



Oregon

Kate Brown, Governor

Department of Consumer and Business Services

Building Codes Division

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Electrical and Elevator Board

Thursday, July 23, 2020, 9:30 a.m.

Live audio-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 board meeting minutes of [May 28, 2020](#)
- E. Date of the next regularly scheduled meeting: Sept. 24, 2020

II. Public comment

The division is taking extra precautions for public meetings given concerns regarding the Coronavirus/COVID-19, and is evaluating each meeting on a case by case basis. Board members and appropriate 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 July 22, 2020, at noon. *(Additional instructions are at the end of the agenda).*

III. Reports

- A. Summary of an [enforcement case previously resolved](#) by the division as outlined in the enforcement board report *(No board action required)*
- B. Elevator program update
- C. Electrical program update

IV. Communications – None

V. Appeals – None

VI. Unfinished business - None

VII. New business

- A. Board review and approve the [provisions of the 2021 Oregon Electrical Specialty Code](#) and recommend the Administrator proceed with rulemaking
- B. Board review and approve [draft interim amendments](#) to the 2017 Oregon Electrical Specialty Code for an Oct. 1, 2020, effective date
- C. Board provide the division direction on [electrical apprenticeship math requirements](#)

- D. Review and approve committee recommendations for [new continuing education](#) course and instructor applications

VIII. Announcements - None

XI. Adjournment

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.
- 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.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](#).

This meeting was an audio board meeting
Electrical and Elevator Board
Meeting minutes to include executive session
May 28, 2020

- Audio members:** Heather Miller, journeyman electrician, Chair
Thomas Kyle, electrical contractor, Vice-chair
William (BJ) Barlow, electrical equipment manufacturing rep
Randy Carmony, journeyman elevator installer
Jon Flegel, journeyman electrician
Scott Hall, electrical equipment supplier
Robert McNeill, elevator-manufacturing representative
Vern Palmrose, power and light industry
Ryan Richards, electrical contractor
Randy Smith, electrical inspector
- Members absent:** James Totten, owner/manager of a commercial office building
Vacant, building official
Vacant, commercial underwriter
Vacant, industrial plant employing electricians
Vacant, public member
- Audio staff:** Alana Cox, manager, Policy and Technical Services (PTS)
Keith Anderson, electrical program chief, PTS
Todd Smith, senior stakeholder & public affairs analyst,
Administration
Warren Hartung, elevator program chief, Statewide Services
Tyler Glaze, policy analyst, PTS
Nick Howard, contested case representative, Enforcement Services
Debi Barnes-Woods, boards administrator, PTS
- Guests present:** None

I. Board business

A. Call to order

Chair Heather Miller called Electrical and Elevator Board audio meeting of May 28, 2020, to order at 9:30 a.m.

At this time, the division is taking extra precautions for public meetings given concerns regarding the Coronavirus/COVID-19, and is evaluating each meeting on a case-by-case basis. Because of that, this meeting was held by audio conference.

B. Roll call

James Totten was excused.

The Electrical and Elevator Board has four vacancies: Building official, commercial underwriter, industrial plant representative, and public member.

C. Approval of the amended agenda and order of business

Chair Miller **RULED** the amended agenda and order of business approved.

D. Approval of the board meeting draft minutes of Jan. 23, 2020

Chair Miller ruled the meeting minutes of Jan. 23, 2020, final.

E. Date of the next regularly scheduled meeting: July 23, 2020.

II. Public comment

General public comment was posted to the division website:

1. Final settlement of the [Wittenbergs' civil claims](#)
2. Comments from Stephen Schmiechen on [lighting product](#)

There was no sound or video for the first part of the meeting because of technical issues.

III. Reports

(Separate board action was required for each Proposed Order included in this item)

A. Review of three separate Proposed Orders in consideration of final orders in the Matter of:

- **Dustin M. Hepler**
- **Kyle J. Rood**
- **Alameda Electric**

Tyler Anderson, assistant attorney general, discussed all three cases. He said there is a civil penalty for Dustin Hepler of \$2000; a civil penalty for Kyle J. Rood of \$6000 with revoking his supervisor license once the final order is put in place; and, a civil penalty for Alameda Electric of \$5000 with a 12-month suspension of the business license once the final order is in place.

Vice-chair Kyle suggested that Kyle Rood maintain the business license as long as there are no other violations for a two-year period and all the recommended penalties are paid.

Other members disagreed with the suggestion from the Vice-chair saying that Kyle Rood has been in the industry and knows what is expected from his license.

Until further notice, all agenda items that require a vote will be taken by roll call.

Motion by Vice-chair Kyle to support the division recommendation for Dustin W. Hepler.

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

Motion by Ryan Richards to support the division recommendation for Kyle J. Rood.

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

Motion by Randy Carmony to support division recommendation for Alameda Electric.

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; and Chair Heather Miller.

Nay: Vice-chair Thomas Kyle

Motion carried.

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

Sarah Blam-Linville, contested case representative, said that the Enforcement Section, acting on behalf of the board, entered into consent agreements for three cases since the board's January 23, 2020, meeting. A summary of the consent orders are included for your review.

Motion by Ryan Richards to approve the division recommendations.

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

C. Summary of enforcement cases previously resolved by the division as outlined in the enforcement board report (*No board action required*)

There were no questions or concerns from board members.

D. Elevator program update

Warren Hartung, elevator program chief, Statewide Services, said that nothing has changed other than the fact that no one is traveling so accidents are considerably down.

E. Electrical program update

Keith Anderson, electrical program chief, Policy and Technical Services, said that because of the Coronavirus/COVID-19, the effective date of the next version of the Oregon Electrical Specialty Code is now April 1, 2021. He also said that the renewal date for licenses that were due to renew between April 1, 2020 and Dec. 1, 2020, has been extended to Jan. 15, 2021.

IV. Communications -None

V. Appeals - None

VI. Unfinished business - None

VII. New business

A. Board make a determination for temporary delegation of final order authority for amended consent

Andy Skinner, acting in his interim role as enforcement manager, said that with Governor Brown's issuance of Executive Order (EO) 20-12 in response to the COVID-19 pandemic many Oregonians are facing financial hardship. Final orders sometimes include payment plans requiring a postmark no later than the 25th day of the month. These payment plans cannot be altered without an agreement by the parties and approval of an amended consent order from the board.

Mr. Skinner explained that the temporary delegation of final order authority would only be applicable to requested payment plan adjustments, solely to amend previous board finalized consent orders, and would be in effect until EO 20-12 is terminated by the Governor. The total amount that the individual owes would not change. A person requesting a different total penalty amount would still have to petition the board.

Motion by Vice-chair Thomas Kyle to approve the proposed temporary delegation of final order authority to the Administrator and Deputy Administrator as written in the attached letter of authority.

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

B. Board review request received from Oregon State Association of Electrical Workers and National Electrical Contractors Association to approve a reciprocity agreement with Washington for the general journeyman electrical license

Submitted public comment for this item was posted to the division website and distributed to members to view before and during the board meeting.

<https://www.oregon.gov/bcd/laws-rules/Pages/proposed-rules.aspx>

Todd Smith, senior stakeholder & public affairs analyst, Administration, said that this item was before the board in 2019. Mr. Smith said that one of the main issues then was that in Oregon, the passing test score of 75-percent is required for reciprocity, and in Washington the passing test score is 70-percent. A new agreement was drawn up and the rule amendments align Oregon standards and administrative procedures with Washington standards and administrative procedures, facilitating the ability of the two states to recognize existing licensing and examination standards as equivalent for reciprocity purposes. Mr. Smith said that Larry Vance from the State of Washington was connected to the audio board meeting in case his testimony was needed.

Motion by Vice-chair Thomas Kyle to approve Washington's minimum examination score for reciprocity purposes, including the draft journeyman electrician reciprocal license agreement, and forward the rule to the Administrator for rulemaking and subsequent adoption, with the allowance that additional non-substantive changes may be made to the draft journeyman electrician reciprocal agreement as necessary.

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

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

Policy analyst Tyler Glaze said that this item was amended correcting the number of courses recommended for approval and the number of courses recommended for denial. The corrections were published in red on the memo on the division website.

Mr. Glaze said that the board was to consider all new continuing education applications for instructors and courses the committee reviewed since the committee last met.

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

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

D. Request received from Blue Phoenix Engineering for retro-active approval of instructor Eric Paul Campbell for teaching e-Hazard Electrical Workplace Safety courses

Motion by Vernon Palmrose to approve request received from Blue Phoenix Engineering for retroactive approval for instructor Eric Paul Campbell and to grant continuing education credit to licensed participants in the class if credit is needed.

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

E. Request received from Blue Phoenix Engineering for retro-active approval of courses for e-Hazard Electrical Workplace Safety

Motion by Vernon Palmrose to approve request received from Blue Phoenix Engineering for retroactive approval for safety course and to grant continuing education credit to licensed participants in the class if credit is needed.

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

(The Board Chair read a script announcing the start of executive session at 10:49 a.m.)

VIII. Executive session

Board to review information exempt by law from public inspection – written advice from the board’s legal counsel on two matters. [ORS 192.660\(2\)\(f\)](#)

The audio teleconnection lines for deliberations were disconnected during executive session so the public could not hear. No voting took place during executive session. Once deliberations were complete, the board, legal counsel, and the general public will rejoin the public meeting and voting may take place if required.

(The Board Chair read a script announcing the start of the regular meeting at 11:39 a.m., and reminded the public and members no voting took place during executive session)

IX. Return to Open session

Potential board decision on enforcement case against Michael Cochrane, BCD Case No. 2008-0102, OAH Case No. 800625

All members connected at the start of the meeting were verified with roll call.

Motion by Vice-chair Thomas Kyle to withdrawal the final order on default against Michael Cochrane, BCD Case No. 2008-0102, OAH Case No. 800625

Roll call vote taken

Yea: Randy Smith; Ryan Richards; Vernon Palmrose; Robert McNeill; Scott Hall; Jon Flegel; Randy Carmony; William Barlow; Vice-chair Thomas Kyle; and Chair Heather Miller.

Nay: None

Motion carried unanimously.

X. Announcements - None

XI. Adjournment

Chair Miller adjourned the meeting at 11:39 a.m.

Respectfully submitted by Debi Barnes-Woods, boards administrator/coordinator.

Electrical and Elevator Board Enforcement Report for July 23, 2020

Summary Report - Cases Previously Resolved by Division							
Case #	Name	Violation	Location	Date of Violation	Penalty Assessed	Penalty to Pay	Other Comments
C2020-0015 Russ/Nick	Caltek Communications Inc.	Installation of Cat 6 data cable for an IDF room at a commercial property. <ul style="list-style-type: none"> ●No electrical contractor license ●Allowing unlicensed individuals to perform electrical work 	Clackamas	January 2020	\$5,000	\$5,000	Complaint submitted by industry.

*Total civil penalty assessed for more than one program

**Agenda
Item
VII.A.**

State of Oregon

Board memo

Building Codes Division

July 23, 2020

To: Electrical and Elevator Board

From: Tyler Glaze, Policy Analyst, Policy and Technical Services

Subject: 2021 Oregon Electrical Specialty Code Review Committee recommendation regarding adoption of the 2020 National Electrical Code with amendments

Action requested:

The board review and approve the provisions of the 2021 Oregon Electrical Specialty Code (OESC) and recommend the Administrator proceed with rulemaking.

Background:

At its November 21, 2019, board meeting, the Electrical and Elevator Board established a code review committee, and recommended the 2020 National Electrical Code (NEC) as the model code for Oregon.

The OESC Review Committee completed an analysis of the 2020 NEC changes, existing Oregon code amendments, statewide interpretations, and alternate method rulings. The committee met four times beginning December 18, 2019, finalizing its recommendations to the board on January 22, 2020.

The electronic board packet includes a matrix of the technical model code review committee recommendations, and Table 1-E, which encompasses all of the recommendations of the OESC Review Committee.

Concerns were identified with the language of section 210.8(F) and (G), and the division has worked with committee members to develop an alternate proposal. This alternate language amends section 210.8(F) to encompass the committee's intent regarding the original proposed 210.8(G) section:

210.8 (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 551.70.](#)

Discussion:

The committee recommends that the board adopt the 2021 NEC as the base model code with amendments and forward the code to the Administrator for rulemaking and subsequent adoption. The committee also requests that the board recommend adoption of the low-rise residential electrical provisions of the code to the Residential and Manufactured Structures Board.

Options:

- Approve the proposed code language and amend the committee's recommendation to include the alternate language amending section 210.8(F), removing section 210.8(G) and forward to the Administrator for rulemaking and subsequent adoption, with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources. In addition, recommend that the Residential and Manufactured Structures Board approve the proposed language where it relates to low-rise residential electrical provisions.
- Approve the proposed code language, without the alternate amendments to section 210.8 and forward to the Administrator for rulemaking and subsequent adoption, with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources. In addition, recommend that the Residential and Manufactured Structures Board approve the proposed language where it relates to low-rise residential electrical provisions.
- Amend and approve the proposed code language and forward to the Administrator for rulemaking and subsequent adoption, with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources. In addition, recommend that the Residential and Manufactured Structures Board approve the amended proposed language where it relates to low-rise residential electrical provisions.
- Disapprove the committee's recommendation regarding the proposed code language, which would continue use of the 2017 OESC.

2021 Oregon Electrical Specialty Code
DRAFT
7/23/2020

918-305-0005

Interpretations

All electrical interpretations dated prior to ~~October 1, 2017~~ **April 1, 2021**, issued by the Building Codes Division are withdrawn.

Statutory/Other Authority: ORS 479.730
Statutes/Other Implemented: ORS 479.730

918-305-0100

Adoption of Oregon Electrical Specialty Code

- (1) The Oregon Electrical Specialty Code is adopted pursuant to OAR chapter 918, Division 8.
- (2) Effective ~~October 1, 2017~~ **April 1, 2021**, the ~~2017~~**2021** Oregon Electrical Specialty Code consists of the following:
 - (a) ~~2017~~**2020** Edition of the NFPA 70, National Electrical Code (NEC), and as further amended by the division in OAR 918-305-0105 Table 1-E;
 - (b) 2017 Edition of the IEEE C2-2017, National Electrical Safety Code (NESC); and
 - (c) The electrical provisions of the Oregon Elevator Specialty Code adopted in OAR 918-400-0455.
- (3) In the event of a conflict between the NEC and NESC requirements, the NEC requirement, as amended in subsection (2) of this rule, applies.
- (4) As used in this rule:
 - (a) “ANSI” is the American National Standards Institute;
 - (b) “ASME” is the American Society of Mechanical Engineers;
 - (c) “IEEE” is the Institute of Electrical and Electronics Engineers; and
 - (d) “NFPA” is the National Fire Protection Association.

[Publications: Publications referenced are available from the agency.]

Statutory/Other Authority: ORS 479.730
Statutes/Other Implemented: ORS 479.730

918-306-0005

Standards for Product Evaluations

The following standards shall be adopted for use when completing product evaluation:

- (1) NFPA standards on list dated ~~October 1, 2017~~ **April 1, 2021**, maintained by the division titled “NFPA Standards”; and
- (2) UL standards on list dated ~~October 1, 2017~~ **April 1, 2021**, maintained by the division titled “UL Standards.”

Statutory/Other Authority: ORS 479.730
Statutes/Other Implemented: ORS 479.730

2021 Oregon Electrical Specialty Code

Electrical and Elevator Board - Technical model code review committee

The following is a list of 2020 NFPA 70, National Electrical Code (NEC) changes and existing Oregon amendments to be reviewed by the technical model code review committee. This list will be changed and updated throughout the code adoption process. Abbreviations and markings denote the following:

NEC = Model code change **OR A** = Existing Oregon amendment

No.	Article		Synopsis of change	Notes
ARTICLE 90—INTRODUCTION				
1	90.2	(A)(5)	NEC: Added installations supplying shore power to ships and watercraft and monitoring leakage current within the scope.	Accept NEC
		(A)(6)	NEC: Added installations used to export el. power from vehicle to premises wiring... within the scope.	Accept NEC
2	90.4		OR A: Adds information about requests for special permission and requirements for "Listed" and "Labeled."	Retain amendment
*			BCD: Occupancy. The authority to determine classification occupancy is with the design professional or the jurisdiction. 12/11: Item is tabled to research different ways of addressing the concern, such as a statement in 90.4. 12/18: Committee recommends adding a new section pointing to the OSSC for establishing the occupancy classification.	New amendment
3	All	Cable Ties	OR A: Oregon removes the requirement that cable ties be listed and labeled for securement and support. 12/11: Requested to go over each section pertaining to "listed" cable ties and in section order.	See sections for cable ties
ARTICLE 100—GENERAL				
4	100	Def	NEC: Dormitory Unit. New definition of <i>dormitory unit</i> . 12/11: Committee recommends replacing with the OSSC definition of "dormitory."	Disapprove NEC
5			NEC: Reconditioned. New definition for equipment restored to operating conditions outside the purview of normal servicing or part replacement. NEC prohibits the use of certain recondition equipment. 12/11: Committee requested to review the provisions for reconditioned equipment in order by section. 12/18: Committee recommends adding two informational notes explaining that used equipment inspected, tested, or repaired with listed or recognized component, is not considered to be <i>reconditioned</i> and to see ANSI EERS 2018.	Accept NEC as modified
6			OR A: Adds a definition for Fire Protection System to align with the OSSC.	Retain amendment
*	110.10		OR A: Adds two exceptions to item no. 1.	Retain amendment
7	110.14	(D)	NEC: Revised to put the proper emphasis on the correct torque values through "approved means" instead of "calibrated tool." OR A: It is not required that the permit holder demonstrate compliance with this section.	Accept NEC Retain amendment
*	110.21	(A)(2)	NEC: New informational note to provide guidance on what may be included with the original listing mark. 12/18: Committee recommends adding the two informational notes that were added to the definition of reconditioned. (Item 5)	New amendment
8	110.26	(C)(2)	NEC: New requirement that open equipment doors not impede the entry to or egress from the workspace.	Accept NEC
*	110.26	(D)	OR A: Adds that illumination "of 10 foot candles average, measured at the floor[.]"	Retain amendment

No.	Article		Synopsis of change	Notes
9	110.32		NEC: New provisions for other equipment permitted in the workspace, prohibited storage, and guarding of exposed live parts.	Accept NEC
ARTICLE 200—WIRING AND PROTECTION				
10	210.8	(A)	NEC: Expanded GFCI protection to all 125- through 250-volt-rated receptacles supplied by single-phase circuits rated 150 volts or less to ground.	Disapprove NEC
12		(A)(5)	NEC: Expanded applicability to entire basement area. OR A: Adds that the exception is only applicable where the receptacle is labeled “not GFCI protected.”	Disapprove NEC Retain amendment
13		(A)(11)	NEC: Expanded GFCI protection of receptacles requirement to indoor damp and wet locations.	Disapprove NEC
14		(A)(Exc.)	OR A: Adds an exception to items (A)(2),(5),(6),(7), & (10) that GFCI protection is not required for a single receptacle serving an appliance or a duplex receptacle serving two appliances if the appliance is located within a dedicated space, is not easily moved when in normal use or is fastened in place, is cord-and-plug connected, and the receptacle is labeled as “not GFCI protected.” Adds that these receptacle(s) cannot be considered as meeting 210.52(G). 12/11: Committee recommends retaining as modified by removing unnecessary language: “cord-and-plug connected.”	Retain amendment as modified
15		(A)(Exc.)	NEC: New exception (A) (1-3), (5-8), & (10) to cover locking support and mounting receptacles.	Accept NEC
16		(B)	NEC: Revised requirement on branch circuit voltage rating and specified voltage ratings of receptacles. OR A: Revises this section to “ <i>All 125-volt, single-phase, 15- and 20- ampere receptacles...</i> ”	Retain amendment
17		(B)(2)	NEC: Expanded applicability to other areas in addition to kitchens.	Accept NEC
*		(B)(6)	NEC: Expanded applicability to damp locations in addition to wet locations.. 12/11: Committee recommends accepting the NEC change. 01/15: After further review, the committee recommended to disapprove the code change.	Disapprove NEC
18		(B)(8)	NEC: Expanded applicability to accessory buildings.	Disapprove NEC
19		(B)(10)	NEC: Expanded applicability to entire unfinished area.	Accept NEC
20		(B)(11)	NEC: Expanded GFCI protection of receptacles to laundry areas. **\$ 50 / GFCI receptacles 12/11: Committee recommends adding the exception to 210.8(A)(2), (5), (6), (7), and (10) for a single receptacle serving an appliance or a duplex receptacle serving two appliances if the appliance is located within a dedicated space, is not easily moved when in normal use or is fastened in place and the receptacle is labeled as “not GFCI protected.”	Accept NEC as modified
21		(B)(12)	NEC: Expanded GFCI protection of receptacles to bathtubs and shower stalls. **\$50 / GFCI receptacles	Accept NEC
22		(B)(Exc.)	NEC: New exception (B)(1-5), (8), & (10) for locking support and mounting receptacles.	Accept NEC
23		(C)	OR A: Adds that the requirements apply to outlets in crawl spaces " <i>at or below grade level.</i> " [2017 OESC 210.8(E)]	Retain amendment
24		(D)	NEC: Added new item (D) referring to the list of GFCI requirements for appliances in 422.5(A) and requirement to provide GFCI protection in branch circuits supplying vending machines. [Note: 2017 OESC 210.8(D) moved to 422.5(A)(7)]	Accept NEC
25		(E)	NEC: New requirement on GFCI protection of maintenance receptacles required by 210.63.~ \$ 50 / GFCI receptacles 12/11: Committee recommends adding an exception for receptacles installed indoors in dwelling units.	Accept NEC as modified
26		(F)	NEC: New requirement and exception on GFCI protection of outdoor outlets supplied by single-phase branch circuits rated 150 volts or less to ground, 50 amperes or less.	Disapprove NEC

No.		Article		Synopsis of change	Notes
*	210.8	(G)	<p>01/15: Committee recommends adopting a new amendment requiring GFCI protection for 125-volt through 250-volt receptacles supplied by single-phase branch circuits rated 150-volts or less to ground intended to supply mobile concession stand.</p> <p>01/22: The committee verified the recommended language. 50 amp GFI - \$200.00</p>	New amendment	
27		(Exc.)	<p>OR A: Adds an exception to 210.8(A), 210.8(B), and 210.8(C) for a single receptacle for sewage and sump pumps where the receptacle is labeled as “not GFCI protected.”</p>	See 422.5(A) Item No. 112	
28	210.12	(A)(5)	<p>NEC: Permits all metal raceways and clarifies that all enclosures and conduits bodies shall be metal.</p>	Accept NEC	
29		(B)	<p>OR A: Oregon removes “bathrooms” from the list of locations requiring AFCI protection in dormitory units.</p>	Retain amendment	
30		(C)	<p>NEC: Expands the application to certain areas within nursing homes and limited-care facilities.</p> <p>OR A: Guest Rooms and Guest Suites are not adopted by the State of Oregon</p> <p>12/18: Committee recommends rescinding the amendment and accepting the new model code language.</p> <p>01/15: Committee discussed the section further and agreed to retain the amendment not adopting this section.</p>	Accept NEC Rescind amendment	
31		(D)	<p>NEC: Expands the application to guest rooms and guest suites, and recognizes the six acceptable methods for providing AFCI protection in branch circuits. Specifies that the portion of conductors in equipment enclosures are not counted in determining the maximum permitted conductor length.</p> <p>OR A: Revises the requirements for protection.</p>	Accept NEC in title Retain amendment	
32	210.15		<p>NEC: New requirement to identify types of equipment used in branch circuits that cannot be reconditioned. Those types include: GFCI devices, AFCI devices, and GFP equipment.</p>	Accept NEC	
33	210.52		<p>NEC: Expanded the types of devices that can be used to control receptacle outlets.</p>	Accept NEC	
34		(C)	<p>NEC: Clarifies that the receptacle outlets installed for countertop or work surfaces are not permitted to satisfy the requirement for receptacle outlet placement (wall spacing) as provided in 210.52(A).</p>	Accept NEC	
35		(C)(1)	<p>OR A: Adds that receptacles are not required behind a range, counter-mounted cooking unit, or sink mounted in a corner.</p> <p>12/11: Committee rescinded the amendment because it is no longer necessary.</p>	Rescind amendment	
36		(C)(2)	<p>NEC: Revised how to determine the minimum number of receptacle outlets at peninsular and island countertops and work surfaces and where receptacle outlets are to be located at peninsulas.</p> <p>OR A: Replaces "<i>connected perpendicular wall</i>" with "<i>connecting edge</i>" and changes the long-dimension from 24 inches to 42 inches. [2017 OESC 210.52(C)(3)]</p> <p>12/11: Committee recommends retaining the 2017 OESC requirements within the new 2020 NEC formatting.</p>	Disapprove NEC	
37		(E)(3)	<p>NEC: Specifies at least one 125- volt, 15- or 20-ampere receptacle outlet is now required to be provided for all balconies, decks, and porches that are constructed within 102 mm (4 in.) horizontally of the dwelling unit.</p> <p>OR A: Adds an exception to balconies, decks, and porches: “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.”</p> <p>12/11: Committee recommends retaining the Oregon amendment and adding another exception for decks and porches above-grade level less than 10 ft² “Balconettes and Juliet balconies.”</p> <p>12/18: Committee discussed this section further and revised the exception for decks and porches above-grade level with a depth of 1 ft or less.</p>	Accept NEC Retain amendment as modified	

No.	Article		Synopsis of change	Notes
38		(G)	NEC: Includes “multifamily dwellings” and added an exception to specify when receptacle outlets are required in the garages of multifamily dwellings.	Accept NEC
39	210.52	(I)	OR A: Replaces the “Foyers” section with an “Alcoves” section: "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 feet and a length of not less than 3 feet."	Retain amendment
40	210.63	(A)	OR A: Adds a second exception for replacing existing HVAC equipment with a receptacle outlet that is located on the same level and within 75 feet.	Retain amendment
41	210.65		OR A: Entire section for meeting rooms is not adopted by the State of Oregon. [2017 OESC 210.71]	Retain amendment
42	225.36		OR A: Adds an exception allowing for single light pole installations that have the connections to the light pole circuit in a location accessible only to qualified persons, recognized or certified in-line fuse holders, subject to special permission.	Retain amendment
43	230.40		OR A: Adds to Exception No. 3—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.	Retain amendment
44	230.43		OR A: Adds an exception that Items (13) and (15) are limited to traffic control devices and highway lighting poles.	Retain amendment
45	230.67		NEC: New requirements for surge protection on all services at dwelling units.	Disapprove NEC
46	230.70	(A)(1)	OR A: Adds an exception to readily accessible location requirements of service disconnect means for existing installs.	Retain amendment
47	230.71		NEC: Eliminated more than one service disconnecting means in the same panelboard or other enclosure. The permission for up to six service disconnects is modified to require installation in separate enclosures only.	Disapprove NEC
48	230.85		NEC: New requirement for an emergency disconnect at a readily accessible <i>outdoor</i> location for one- and two-family dwelling units. 12/11: Tabled. 12/18: Recommends retaining 2017 OESC provisions.	Disapprove NEC
49	230.95	(C)	OR A: Revises to "persons having proper training and experience required to perform and evaluate the results of such performance testing," and "signed by the person(s) performing this test,"	Retain amendment
50	240.62		NEC: New section permitting the use of reconditioned low-voltage fuseholders and low-voltage nonrenewable fuses. 12/18: Added to matrix after 12/11 discussion. Committee accepted the NEC change.	Accept NEC
51	240.67	(A)	NEC: Requires documentation specifying the arc flash mitigation method chosen.	Accept NEC
52		(B)	NEC: Sets parameters for fuse with respect to the available arcing current, added one additional arc flash mitigation method.	Accept NEC
53		(C)	NEC: New subdivision to provide requirements for performance testing. 12/11: Committee recommends revising the qualified persons(s) requirements with the 230.95(C) amendments: “<i>persons having proper training and experience required to perform and evaluate the results of such performance testing,</i>” and “<i>signed by the person(s) performing this test,</i>”	Accept NEC as modified
54	240.87	(A)	NEC: Requires documentation specifying the arc flash mitigation method chosen.	Accept NEC
55		(B)	NEC: Sets parameters for the operation of a circuit breaker with respect to the available arcing current.	Accept NEC
56		(B)(5)	NEC: Prohibits temporary adjustment as a means to achieve energy arc reduction.	Accept NEC

No.	Article		Synopsis of change	Notes
57		(C)	NEC: New subdivision to provide requirements for performance testing. 12/11: <i>Committee recommends revising the qualified persons(s) requirements with the 230.95(C) amendments: “persons having proper training and experience required to perform and evaluate the results of such performance testing,” and “signed by the person(s) performing this test.”</i>	Accept NEC as modified
58	240.88	(A)(1)	NEC: New section prohibiting the use of reconditioned molded-case circuit breakers.	Accept NEC
59		(A)(2)	NEC: New section permitting the use of reconditioned low- and medium-voltage power circuit breakers.	Accept NEC
60		(A)(3)	NEC: New section permitting the use of reconditioned high-voltage circuit breakers.	Accept NEC
61		(B)(1)	NEC: New section prohibiting the use of reconditioned low-voltage power circuit breaker electronic trip units.	Accept NEC
62		(B)(2)	NEC: New section permitting the use of reconditioned electromechanical protective relays and current transformers.	Accept NEC
63	240.102		NEC: New section prohibiting the use of reconditioned medium-voltage fuseholders and medium-voltage nonrenewable fuses.	Accept NEC
64	250.24	(A)(1)	OR A: Adds an exception for when an electric utility has installed a ground fault protection system...	Retain amendment
65		(B)	OR A: Adds a third exception for when an electric utility has installed a ground fault protection system...	Retain amendment
66	250.32	(B)(1)	OR A: Adds to exception 1 “existing and new” installations and replaces “previous versions” with the “2005 edition.” 12/18: <i>Committee recommends rescinding the amendment because it is unnecessary and accepting the model code.</i>	Rescind amendment
67	250.52	(A)(3)	OR A: Adds: When an addition 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. 12/18: <i>Committee recommends retaining the amendment and clarifying that the exception applies to where an addition “to a building or structure” is remote for clarification.</i>	Retain amendment as modified
68		(B)	OR A: Adds another item: (4).	Retain amendment
*	250.53	(A)(2)	12/18: <i>Committee recommends adding another exception to the supplemental electrode requirements for temporary services single-phase, 200 amps or less.</i>	New amendment Savings
69	250.64	(B)	NEC: Revised (2) & (3) to require Schedule 80 when PVC is the wiring method employed.	Accept NEC
70	250.94	(A)	OR A: Adds “or an exposed and supported length of #6 bare copper conductor” as an option to the requirement.	Retain amendment
71	250.118		OR A: Requires an equipment grounding conductor within a raceway, sized using 250.112, where metallic conduit is installed on a roof top.	Retain amendment
ARTICLE 300—WIRING METHODS AND MATERIALS.				
72	300.5	(G)	OR A: Permits any approved sealant.	Retain amendment
	300.9		01/22: <i>Added to the matrix with Statewide Alternate Method discussion. Committee recommends adding an exception for interior of raceways up to 8 ft in length installed solely to provide physical protection shall not be considered a wet location.</i>	New amendment
73	311.40		OR A: [Previously 2017 OESC 328.30] Oregon removes the requirement for cable ties to be listed and identified for securement and support.	Retain amendment
74	314.27	(C)	NEC: Requires outlet boxes mounted in ceilings of habitable rooms in dwelling units to be provided with a box listed for ceiling fan support or an outlet box supported independently by structural framing where a ceiling fan may be installed.	Disapprove NEC

No.	Article		Synopsis of change	Notes
75	320.30		OR A: Removes the requirement for cable ties to be listed and identified for securement and support.	Retain amendment
77	330.30		OR A: Removes the requirement for cable ties to be listed and identified for securement and support.	Retain amendment
78	334.12		OR A: Adds another exception to item (2) the installation 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.	Retain amendment
79	334.15	(B)	OR A: Requires that <u>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 or ½-inch drywall.</u> 12/18: Committee recommends retaining the amendment as modified by adding “, or other approved means.”	Retain amendment as modified
80		(C)	OR A: Removes “and crawl spaces” from the requirements.	Retain amendment
81	334.30		OR A: Removes the requirement for cable ties to be listed and identified for securement and support.	Retain amendment
82	336.10		OR A: Revises to “ <u>For generators and HVAC systems.</u> ” 12/18: Committee recommends retaining the as modified by rescinding the added language because it is unnecessary.	Retain amendment as modified
83	337.30		NEC: Requires that cables ties be listed and identified for securement and support.	New amendment
84	338.10	(B)(4)	NEC: Covers ampacity adjustment of cables installed in direct contact with certain types of materials without maintaining spacing between cables.	Accept NEC
85	348.30		OR A: Removes the requirement for cable ties to be listed and identified for securement and support.	Retain amendment
86	350.10	(4)	NEC: New list item to permit higher temperature rated conductors or cables installed in LFMC.	Accept NEC
87	350.30		OR A: Removes the requirement for cable ties to be listed and identified for securement and support.	Retain amendment
88	356.30		OR A: Removes the requirement for cable ties to be listed and identified for securement and support.	Retain amendment
89	362.30		OR A: Removes the requirement for cable ties to be listed and identified for securement and support.	Retain amendment
90	380.12		NEC: New list item to prohibit cord and plug connected.	Accept NEC
91	392.30	(B)(3) (B)(4)	NEC: Added multiconductor cables to (B)(3) and added a new list item (4) requiring cable ties to be listed and identified for the application and for securement and support. 12/18: Committee recommends removing the requirement for cable ties to be listed and identified for securement and support.	Accept NEC New amendment
92	393.14	(A)	NEC: Requires that cables ties be listed and identified for securement and support. 12/18: Committee recommends removing the requirement for cable ties to be listed and identified for securement and support.	New amendment
93	394.12		OR A: Adds an exception that 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.	Retain amendment
ARTICLE 400—EQUIPMENT FOR GENERAL USE.				
94	400.10	(A)	OR A: Adds listed assemblies of fixtures and controllers, approved by the Federal Aviation Administration under uses allowing flexible cords and flexible cables.	Retain amendment
95	400.12	(5)	OR A: Adds second exception to (5) for certain cord sets and power-supply cords. 12/18: Committee recommends retaining the amendment and adding “ <u>In other than Spaces Used for Environmental Air.</u> ”	Retain amendment as modified
96	406.3	(A)	NEC: Added a requirement prohibiting the use of reconditioned receptacles.	Accept NEC

No.	Article		Synopsis of change	Notes
97	406.4	(D)(4)	OR A: AFCI protection is not adopted by the State of Oregon.	Retain amendment
98	406.5	(G)(2)	NEC: Receptacle outlets are prohibited from being installed in the area beneath a sink in the face-up position.	Accept NEC
99	406.7		NEC: New requirement prohibiting reconditioning of attachment plugs, cord connectors, and flanged surface devices.	Accept NEC
100	406.9	(C)	NEC: Revised and added a new exception to cover the area in bathrooms where receptacles cannot be installed. <i>**Major expense</i>	Disapprove NEC
101	406.12		OR A: Items (5) and (6) requiring business offices, corridors, waiting rooms and the like...etc. and the subset of assembly occupancies described in 518.2 are not adopted by the State of Oregon.	Retain amendment
102			NEC: Expanded tamper-resistant receptacle requirements to attached/detached garages and accessory buildings of dwelling units, common areas of multifamily dwelling units, hotels and motels, and assisted living facilities. 12/18: Committee recommends deleting item (8) and retaining the amendment. Minimal cost impact.	Accept NEC as modified
103	406.13		NEC: New requirement for the construction, identification, connecting and disconnecting of single-pole separable connectors.	Accept NEC
104	408.8		NEC: New section addressing the requirements for reconditioned equipment. 12/18: The committee recommends adding “or signing supervisor” for evaluation.	Accept NEC as modified
105		(A)	NEC: New section addressing the specific requirements for Panelboards. 12/18: The committee recommends deleting the last sentence.	Accept NEC as modified
106		(B)	NEC: New section addressing the specific requirements for switchboards and switchgear.	Accept NEC
107	410.7		NEC: New requirement prohibiting reconditioned equipment and the proper application of retrofit kits into existing luminaires.	Disapprove NEC
108	410.69		NEC: New requirement to prohibit the use of conductors with certain insulation colors to be used for luminaire control circuits that share the same wiring compartment with the branch circuit conductors with exception to permit field re-identification of field-connected gray control conductors.	Disapprove NEC
109	410.170		NEC: New Part XVI (410.170-410.188) containing installation requirements unique to horticultural lighting equipment. 12/18: The committee recommends adding “and evaluated in accordance with the UL Product Spec category IFAU.”	Accept NEC as modified
110	411.4		NEC: New requirement prohibiting reconditioning listed low-voltage lighting systems or a those assembled from listed parts	Accept NEC
111		(B)	NEC: Specifies that listed equipment is required to be identified for the specific application.	Accept NEC
112	422.5	(A)	NEC: Expanded the types of appliances and conditions of use where GFCI protection is required, specified the voltage to ground rating of impacted appliances, specified Class A GFCI protection OR A: [See 2017 OESC 210.8(D)] The GFCI protection requirements for outlets supplying dishwashers installed in dwelling unit locations is not adopted by the State of Oregon. 12/18: The committee recommends adding an exception to item (6) from the 2017 OESC 210.8(B) for single receptacles labeled “not GFCI protected.”	Accept NEC as modified
113	422.34		OR A: Adds that unit switches on ranges, ovens and dishwashers shall not be considered the disconnect required by section.	Retain amendment
114	445.6		NEC: New provisions added to require stationary generators of 600 volts and less to be listed. <i>**Statutory Conflict</i>	Disapprove NEC
115	445.18	(C)	NEC: New subdivision to require generators with greater than 15 kW rating be provided with a remote emergency stop switch to shut down the prime mover.	Accept NEC

No.	Article		Synopsis of change	Notes
116		(D)	NEC: New subdivision to require an outdoor emergency generator shutdown device for generators (other than cord-and-plug-connected generators) installed at one- and two-family dwelling units.	Disapprove NEC
	480.7	(B)	NEC: New requirement for battery system disconnecting means on the exterior of one- and two-family dwellings.	Disapprove NEC
117	490.49		NEC: New section addressing the reconditioning of switchgear and parts of switchgear. 12/18: The committee recommends adding “or signing supervisor” for evaluation.	Accept NEC as modified
ARTICLE 500—SPECIAL OCCUPANCIES				
118	500.8	(A)	OR A: Revises to point to ORS 479.760 for the suitability of equipment.	Retain amendment
119	517.10	(B)(3)	OR A: Adds item 3 for health care facilities located in Type B occupancies. NEC: Revision exempts Type B occupancies where specific types of procedures are performed. 01/15: Committee recommends accepting the NEC change as modified by adding the other places indicated in the existing Oregon amendment.	Accept NEC as modified
120	517.13	(A)	NEC: Revised the title to clarify it applies to equipment grounding conductors and relocates Exception No. 2 as a positive Code rule under new list item (4). 01/15: Committee recommends accepting the NEC changes as modified by adding an exception for type PVC conduit underground or embedded in concrete in Dental Clinics located in type B occupancies as established in accordance with the building code with some requirements.	Accept NEC as modified
121	517.17	(D)	NEC: Requires (add) testing to be performed by qualified persons and correlate with testing requirements in 230.95(C). 01/15: Committee recommends accepting the NEC change as modified by replacing “qualified” persons with those having proper training and experience... and a signature on the written record of the person performing the test.	Accept NEC as modified
122	518.6		NEC: New requirement for illumination and new control requirements for working spaces for specific types of equipment installed outdoors. 01/15: Committee recommends disapproving NEC change by not adopting the section.	Disapprove NEC
123	547.5	(G)	NEC: Revised to exempt other than 125-volt, 15- and 20-ampere receptacles from the protection requirements in 210.8(B). OR A: Adds exception for single receptacle.	Accept NEC Retain amendment
124	547.10	(A)	OR A: Adds an exception to (A)(1) & (2) for those designed by a professional engineer... 01/15: Committee recommends retaining the amendment and further modify “where required” to those areas designated by the owner and adding an informational note to see the definition of <i>equipment</i> in Article 100.	Retain amendment New amendment
125	555.35		NEC: Relocated requirements from 555.3 for GFPE requirements Subdivision (A) addresses GFP requirements for shore power receptacles, feeder and branch circuit conductors and GFCI for other than shore power receptacles. Subdivision (B) addresses requirements for current leakage measurement devices. 01/15: Committee recommends accepting the NEC change as modified by adding an exception for modifications to existing systems.	Accept NEC as modified
126	590.4	(G)	NEC: New exception to permit omission of a cover for splices where permanent wiring is used for temporary power.	Accept NEC

No.	Article		Synopsis of change	Notes
127	590.8		<p>NEC: New section for the reuse of overcurrent and service overcurrent protective devices.</p> <p>01/15: Committee recommends accepting the NEC change as modified by removing the unenforceable requirement that the devices be “examined.”</p>	Accept NEC as modified
ARTICLE 600 – SPECIAL EQUIPMENT				
128	600.5	(A)	NEC: Revision to clarify locations not required to be provided with a sign outlet.	Accept NEC
*	600.33	(B)(1)	01/15: Committee recommends adopting an amendment requiring secondary wiring installation to comply with all of 300.4 and not just 300.4(D).	New amendment
129	620.5		OR A: Adds “ <i>Where machine room doors swing inward, the arc of the door shall not encroach on those clearances required by 110.26(A).</i> ”	Retain amendment
130	620.6		NEC: Relocated from 620.85 and revised to specify the conditions where GFCI protection is required for permanently installed sump pumps. 2017 OESC does not require GFCI protection.	Disapprove NEC
131	620.11	(A)	OR A: Adds exception where the provisions are not required by the Elevator code.	Retain amendment
132	620.37	(A)	OR A: Adds: “ <i>Conduits and raceways necessary for the connection of such devices shall only enter hoistways and machine rooms to the extent necessary to connect the devices(s) attached thereto.</i> ”	Retain amendment
133	620.51	(B)	OR A: Adds: “ <i>When 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.</i> ”	Retain amendment
134		(C)	OR A: Provides specific requirements for machine rooms.	Retain amendment
135		(C)(4)	OR A: Provides specific requirements for motor controllers.	Retain amendment
136		(C)(5)	OR A: Provides specific requirements for residential installations.	Retain amendment
137	620.86		OR A: Adds requirements for flexible metal conduit utilized between the disconnecting means and the elevator controller.	Retain amendment
*	625.42		01/22: Added to matrix with Statewide Alternate Method 09-01 discussion. Committee recommends adding an Informational Note pointing to SAM 09-01: <u>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.</u>	New amendment
138	645.2		OR A: Revises the definition to: An information technology equipment system that <u>has been designated by the building owner as requiring</u> continuous operation.	Retain amendment
139	645.10		OR A: Requires that the disconnecting means <u>be grouped and identified and shall be readily accessible at the principal exit doors, or shall</u> comply with either 645.10(A) or (B).	Retain amendment
140	670.6		OR A: Oregon does not adopt section 670.6 for surge protection.	Retain amendment
141	680.4		<p>NEC: New requirement for re-inspection of permanently installed equipment covered within the scope of 680.</p> <p>01/15: Committee recommends not adopting this NEC change.</p>	Disapprove NEC
142	680.14		NEC: Added a definition for corrosive environment and correlated this section by consolidating the requirements into one section and adding the new term.	Accept NEC
143	680.21	(C)	NEC: Expanded GFCI protection requirement to cover more types of swimming pool pump motors and to add exception for listed low-voltage motors. - *Savings	Accept NEC
144		(D)	NEC: New requirement for GFCI protection of replacement swimming pool pump motors.	Disapprove NEC

No.	Article		Synopsis of change	Notes
145	680.42	(B)	OR A: Adds “ <i>or deck</i> ” to the requirement.	Retain amendment
146	682.15		NEC: Revised GFCI protection requirement to include more receptacle ratings and to also include certain outlet ratings. Requirements added for equipment level ground-fault protection of circuits on piers. 01/15: Committee recommends accepting the NEC changes as modified by not adopting 682.15(A) for outlets, and modifying the NEC requirement that feeder and branch-circuit conductors installed on piers be provided with GFP not exceeding 30 mA to “not exceeding 100mA” in alignment with ...	Accept NEC as modified
147	690.12		OR A: Adds that a rapid shutdown function shall be provided where an addition to an existing system is installed. 01/15: Committee recommends retain the amendment as modified by adding that <i>the provisions of 690.12(B)(2) shall not apply to the existing system(s).</i>	Retain amendment as modified
148	690.31	(D)	NEC: Renumbered from 690.31(G) Specifies levels of current and voltage at which conductors must be installed in metal raceways, metal enclosures, or type MC cable, limits to indoor installations, and exception for conductors associated with PV hazard control systems. [2017 NEC 690.31(G)] Deleted requirement covering PV conductors embedded in roofing materials. [2017 NEC 690.31(G)(1)] Specifies marking of PV system wiring methods and enclosures is required where their function is not evident. [2017 NEC 690.31(G)(2)]	Accept NEC
149				
150			OR A: Oregon prohibits embedded circuit conductors in built-up, laminate, or membrane roofing materials in roof areas not covered by PV modules and associated equipment. [2017 OESC 690.31(G)(1)] (No longer necessary)	Rescinded
151			OR A: Adds requirements for beneath roofs and adds an informational note. [2017 OESC 690.31(G)(4)]	
152	690.47		OR A: Oregon specifies that equipment grounding conductors required by 690.47(A) or (B) shall not be smaller than 6 AWG copper or 4 AWG aluminum.	Retain amendment
ARTICLE 700 – SPECIAL CONDITIONS				
153	700		OR A: Adds an introductory paragraph requiring building officials and inspectors administering and enforcing the state building code under ORS 455.148 and 455.150, to ensure compliance with Sections 700.28, 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.	Retain amendment
154	700.3	(F)	01/15: Added to matrix during the discussion: Committee recommends a new amendment requiring these provisions only where the building owner deems necessary.	New amendment
155	700.5	(C)	NEC: Now prohibits the use of reconditioned automatic transfer switches.	Accept NEC
156	700.32		OR A: Adds selective coordination information and an exception.	Retain amendment
157	701.5	(A)	NEC: New requirement covering the use of meter-mounted transfer switches for legally required standby systems.	Accept NEC
158	701.32		OR A: Adds selective coordination requirements and an exception. [2017 OESC 701.27]	Retain amendment
159	702.4	(B)(2)	OR A: Adds an exception permitting manual management of the connected load in one- and two-family dwellings.	Retain amendment
160	702.7	(A)	NEC: Requires marking at commercial and industrial installations only and to add requirement on the location of, and necessary information on, the sign at one- and two-family dwellings. 01/15: Committee recommends disapproving the NEC change and retain the 2017 OESC provisions.	Disapprove NEC New amendment
161	708.1		OR A: Oregon amends the language for critical operations.	Retain amendment
162	708.54		OR A: Adds selective coordination requirements.	Retain amendment

No.		Article	Synopsis of change	Notes
163	712.10	(B)	NEC: Requires an ID plaque or directory identifying the disconnecting means location for all power sources for a building.	Accept NEC
164	725.24		OR A: Oregon requires the installation to comply with all of 300.4 and 300.11. 1/15: The NEC now aligns with the requirement to comply with all of 300.4, but the committee recommends retaining the requirement to comply with all of 300.11.	Retain amendment as modified
165	760.24		OR A: Oregon requires the installation to comply with all of 300.4 and 300.11. 1/15: The NEC now aligns with the requirement to comply with all of 300.4, but the committee recommends retaining the requirement to comply with all of 300.11.	Retain amendment as modified
166	760.41		OR A: Oregon removes requirement to be accessible only to qualified personnel.	Retain amendment
167	760.121		OR A: Oregon removes requirement to be accessible only to qualified personnel.	Retain amendment
168	770.24		OR A: Oregon requires the installation to comply with all of 300.4 and 300.11. – No longer necessary / Aligns with NEC.	Rescinded
169	770.48		OR A: Adds Electrical Nonmetallic Conduit (ENT) to the list of raceways.	Retain amendment
ARTICLE 800 – COMMUNICATION SYSTEMS				
170	800.24		OR A: Oregon requires the installation to comply with all of 300.4 and 300.11. – No longer necessary / Aligns with NEC.	Rescinded
171	820.24		OR A: Oregon requires the installation to comply with all of 300.4 and 300.11. – No longer necessary / Aligns with NEC.	Rescinded
STATEWIDE ALTERNATE METHODS				
172	110.3	(B)	08-02 – Underground Splicing of Equipment Grounding Conductors for Traffic Signal Installations	Retain SAM
173	300.9		08-03 – NMB cable in outdoor conduit sleeves 01/22: Add to Section 300.9: <i>Exception: The interior of raceways up to 8 ft in length installed solely to provide physical protection shall not be considered a wet location.</i>	Rescind SAM
174	625.42		09-01 – Use of a demand factor table for calculating electrical vehicle charging equipment services and feeders 01/22: Add to Section 625.42: <i>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.</i>	Retain SAM / New amendment
STATEWIDE CODE INTERPRETATIONS				
175	110.26		08-02 – Appliance Access – Attic and Underfloor (ORSC)	Retain
176	230/250		15-02 – Service Requirements for Meter Bases on Poles or Posts	Retain
177	250		19-04 – Bonding of Piping Systems and Exposed Structural Metal – No longer necessary	Rescind
178	250.104		08-04 – Bonding of Corrugated Stainless Steel Tubing	Retain
179	250.130		15-01 – Grounding Frames of Ranges and Clothes Dryers from Existing Branch Circuits	Retain
180	422.31		09-01 – HVAC System Disconnect Requirements	Retain
181	547		19-03 – Application of Article 547 in Agricultural Buildings	Rescind

Language formatting denotes the following:

Blue underline or Red ~~striethrough~~ = New Oregon amendment

Black underline or ~~striethrough~~ = Existing Oregon amendment

Highlighted = New model code language

DRAFT 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.

90.4 Enforcement. ...

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.

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.

100 Dormitory. 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. *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)*

Reconditioned. 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 *rebuilt*, *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.

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

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.

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.

110.21 (A)(2) Reconditioned Equipment. ...

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.

110.24 (A) Field Marking. ...

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.

(B) Modifications. ...*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.*

110.26 (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.

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.

(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.

110.31 (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.

110.33 (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.

210.8

Ground-Fault Circuit-Interrupter Protection for Personnel. Ground-fault circuit-interrupter protection for personnel shall be provided as required in 210.8(A) through (E) and (G). 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.

(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)(~~11-10~~) ~~and supplied by single-phase branch circuits rated 150 volts or less to ground~~ shall have ground-fault circuit-interrupter protection for personnel.

(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).

Exception to (2),(5),(6),(7),(10): 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).

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

(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.

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

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

(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.”*

(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.

(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.

210.8 **(F) Outdoor Outlets.** ~~Not adopted by the State of Oregon. All outdoor outlets for dwellings, 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.~~

~~Exception: Ground fault circuit interrupter protection shall not be required on lighting outlets other than those covered in 210.8(C).~~

(G) Mobile Concession Stands. All 125-volt through 250-volt receptacles supplied by single-phase branch circuits rated 150-volts or less to ground, 50 amperes or less, intended to supply a mobile food cart or concession stand shall have ground-fault circuit-interrupter protection for personnel.

210.12 **(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):

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.*

(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).

(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).~~

(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 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.

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 m² (9 ft²), or fraction thereof, of the countertop or work surface. ~~A receptacle outlet shall be provided for every additional 1.7 m² (18 ft²), 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.~~

210.52 (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...

(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.

~~**(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 m² (60 ft²) 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.

210.63 (A) Heating, Air Conditioning, and Refrigeration Equipment Outlet.

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.

210.65 Meeting Rooms. Entire section: Not adopted by the State of Oregon

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.

230.40 Number of Service-Entrance Conductor Sets. ...

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 under-ground 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.

230.43 Wiring Methods for 1000 Volts, Nominal, or Less. ...

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

230.67 Surge Protection. Entire section: Not adopted by the State of Oregon

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.

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:

- (1) Power monitoring equipment
- (2) Surge-protective device(s)
- (3) Control circuit of the ground-fault protection system
- (4) Power-operable service disconnecting means

(B) Two to Six Service Disconnecting Means. Entire section: Not adopted by the State of Oregon.

(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.

230.85 Emergency Disconnects. Entire section: Not adopted by the State of Oregon.

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.

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.

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.

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.

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.

250.52 (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.

(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.

250.53 (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.

250.94 (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:...

250.118 Types of Equipment Grounding Conductors. ...

(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.

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.~~

300.9 Raceways in Wet Locations Abovegrade. Where raceways are installed in wet locations abovegrade, the interior of these raceways shall be considered to be a wet location. Insulated conductors and cables installed in raceways in wet locations abovegrade 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.

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.

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 ~~comply 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~~

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.

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.

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.

334.15 (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.

~~(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.

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 ½ 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.

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- 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. ...~~
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- 337.30 Securing and Supporting.** Type P cable shall be supported and secured by 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.
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- 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 (4½ ft). ~~Where used, cable ties shall be listed and be identified for securement and support.~~
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- 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 (4½ ft). ~~Where used, cable ties shall be listed and be identified for securement and support.~~
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- 356.30 356.30 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.~~
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- 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.~~
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- 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.~~
-
- 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.
-
- 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.*
- (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.*
-

400.10 (A)(12) Listed assemblies of fixtures and controllers, approved by the Federal Aviation Administration.

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).

406.4 (D)(4) **Arc-Fault Circuit Interrupter Protection.** Not adopted by the State of Oregon.

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.

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~~
-

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.~~

408.36 **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.

Exception 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. 3: For existing panelboards, individual protection shall not be required for a panelboard used as service equipment for an individual residential occupancy.

410.7 **Reconditioned Equipment.** Not adopted by the State of Oregon.

410.69 **Identification of Control Conductor Insulation.** Not adopted by the State of Oregon.

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.

422.5 (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~~

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.

445.6 **Listing (Generators).** Entire section: Not adopted by the State of Oregon.

445.18 (D) **Emergency Shutdown in One- and Two-Family Dwelling units.** Not adopted by the State of Oregon.

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.

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.

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.

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.

~~(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 12.00.02, Certificate Standard for AEx Equipment for Hazardous (Classified) Locations.~~

517.10 (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](#)

517.13 (A) Wiring Methods. ...

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).

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.

518.6 Illumination. ~~Not adopted by the State of Oregon. 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.~~

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.

547.10 (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.](#)

555.35 (A)(3) Feeder and Branch-Circuit Conductors with GFPE. ...

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.

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.~~

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)~~.

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.

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

620.5 Working Clearances. ...

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).

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.

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).*

620.37 (A) Uses Permitted. ...

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.

620.51 (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.

(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.

(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.

620.51 (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.

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.

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.

625.42 Rating. ...

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.

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).

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

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

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

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.

680.42 (B) Bonding. [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.

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).

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. ...

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.

700.3 (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 ...

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.

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.

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.

***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.*

702.4 (B)(2) Automatic Transfer Equipment. ...

***Exception:** In one- and two-family dwellings manual management of the connected load shall be permitted.*

702.7 (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).~~

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~~ 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. ~~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.

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.

***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.*

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.

760.24 (A) [Mechanical Execution of Work] 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.

760.41 (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.

760.121 (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.

770.48 (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)
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State of Oregon

Board memo

Building Codes Division

July 23, 2020

To: Electrical and Elevator Board

From: Keith Anderson, electrical program chief, Policy and Technical Services

Subject: 2017 OESC Interim Amendments

Action requested:

Electrical and Elevator Board review and consideration of recommended interim amendments to the 2017 Oregon Electrical Specialty Code (OESC).

Background:

Due to the impacts of COVID-19, and to remain aligned with the other codes, adoption of the OESC has been delayed to April 1, 2021.

Based on stakeholder feedback and review of the proposed 2021 OESC, a limited package of provisions were identified for possible early adoption, to be effective October 1, 2020. Provisions are limited to items that will clarify ongoing confusion or address inconsistent code application. These are proposed to be interim amendments to the 2017 OESC.

250.53(A)(2) Supplemental Electrode Required. ...

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 amp or less temporary service.

517.13(A) Wiring Methods. ...

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).

700.3(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 ...

The division would also like to solicit feedback from the board about the fiscal impact of these provisions. After initial consultation with industry, the division received responses that Sections 250.53(A)(2) would result in cost savings of \$100 per installation, 517.13(A) would result in cost savings of \$1,500 per installation, and 700.3(F) would result in a potential cost savings of \$10,000 or more per installation depending on the specific details of each installation.

Options:

- Approve the proposed amendments to the 2017 OESC, and forward to the Administrator for rulemaking and subsequent adoption, with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.
- Amend and approve the proposed amendments to the 2017 OESC, and forward to the Administrator for rulemaking and subsequent adoption, with the finding that the added cost, if any, is necessary to the health and safety of the occupants or the public or necessary to conserve scarce resources.
- Disapprove the proposed amendments of the 2017 OESC.

Amendments to the 2017 OESC
Draft for discussion purposes only
7/23/20

918-305-0105

Amendments to the Oregon Electrical Specialty Code

(1) The Oregon Electrical Specialty Code is amended pursuant to OAR chapter 918, division 8. Amendments adopted during the code-cycle for inclusion into the Oregon Electrical Specialty Code are placed in this rule, showing the section reference and a descriptive caption. Amendments to the Oregon Electrical Specialty Code are printed in their entirety in Table 1-E.

(2) Effective October 1, 2020, the Oregon Electrical Specialty Code Section 250.53(A)(2) is amended to not require a supplemental electrode in certain temporary electrical service installations.

(3) Effective October 1, 2020, the Oregon Electrical Specialty Code Section 517.13(A) is amended for allowance of additional wiring methods in certain type B occupancies.

(4) Effective October 1, 2020, the Oregon Electrical Specialty Code Section 700.3(F) is amended for allowance of building owner discretion in the requirement of temporary power sources for alternate source of power maintenance or repair.

[Publications: Publications referenced are available for review at the division. See division website for information on where to purchase publications.]

Statutory/Other Authority: ORS 479.730

Statutes/Other Implemented: ORS 479.730

State of Oregon

Board memo

Building Codes Division

July 23, 2020

To: Electrical and Elevator Board

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

Subject: Electrical Apprenticeship Math Requirements

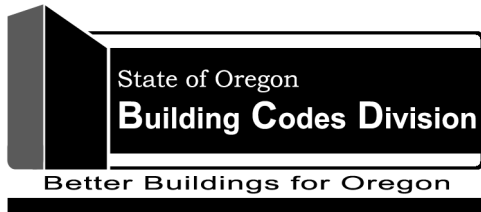
OAR 918-282-0270 requires that applicants for apprenticeship provide transcripts demonstrating at least a “C” letter grade in certain math classes. The Oregon Department of Education, however, has issued requirements that schools only give “pass/fail” grades instead of letter grades for the duration of the COVID-19 school closure. Students who received a “pass” during the school closure will have that grade permanently on their transcripts. This could impact apprenticeship applicants for several years, as it could include math classes taken before the applicant’s senior year in high school.

On June 23, 2020, the division adopted a temporary rule to address the immediate impacts of this change for current apprenticeship applicants. The division would like feedback on addressing this issue as a permanent rule because it will impact students beyond the 6 month limit of the temporary rule.

The board could take several approaches to this rule if it so chooses. One approach could narrow the scope of the rule so that only students impacted by the COVID-19 school closures would be allowed to qualify with “passing” grades. The broader approach would be to adopt the temporary rule as a permanent rule, which would permanently allow “passing” grades instead of “C” letter grades to receive credit in general going forward. Regardless of the approach taken, applicants will still have the option to take a placement exam at a community college.

Options

- Direct the division to draft a rule to present to the board that would be narrow in scope, only applying to students impacted by COVID-19 school closures.
- Direct the division to draft a rule to present to the board that would be broader in scope, allowing a passing grade in relevant math courses for all applicants going forward.
- Direct the division to take another approach to address the issue (please describe the desired approach).



Temporary Rule
June 23, 2020

Electrical Apprenticeship
Math Grade Requirement

Purpose of the rule:

Due to the Coronavirus/COVID-19 school closures, the Oregon Department of Education issued guidance that required schools to only issue “pass/incomplete” grades to students for coursework completed during the Coronavirus/COVID-19 school closure. Letter grades were not allowed to be given. This rule will allow individuals with “pass” grades meet education requirements to apply for electrical apprenticeship programs.

Citation:

Amend: OAR 918-282-0270

This rule is effective June 23, 2020

Background:

Oregon Administrative Rule (OAR) 918-282-0270 requires applicants for electrical apprenticeship to provide transcripts demonstrating at least a “C” letter grade in certain math classes. The Oregon Department of Education issued guidance that required schools to only issue “pass/incomplete” grades to students for coursework completed during the Coronavirus/COVID-19 school closure. Letter grades were not allowed to be given. This rule will allow individuals with “pass” grades for certain math classes to meet education requirements for electrical apprenticeship programs.

Effect:

This rule will allow individuals to qualify for apprenticeship programs with “pass” grades for certain math classes.

Contact:

If you have questions or need further information, contact division licensing staff at license.bcd@oregon.gov or 503-373-1268.



OFFICE OF THE SECRETARY OF STATE
BEV CLARNO
SECRETARY OF STATE

JEFF MORGAN
INTERIM DEPUTY SECRETARY OF STATE



ARCHIVES DIVISION
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TEMPORARY ADMINISTRATIVE ORDER
INCLUDING STATEMENT OF NEED & JUSTIFICATION

BCD 11-2020
CHAPTER 918
DEPARTMENT OF CONSUMER AND BUSINESS SERVICES
BUILDING CODES DIVISION

FILED
06/23/2020 9:13 AM
ARCHIVES DIVISION
SECRETARY OF STATE
& LEGISLATIVE COUNSEL

FILING CAPTION: Electrical Apprenticeship Math Grade Requirement

EFFECTIVE DATE: 06/23/2020 THROUGH 12/19/2020

AGENCY APPROVED DATE: 06/22/2020

CONTACT: Shannon Flowers
503-378-2833
shannon.m.flowers@oregon.gov

1535 Edgewater Street NW
Salem, OR 97309

Filed By:
Shannon Flowers
Rules Coordinator

NEED FOR THE RULE(S):

OAR 918-282-0270 requires that applicants for apprenticeship provide transcripts demonstrating at least a "C" letter grade in certain math classes. The Oregon Department of Education issued guidance that required schools to only issue "pass/incomplete" grades to students for coursework completed during the Coronavirus/COVID-19 school closure. Letter grades were not allowed to be given.

JUSTIFICATION OF TEMPORARY FILING:

Without this temporary rule amendment, students who were unable to receive letter grades in math classes during the COVID-19 school closure would be unable to meet electrical apprenticeship application requirements. Those impacted people will be unfairly disadvantaged, and a rule change is justified to allow them the opportunity to apply for electrical apprenticeships.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

Rules are available from the division's rules coordinator located at 1535 Edgewater St. NW, Salem, Oregon, 97304 and are available on the division's web site: <https://www.oregon.gov/bcd/laws-rules/Pages/adopted-rules.aspx>.

HOUSING IMPACT STATEMENT:

No impact to housing cost expected - no housing impact statement necessary

AMEND: 918-282-0270

RULE TITLE: Apprentices

RULE SUMMARY: Due to the Coronavirus/COVID-19 school closures, the Oregon Department of Education issued guidance that required schools to only issue "pass/incomplete" grades to students for coursework completed during the Coronavirus/COVID-19 school closure. Letter grades were not allowed to be given. This rule amendment will allow individuals with "pass" grades meet education requirements to apply for electrical apprenticeship programs.

RULE TEXT:

(1) An apprentice:

(a) Shall meet the following minimum requirements:

(A) General journeyman, Class A limited energy technician and Class B limited energy technician:

(i) Be 17 years of age to apply, 18 years of age to be registered;

(ii) Have a high school diploma, GED, or international equivalency; and

(iii) Have one-year high school algebra, integrated math 2 or its equivalent, with a grade of "Pass", "C" or better, or equivalent community college mathematics placement test results.

(B) Limited journeyman manufacturing plant, limited maintenance, limited journeyman sign, limited journeyman stage and limited renewable energy technician:

(i) Be 17 years of age to apply, 18 years of age to be registered;

(ii) Have a high school diploma, GED or international equivalency; and

(iii) Have one-year high school mathematics with a passing grade, or equivalent community college mathematics placement test results;

(C) Limited residential:

(i) Be 17 years of age to apply, 18 years of age to be registered;

(ii) Have a high school diploma, GED, or international equivalency; and

(iii) Have one-year high school algebra, integrated math 2 or its equivalent, with a grade of "Pass", "C" or better, or one-year high school math and completion of an algebra course as part of an approved apprenticeship program, with a grade of "Pass", "C" or better, or equivalent community college mathematics placement test results.

(b) Shall be licensed;

(c) May assist an appropriately licensed 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 registered; and

(d) Shall not perform electrical work under a person holding a letter of authority card issued to State of Oregon employees.

(2) Apprentice licenses issued under sections (3)(a), (4), or (5) of this rule are issued and renewed by the Oregon Bureau of Labor and Industries according to standards established in this rule and the guidelines established by the Bureau of Labor and Industries and the Building Codes Division.

(3) Electrical apprentice licenses:

(a) Shall be issued to individuals registered in formal electrical apprenticeship programs recognized by the board and the Oregon Bureau of Labor and Industries under ORS Chapter 660; and

(b) May be issued to trainees enrolled in individually approved, employer-sponsored training programs leading to the limited journeyman license in OAR 918-282-0190. Individuals enrolled in these programs may be issued an electrical apprentice license only if the employer's program is approved by the board.

(4) Reciprocal electrical apprentice licenses shall be issued to individuals currently registered in an approved apprenticeship program outside Oregon in a state that is party to the state apprenticeship reciprocal agreement.

(5) Notwithstanding subsection (1)(c) of this rule, a final period apprentice licensed under sections (3)(a) or (4) of this rule that meets the requirements of this section and the Bureau of Labor and Industries may be issued an indirect supervision electrical apprentice license, allowing the apprentice to work under indirect supervision at the discretion of the responsible supervisor. A license under this section may be issued to:

(a) A final period apprentice in an 8,000 hour apprenticeship program with at least 6,500 hours of on-the-job training, allowing the apprentice to work under indirect supervision on projects not exceeding eight hours duration and limited to 300 volts phase to phase or phase to ground; or

(b) A final period apprentice in a 6,000 hour apprenticeship program with at least 5,000 hours of on-the-job training, allowing the apprentice to work under indirect supervision on projects not exceeding eight hours duration that are otherwise within the scope of the apprentice's license.

STATUTORY/OTHER AUTHORITY: ORS 479.730

STATUTES/OTHER IMPLEMENTED: ORS 479.730

State of Oregon

Board memo

Building Codes Division

July 23, 2020

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 July 9, 2020. The committee reviewed 52 applications from 15 organizations:

- 23 courses were recommended for approval.
- 6 courses were recommended for denial.
- 18 instructors were recommended for approval.
- 5 instructors were recommended for denial.

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
July 23, 2020**

Courses

	Applicant	Course Name	Committee Recommendation	Board Action
1	BlueVolt	2020 NEC Code Changes – Part 1 8 hours CC:MC Only	Approve for 2020 Code Cycle	
2	BlueVolt	2020 NEC Code Changes – Part 2 8 hours CC:MC Only	Approve for 2020 Code Cycle	
3	ElecTrain	NEC Application and Review 8 hours CR	Approve for 2020 Code Cycle	
4	ElecTrain	NEC Code Update 2020 8 hours CC:MC Only	Approve for 2020 Code Cycle	
5	ElecTrain	NFPA 70E 8 hours CR	Approve for 2020 Code Cycle	
6	Independent Electrical Contractors of Oregon	2020 NEC Code Update Limited Energy 8 hours CC:MC Only	Approve for 2020 Code Cycle	
7	Independent Electrical Contractors of Oregon	Grounding and Bonding – 8 hours 8 hours CR	Approve for 2020 Code Cycle	
8	Independent Electrical Contractors of Oregon	2020 NEC Code Change – 4 hour 4 hours CC:MC Only	Approve for 2020 Code Cycle	
9	Independent Electrical Contractors of Oregon	2020 NEC Code Change – 8 hour 8 hours CC:MC Only	Approve for 2020 Code Cycle	
10	Independent Electrical Contractors of Oregon	2020 NEC Code Change – 12 hour 12 hours CC:MC Only	Approve for 2020 Code Cycle	
11	Wattstopper/Legrand	2019 Oregon Zero Energy Ready Code 2 hours CR	Deny	
12	Lightwave Learning, LLC	2020 Code Change I 4 hours CC:MC Only	Deny	
13	Lightwave Learning, LLC	2020 Code Change II 4 hours CC:MC Only	Deny	

14	Lightwave Learning, LLC	2020 Code Change III 4 hours CC:MC Only	Deny	
15	Lightwave Learning, LLC	2020 Grounding & Bonding 4 hours CC:MC Only	Deny	
16	Lightwave Learning, LLC	2020 Residential 4 hours CC:MC Only	Deny	
17	RedVector.com, LLC	Oregon Electrician 2020 NEC Changes: 2 Hour Program #1 (RV-PGM198) 2 hours CC:MC Only	Approve for 2020 Code Cycle	
18	RedVector.com, LLC	Oregon Electrician 2020 NEC Changes: 2 Hour Program #2 (RV-PGM199) 2 hours CC:MC Only	Approve for 2020 Code Cycle	
19	RedVector.com, LLC	Oregon Electrician 2020 NEC Changes: 2 Hour Program #3 (RV-PGM200) 2 hours CC:MC Only	Approve for 2020 Code Cycle	
20	Reliance Electric, Inc.	2020 NEC Code Changes 16 hours CR	Approve for 2020 Code Cycle	
21	Rob Cochran	2020 Code Change for Supervising Electricians 12 hours CC:MC Only	Approve for 2020 Code Cycle	
22	The Media Factory, Inc.	Analysis of Changes 2020 NEC – Part 1 – Code-Wide, Chapters 1 and 2 4 hours CC:MC Only	Approve for 2020 Code Cycle	
23	The Media Factory, Inc.	Analysis of Changes 2020 NEC – Part 2 – Chapters 3 and 4 4 hours CC:MC Only	Approve for 2020 Code Cycle	
24	The Media Factory, Inc.	Analysis of Changes 2020 NEC – Part 3 – Chapter 5 through Article 682 4 hours CC:MC Only	Approve for 2020 Code Cycle	
25	The Media Factory, Inc.	Analysis of Changes 2020 NEC – Part 4 – Article 690 through Chapter 9 4 hours CC:MC Only	Approve for 2020 Code Cycle	
26	Chester Garrett	Electrical Theory 4 hours CR	Approve for 2020 Code Cycle	
27	Applied Electrical Training	Limited Electrician Code Discussion – Wiring Methods 4 hours CR	Approve for 2020 Code Cycle	
28	Adaptability for Life	Limited Electrician Code Discussion – Wiring Methods 4 hours CR	Approve for 2020 Code Cycle	

29	Adaptability for Life	Supervisor Test Prep Package 8 CR, 4 ORLC, 12 CC:MC Only	Approve for 2017 Code Cycle	
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Instructors

	Applicant	Committee Recommendation	Board Action
1	Bill Hamilton Central Electric JATC	Approve for 2020 Code Cycle	
2	Robert Salle Central Electric JATC	Approve for 2020 Code Cycle	
3	Chad Privratsky Central Electric JATC	Approve for 2020 Code Cycle	
4	Dave Baker Central Electric JATC	Approve for 2020 Code Cycle	
5	Greg Creal Central Electric JATC	Approve for 2020 Code Cycle	
6	Mike Murphy Central Electric JATC	Approve for 2020 Code Cycle	
7	Jennifer “Nicki” Halin Central Electric JATC	Approve for 2020 Code Cycle	
8	Ralph Golf Central Electric JATC	Approve for 2020 Code Cycle	
9	Ray Knerl Central Electric JATC	Approve for 2020 Code Cycle	
10	Raymond “Tye” Winegar Central Electric JATC	Approve for 2020 Code Cycle	
11	Russell McAdams Central Electric JATC	Approve for 2020 Code Cycle	
12	Taunia Blakely Central Electric JATC	Approve for 2020 Code Cycle	
13	Todd Washington Central Electric JATC	Deny	
14	Wendell Whistler Central Electric JATC	Approve for 2020 Code Cycle	
15	Andrew Olsen	Deny	

	ElecTrain		
16	Jennifer Martin ElecTrain	Approve for 2020 Code Cycle	
17	Dave Gilson Independent Electrical Contractors of Oregon	Approve for 2020 Code Cycle	
18	Joseph Gohn Wattstopper/Legrand	Deny	
19	Ryan Mayfield OSEIA	Deny	
20	Ryan Jackson RedVector.com, LLC	Deny	
21	Daniel Brian House Reliance Electric, Inc.	Approve for 2020 Code Cycle	
22	Rob Cochran	Approve for 2020 Code Cycle	
23	Tim Linge Tradesmen Electric	Approve for 2020 Code Cycle	