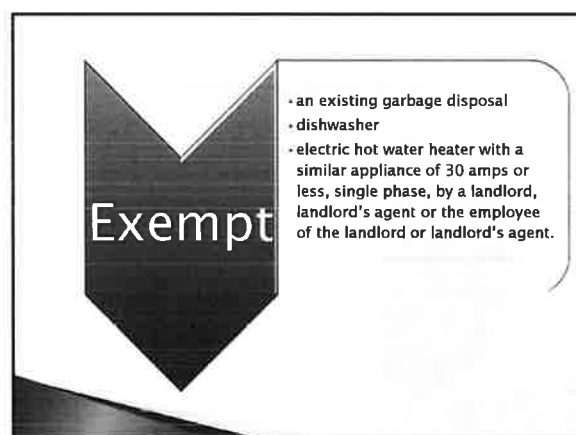
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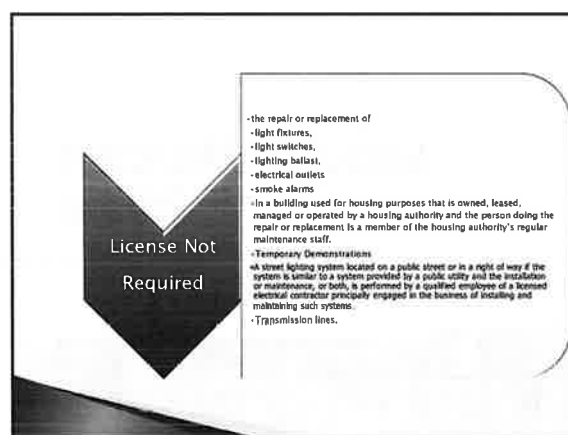
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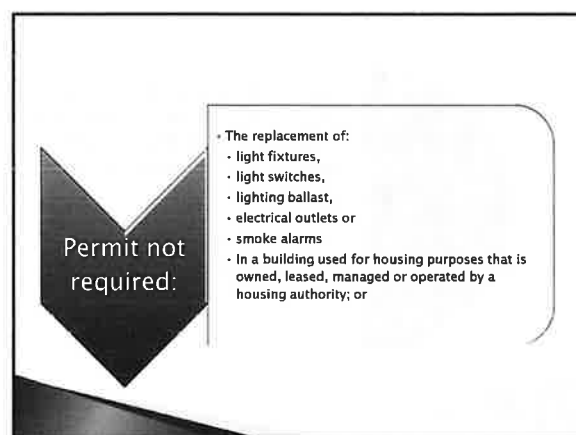
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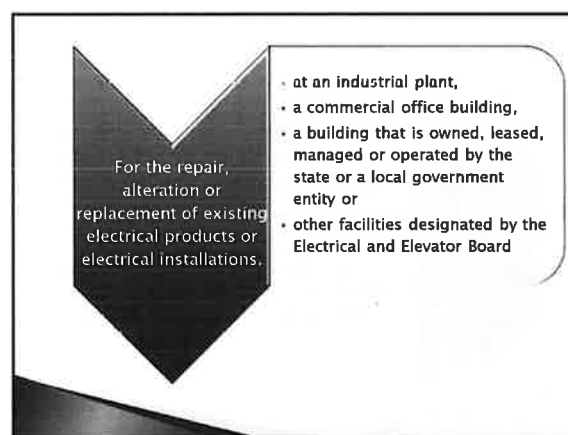
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10



11



12

(7) In cases of emergency in industrial plants, a permit is not required in advance for electrical installation made by a person licensed as a

- general supervising electrician
- general journeyman electrician
- an electrical apprentice

13

• A license or permit is not required for the installation or assembly of industrial electrical equipment by the duly authorized agents of the factory, vendor or owner.

14

Except as provided in ORS 479.540, no person shall work on any new electrical installation for which a permit has not been issued.

A temporary permit may be used for:

- emergency or
- unanticipated work

valid for seven days to a licensed electrical contractor

15

• A permit issued to an electrical contractor upon the request of the contractor's supervising electrician is void upon the end of the employment of such supervising electrician before completion of the electrical installation.

16

### 479.570 Exceptions

• An installation for which a written request to energize has been made by a licensed supervising electrician to which the appropriate electrical permit has been attached

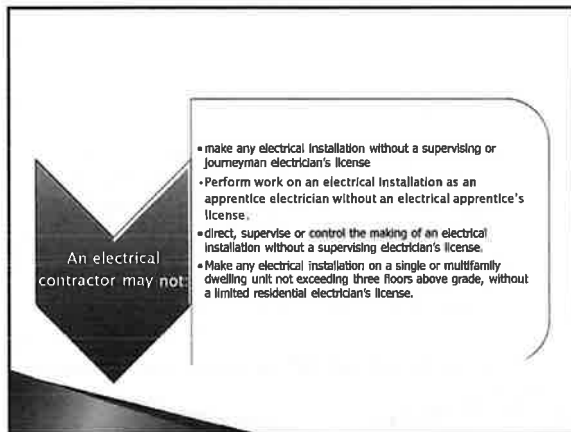
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Without an electrical contractor's license, a person may not:

- engage in the business of making electrical installations,
- advertise as or otherwise purport to be licensed to make electrical installations
- purport to be acting as a business that makes electrical installations.

18

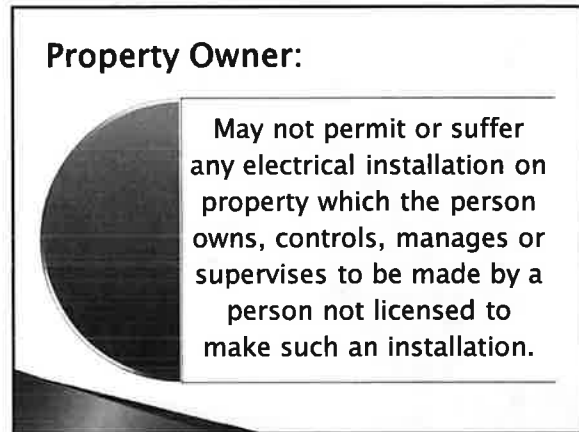




An electrical contractor may not:

- make any electrical installation without a supervising or journeyman electrician's license
- Perform work on an electrical installation as an apprentice electrician without an electrical apprentice's license.
- direct, supervise or control the making of an electrical installation without a supervising electrician's license.
- Make any electrical installation on a single or multifamily dwelling unit not exceeding three floors above grade, without a limited residential electrician's license.

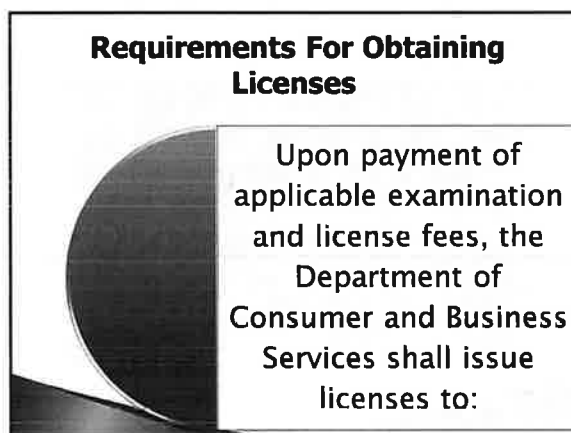
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**Property Owner:**

May not permit or suffer any electrical installation on property which the person owns, controls, manages or supervises to be made by a person not licensed to make such an installation.

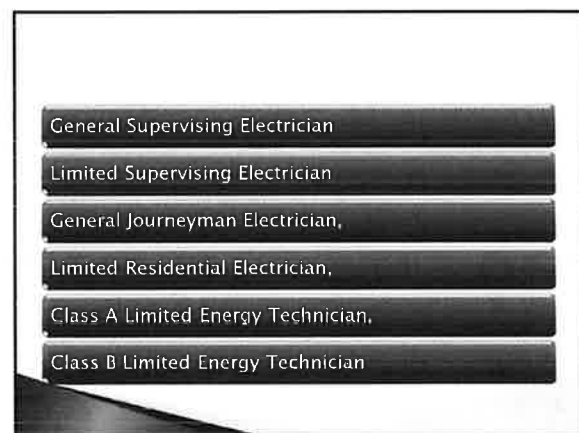
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**Requirements For Obtaining Licenses**

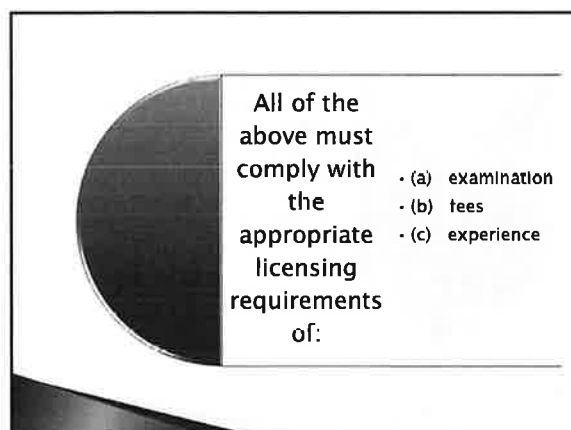
Upon payment of applicable examination and license fees, the Department of Consumer and Business Services shall issue licenses to:

21



- General Supervising Electrician
- Limited Supervising Electrician
- General Journeyman Electrician,
- Limited Residential Electrician,
- Class A Limited Energy Technician,
- Class B Limited Energy Technician

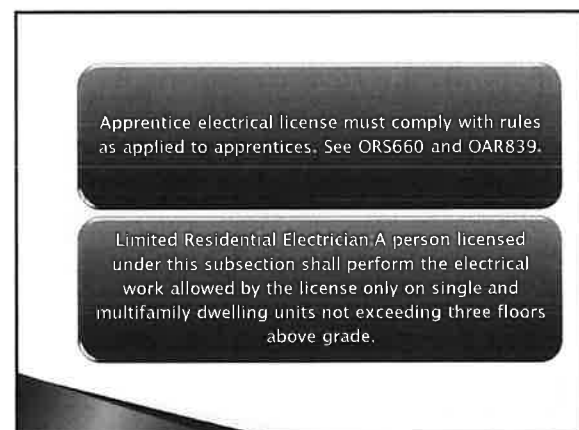
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All of the above must comply with the appropriate licensing requirements of:

- (a) examination
- (b) fees
- (c) experience

23



Apprentice electrical license must comply with rules as applied to apprentices. See ORS660 and OAR839.

Limited Residential Electrician A person licensed under this subsection shall perform the electrical work allowed by the license only on single and multifamily dwelling units not exceeding three floors above grade.

24

## Expiration Dates Of Licenses

As of July 1, 2008, the following licenses expire on July 1<sup>st</sup> every three years:

- electrical contractor,
- limited energy contractor,
- limited sign contractor,
- pump specialty contractor,
- elevator contractor and
- limited maintenance specialty contractor.

25

## All Other:

- ▶ All other licenses shall expire on October 1 no later than three years after the date of issuance.

26

## 479.650 Renewal

The holder of a license is entitled to renewal of the license upon its expiration if the person:

- Pays the fee required by ORS 479.840
- Complies with any requirements for continuing education established by the Electrical and Elevator Board by rule.

27

## Late Renewal:

- ▶ A person who renews an electrical license after October 1 and on or before December 31 of the year in which the license expires shall pay twice the amount of the regular license fee.

28

## Failure to Renew:

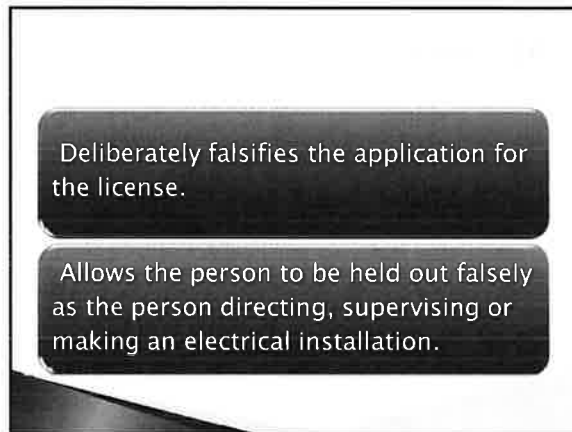
- ▶ If a person fails to renew a license by December 31 of the year in which the license expires or otherwise fails to qualify for renewal of a license under this section, the person may only receive a license if the person makes application for, qualifies for and is issued a license in the same manner as a person who has not been previously licensed.

29

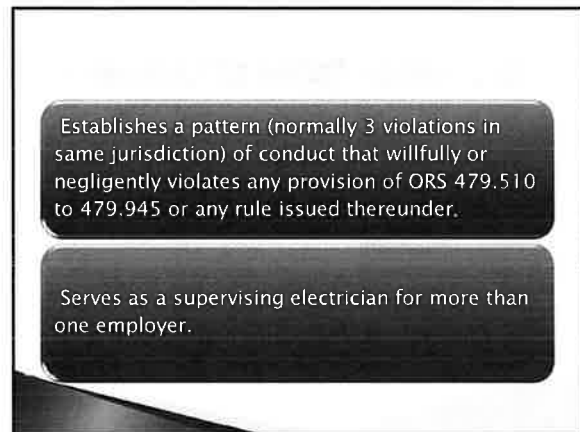
## Revocation, Cancellation or Suspension of License

- ▶ The Electrical and Elevator Board shall revoke the license of any licensee who does not meet the minimum qualifications for that license. The board may summarily suspend or cancel any license issued under, if the person in whose name it was issued:

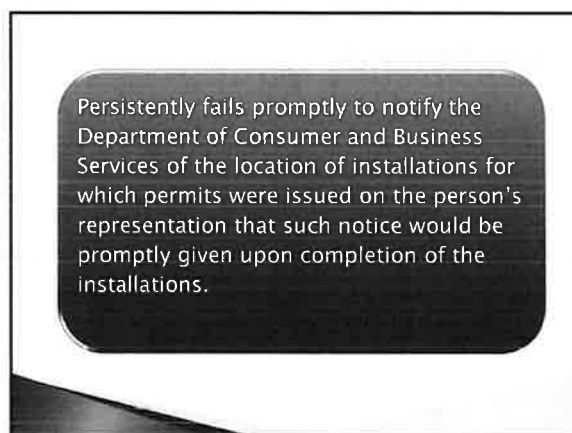
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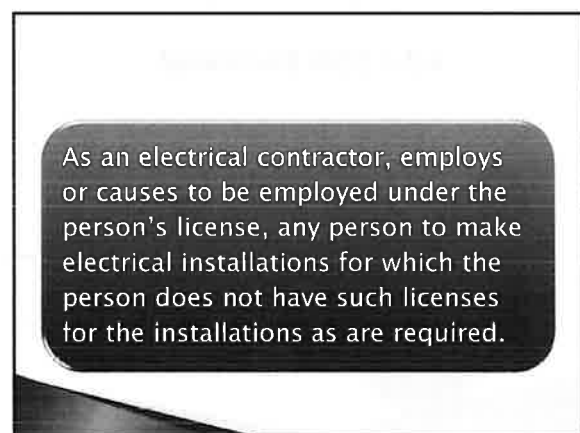
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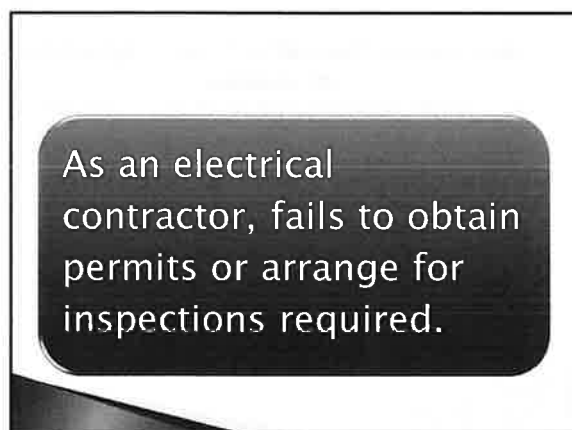
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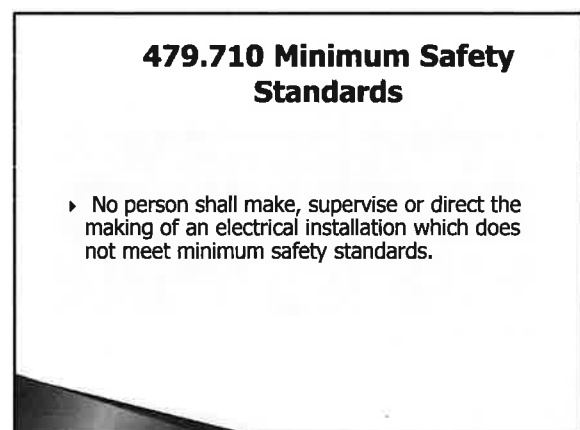
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36

### Inspector Conflicts of Interest

- The Director of the Department of Consumer and Business Services may adopt rules regulating or prohibiting conflicts of interest for electrical inspectors.

37

### 479.840 Fees

\$125 for an electrical contractor license for each place of business operated by the applicant.

\$125 for a limited energy contractor or limited sign contractor license.

38

\$25 for a pump specialty contractor or limited maintenance specialty contractor license.

\$150 for an elevator contractor license.

39

\$100 for a license for a:

- General journeyman electrician;
- General supervising electrician;
- Limited supervising industrial electrician;
- Limited supervising manufacturing plant electrician;

40

Limited journeyman industrial electrician;

Limited maintenance industrial electrician;

Limited maintenance manufactured dwelling or recreational vehicle electrician

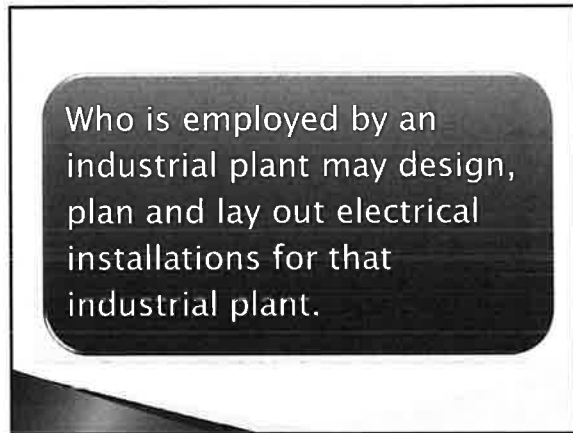
\$10 for the right to take the written qualifying examination.

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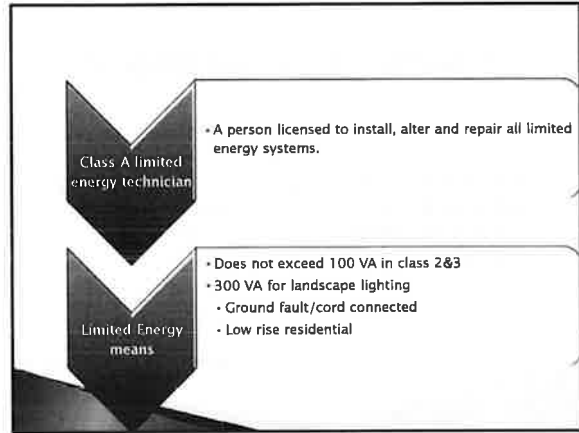
Supervising Electrician; employed by the holder of an electrical contractor's license

- may design,
- plan and
- lay out electrical installations for customers of the electrical contractor.

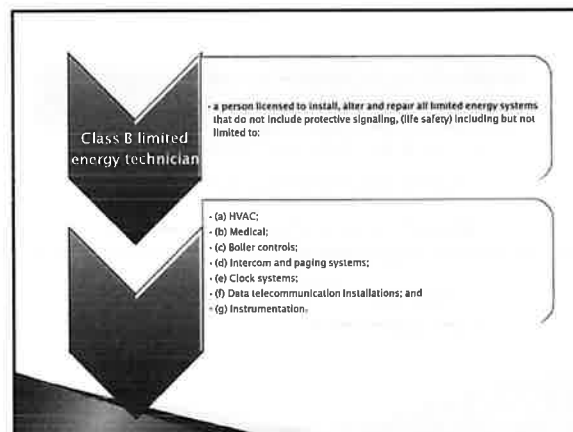
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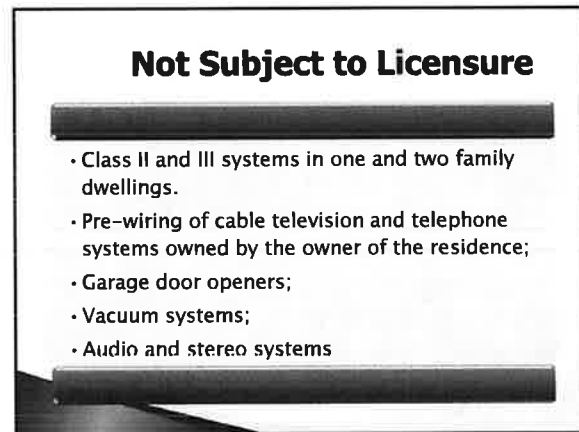
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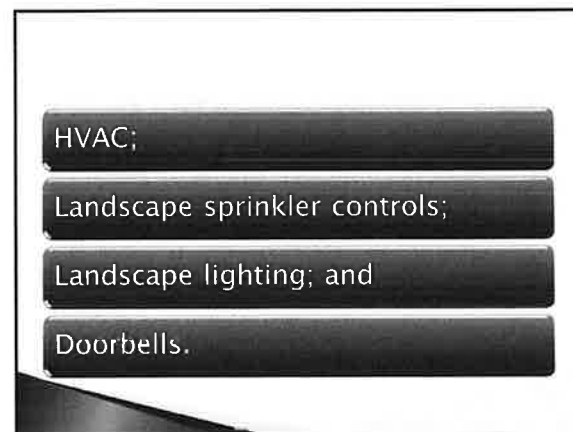
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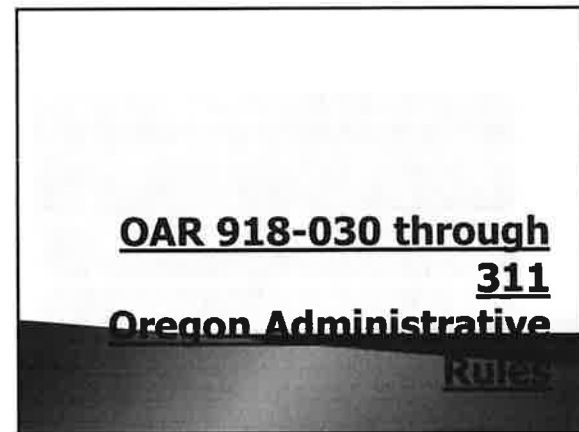
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46



47



48

## **DIVISION 251** **ADMINISTRATION AND** **DEFINITIONS**

49

- Inspection requests should be directed to the closest field office
- Requests to place items on the Electrical and Elevator Board agenda and requests for adoption or amendment of electrical rules should be directed to the Chief Electrical Inspector at the general office.
- Requests for electrical code interpretation shall be directed to the Chief Electrical Inspector.

50

## **DIVISION 261** **EXEMPTIONS**

51

### **Exemptions**

52

Partial Exemption for Medical Diagnostic Imaging and Therapy Equipment
17. with Elevator and Escalators Used as Recreational Vehicles
Exemption for HVAC/R Electrical Components
Exemption and Interpretation Regarding Overhead and Underground Electrical Power Lines and Equipment
Transformers
Industrial Electrical Equipment
Traffic management systems

## **DIVISION 271** **INSPECTIONS**

53

### **OAR 918-271-0000** **Electrical Inspector**

- ▶ An electrical inspector shall inspect electrical installations and provide public information on the meaning or application of an electrical code provision, but shall not lay out work or act as a consultant for electrical contractors, property owners or users.

54

## Calls for Inspection

- ▶ All persons who take out an electrical permit, homeowners as well as electrical contractors, shall request an inspection within three working days of:

The completion of any electrical installation intended to be covered or concealed or that is intended to be placed into service before the final electrical inspection

The completion of all electrical installations for the job site covered by a particular permit.

Transactions under a master inspection permit are covered by separate requirements.

55

56

## Requests for Inspection

Except as provided in section (2) of this rule, an inspecting jurisdiction,

- shall inspect within 48 hours of a written request for inspection
- unless the time for inspection is extended to a set date by mutual agreement.
- The 48 hours excludes Saturdays, Sundays and holidays.

57

## Remote Locations:

- ▶ The inspecting jurisdiction shall inspect an installation at a remote location within a reasonable time of the request.

58

remote location

- An inspection location that is more than 60 miles one way using the most direct route, measured from the closest of the inspector's station, inspection office or the inspecting jurisdiction's primary location.

- An inspection location that requires more than one hour of normal driving, one way, using the most direct route from the closest point mentioned in paragraph (A) of this subsection.

59

### reasonable time

- a response time that takes into account the time, distance and number of inspection requests
- shall not exceed seven consecutive calendar days including the date the request was received
- unless the time for inspection is extended to a set date by mutual agreement.
- If the seventh calendar day falls on a weekend or holiday this is extended to include the next business day.

60

## Notice of Inspection Results:

"Reasonable procedures designed to provide actual notice" shall include posting at the job site and:

- (A) FAX transmittal to the electrical contractor;
- (B) Personal delivery to the electrical contractor or signing supervisor;
- (C) Mailing, including electronic mailing; or
- (D) Telephone followed by written notification;

61

Work  
cannot  
be  
covered  
unless:

- Inspection clearance is given
- The request for inspection is in writing communicated to the inspecting jurisdiction, with notice that a cover inspection is involved, no extensions are agreed to, and the maximum time for making the required inspection are exceeded.
- Written request includes a letter, telegram or FAX transmittal;
- The burden of proof is on the person requesting the electrical inspection to prove that a written request was communicated.

62

## Correction of Defects

- Defects in electrical installations noted by the electrical inspector shall be corrected and an inspection request made within 20 calendar days of the date of actual notice of deficiency..

63

- If corrections cannot reasonably be made within the specified time, or an interpretation or written appeal has been requested, the permit holder shall contact the inspecting jurisdiction and request an extension of time to a specified date or until deficiency is resolved.

64

- Requests for inspection and requests for extension may be communicated in any way. If challenged, the burden of proof is on the requester to document the request was in fact communicated.
- Responses may also be communicated in any way, but if challenged, the burden of proof is on the inspecting jurisdiction.

65

## Inspection Protocols

66



### Electrical inspectors shall inspect:

- appropriateness of the size,
- placement,
- protection and
- termination
- Of the following electrical installations,

67

Service entrance conductors;  
 Service equipment;  
 Grounding electrode and grounding electrode conductor;  
 Bonding;  
 Overcurrent protection;  
 Branch circuits;  
 Feeders;  
 Ground-fault circuit interrupter devices (GFCI) and ground-fault protection systems (GFPS) and  
 Underground installations;

68

### Final Inspections:

A final inspection shall be requested and provided to verify all mandatory items in subsections (1)(a) to (i) of this rule are in compliance.

A final inspection shall be performed by the inspecting jurisdiction as soon as practicable, but not later than five working days following the date on which it is requested.

69

### Secondary Considerations

- ▶ At least 30 percent of all secondary items at a job site shall be inspected using a sampling process that reviews all separate categories of secondary items. If code violations are found within the samples inspected, an additional ten percent of the secondary items shall be inspected.

70

## **DIVISION 282** **LICENSING**

71

### **Electrical Contractors**

72

## Electrical Contractors

- ▶ An electrical contractor license is a specialized license allowing a company to engage in the business of making electrical installations.
- ▶ This license is in addition to the licensing and bonding required by the Construction Contractors Board.

73

## Supervisor:

- ▶ Generally, the contractor is required to have a full-time general supervising electrician to supervise the electrical work and sign permits

74

## An electrical contractor:

- Shall continuously employ at least one full-time general supervising electrician except as otherwise exempted;
- Is not authorized to make, direct, supervise or control the making of an electrical installation, unless properly licensed; and
- Shall display its electrical license at each of the contractor's places of business.
- If the contractor has multiple places of business, a facsimile of the license may be posted.

75

## Contractor's Responsibilities

- ▶ Electrical contractors engaged in the business of making electrical installations that require a signing supervising electrician shall assure that all electrical work is made by, or under the direct supervision or control of, a continuously employed full-time signing supervising electrician acting within the scope of their license.

76

Signing supervising electricians shall perform supervisory duties for only one contractor for which they are registered.

- Registered signing supervising electricians shall provide direct supervision or control through one of the following:
  - Be on the job site
  - Have on the job site a continuously employed full-time supervising electrician
  - Be available in person, or have a supervising electrician available to meet with the jurisdictional inspector at the job site within two business days following the request.

77

Electrical contractors who have more than one designated continuously employed full-time signing supervising electrician shall assign only one signing supervising electrician responsibility for the work being performed under each valid permit.

When an electrical contractor has only one designated signing supervising electrician, the electrical contractor may not use a different signing supervising electrician until the designated signing supervising electrician has discontinued the signing supervising electrician responsibilities and written notice has been provided to the division.

The electrical contractor shall not continue electrical work until another signing supervising electrician is employed and written notification is provided to the division.

Electrical contractors shall notify the division in writing who their signing supervising electrician(s) is within five days of entering into or termination of that relationship.

78

- Electrical contractors shall notify the division in writing who their signing supervising electrician(s) is within five days of entering into or termination of that relationship.

79

## **Electrical Licensing Requirements**

80

### **Licensing Criteria**

- A License can be:
  - Revoked
  - Cancelled or
  - Suspended
 For any of the following violations:

81

### **Violations:**

A "pattern of conduct" exists under ORS 479.660 if an electrical licensee is assessed civil penalties under the Electrical Safety Law or rules on at least three separate occasions within a three-year period.

A person willfully violates a provision of the Electrical Safety Law or rules if the person knew or should have known of the violation.

A person negligently violates the Electrical Safety Law or rules if the person carelessly or recklessly disregards the requirements.

82

### **Continuing Education:**

- When an electrical license is suspended for any reason, it is necessary for the licensee to continue to comply with continuing education requirements where applicable and to apply for and pay for renewal of the license to prevent cancellation of the license by operation of law.

83

### **Licensing Requirements for Electrical Work**

- No person or entity shall allow any individual to perform electrical work for which the individual is not properly registered or licensed.

84

## Fees

- ▶ An applicant failing to appear for an examination within 90 days from the date of application approval, forfeits the examination fee, even if the applicant notifies the division in advance of the failure to appear.

85

- ▶ The applicant must pay the required license fee no later than 90 days after the division notifies the applicant of a passing score on an examination.
- ▶ If the license fee is not received within 90 days, the application shall be denied and the applicant must reapply and retake the examination.

86

## General Supervising Electrician License

- ▶ A general supervising electrician when working for or as an electrical contractor requiring a signing supervisor may:

87

Direct, supervise, make or control the making of any electrical installation;

Design, plan and lay out work for the customers of the contractor with whom the supervising electrician is continuously employed;

Is the only individual authorized to direct, supervise or control the installation or alteration of an electrical service.

The general signing supervising electrician shall:

- Sign all permits;
- Ensure all electrical installations meet minimum safety standards;

88

It is commonly understood that a general supervising electrician is on the electrical contractor's regular payroll and is available during working hours to carry out the duties of a supervising electrician under this section.

Ensure proper electrical safety procedures are used.

Ensure all electrical labels and permits required to perform electrical work are used and signed.

Ensure electricians have proper licenses for the work performed.

Comply with corrective notices issued by the inspecting authority.

89

Notify the division in writing within five days if the signing supervising electrician terminates the relationship with the electrical contractor, and

Shall not act as a supervising electrician for more than one employer.

If the general supervising electrician leaves the employment of the general electrical contractor or employer, electrical work which requires a general supervising electrician shall not be conducted until a replacement general supervising electrician is employed and written notice designating the supervising electrician is given to the division.

90

## General Journeyman License

A general journeyman:

- Is authorized to make any electrical installation; and
- Shall work under the supervision, direction and control of a general supervising electrician unless doing the type of work that may be supervised, directed or controlled by a person holding a specific limited supervising electrician license, or the type of work requiring no supervision.

91

## Limited Residential Electrician License

A limited residential electrician

- Makes electrical installations on one- or two-family or multi-family dwelling units, not exceeding three floors above grade; and
- Shall work under the supervision, direction and control of a general supervising electrician.

92

## Limited Building Maintenance Electrician

A limited building maintenance electrician

- Is authorized to maintain, repair and replace the following electrical installations required on the premises of commercial office buildings, buildings occupied by the state or a local government entity or facilities designated by the board in electrical systems not exceeding 300 volts to ground

93

## Apprentice

Apprentice

- Assists a journeyman, general supervising electrician, limited renewable energy technician or limited residential electrician
- On the same job site and the same shift in performing electrical work authorized in the trade, or branch of the trade, in which the licensee is indentured

94

## 6500 hour card

6500 hour card

- An apprentice who has over 6500 hours OJT.
- Is in their last year of related training.
- Receives an orange colored apprentice license from BOLI.
- Can work alone for a maximum of 8 hours on any one jobsite.
- May not supervise work.
- Must have an assigned journeyman to contact.
- Journeyman's name necessary on any permit.

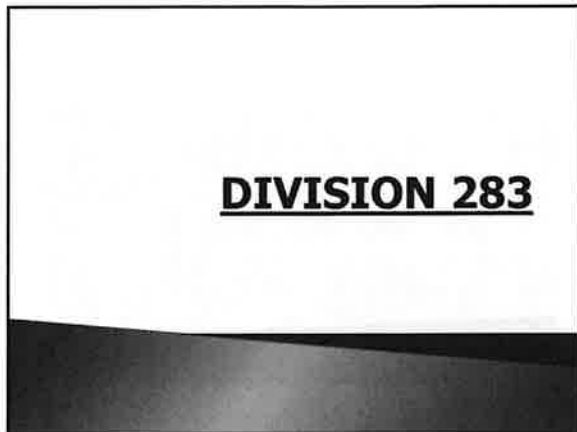
95

## Temporary Apprentice License

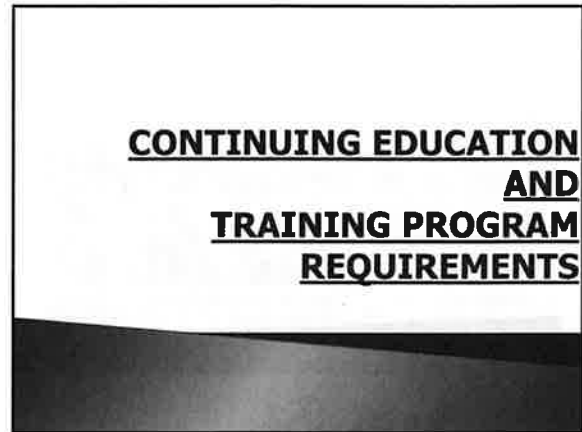
Assists journeymen or general supervising electricians in electrical work within the State of Oregon at a specific job location for a period not exceeding 180 days.

This is only valid for apprentices working in Oregon that are registered in a reciprocal program

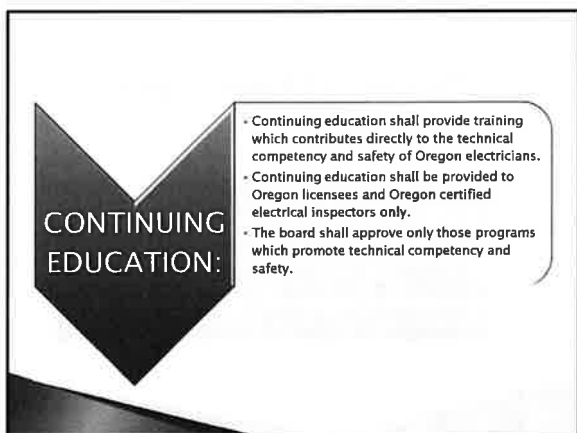
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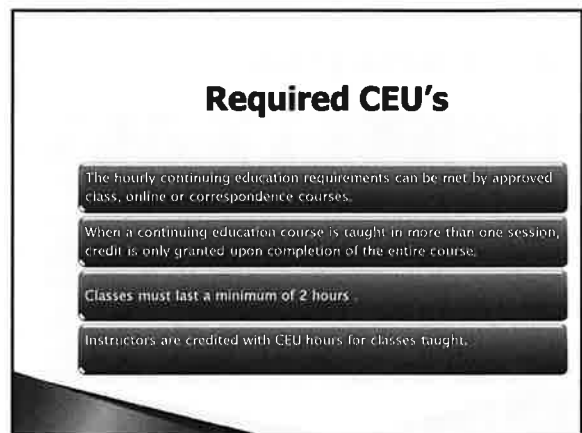
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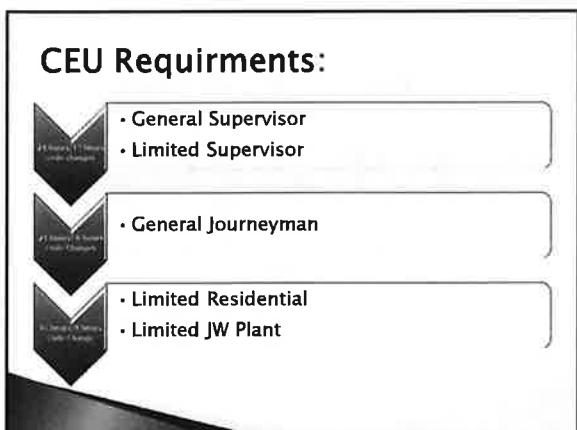
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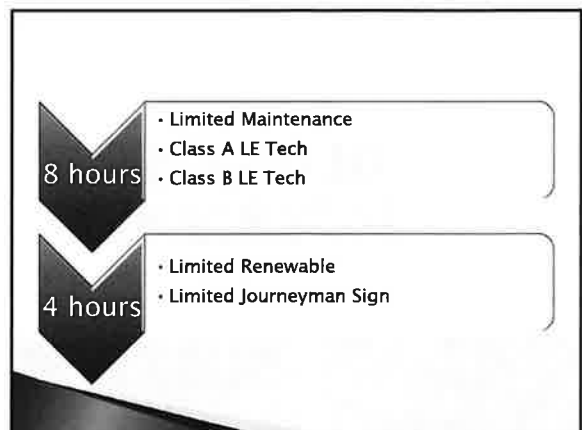
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100



101



102

## New Licensee CEU

New licensees must complete the following continuing education requirements prior to renewal:

No continuing education is required if license is obtained within 6 months of license expiration date; or

The lesser of 8 hours of continuing education or the minimum requirement for the license is required if the license is obtained within 12 months of the license expiration date; or

The lesser of 16 hours of continuing education or the minimum requirement for the license is required if the license is obtained within 24 months of the license expiration date.

New licensees are not required to complete a code-change course.

103

104

## Active Military Duty:

Upon receipt of documentation acceptable to the division, individuals ordered to active military duty for other than training, for a period exceeding 60 consecutive days, shall not be required to comply with the provisions of this rule during the period of active duty.

Following release from active duty, individuals shall complete continuing education requirements acceptable to the division.

Other licensing requirements shall not be waived under this exemption.

## Evidence of Completion

Providers must submit a list of course attendants.

Document course completion.

Provide attendees with proof of completion.

Keep records onsite for 5 years.

105

106

## **DIVISION 307** **ENFORCEMENT**

## Penalty Guidelines

### Scope and Authority.

- This rule sets guidelines for civil penalties for violations of the Electrical Safety Law, ORS Chapter 479, and the rules adopted thereunder, including the Electrical Specialty Code.
- See penalty matrix for proposed fines.

107

108

## **DIVISION 308** **MUNICIPAL** **ADMINISTRATION**

109

### **Employment of Electrical Inspector**

Each municipality shall employ at least one certified electrical inspector to inspect under the Electrical Specialty Code.

This requirement may be satisfied by contracting with another municipality having a qualified inspector.

Regardless of how the staffing is provided the minimum operating requirements in these rules shall also be met.

110

### **Public Contact Procedure**

Each office having electrical inspectors shall publicize and post regular office hours providing at least one hour per day when electrical inspectors are available to take calls and provide interpretations.

A reasonable method to resolve conflicts in code interpretations within the municipality

Provide inspections normally between 7 a.m. and 6 p.m., unless otherwise agreed to by the inspecting authority and the permit holder.

111

### **Compliance**

The municipality shall have a plan on how electrical permit and code violations will be handled.

It shall have an ordinance allowing enforcement actions for violators.

112

## **DIVISION 309** **PERMITS AND FEES**

113

### **Electrical Permits**

The signature of a signing supervising electrician or limited supervising electrician shall be required on each permit to aid inspections by the division and indicate responsibility.

Any person providing false or incorrect information or false or an incorrect signature to obtain a permit may be subject to compliance action by the board.

114



**The following may purchase electrical permits:**

- Electrical contractors
- Registered telecommunications service providers
- telecommunications utilities.

115

- A permit is required prior to start of electrical work.
- Expansion of work under a permit may be added to an existing permit prior to final inspection.
- A permit shall be posted in a conspicuous place near the main electrical panel location.
- If there is no main panel installed, the permit shall be posted in a conspicuous place on the job site.
- An electrical permit issued to one person or firm is not transferable and shall not permit any other person or firm to perform any electrical work thereunder.

116

► Any permittee holding an unexpired permit may apply for an extension of the time within which work may be completed.

117

**Permits shall expire and become null and void if the work authorized by the permit is:**

- Not started within 180 days from the date of permit issuance
- Suspended or abandoned for a period of 180 days after the work is started.
- All corrections to electrical installations must be completed within 20 calendar days of notice of deficiency.
- Corrections to electrical installations must be completed regardless of 180-day suspension or abandonment of work.

118

**Permit Form and Format**

The fees set out in OAR 918-309-0070 are for state permits.

Local jurisdictions may set different fees as authorized by ORS 479.845.

119

**Phased Permitting**

- During the plan review process, an electrical contractor may request a complete or partial permit before the entire plans and specifications are submitted or approved, if adequate information is provided showing compliance with pertinent portions of the code.
- The permittee proceeds at his or her own risk, without assurance that the permit for the entire installation will be granted, or that corrections will not be required, including those portions permitted.
- The partial permit shall allow the electrical contractor to proceed with work pertaining to the electrical system of the structure.
- Any inspections performed by the local jurisdiction on the site or of the ground work shall be counted toward the number of electrical inspections allowed by the full permit once plan review is complete and the permit is issued.

120

### Fees for Bulk Labels:

- (a) Bulk labels sold only to electrical contractors, \$25 per label;
- (b) Contractors working under a bulk label system are billed for any difference in the cost of the bulk label and the cost of the permit fees required in this rule.

121

### Fees in this rule are:

- (a) In addition to any other fees required under ORS 479.510 to 479.855; and
- (b) For up to two inspections per unit except for section (6) of this rule that covers one inspection only.

122

### Volts or Amps?

Fees charged under this rule may not be charged both for amps and volts.

123

### Separately Metered:

In commercial and industrial buildings, separately metered premises that are divided from each other by walls are classified as a separate building for the purpose of computing permit fees. A different permit is required for each separate building:

124

### Single Occupant:

In single occupant buildings, the fee is based on the service (amps), the number of feeders (by amps) and branch circuits;

125

### Tenants:

Where tenants are involved:

the shell receives a permit for any service, feeders and branch circuits that involve only the shell.

Each tenant space requires a separate permit.

Each tenant space is charged for service (amps), the number of feeders by amps and branch circuits.

126

