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PERMANENT ADMINISTRATIVE RULES

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I certify that the attached copies are true, full and correct copies of the PERMANENT Rule(s) adopted on Upon filing, by the

Department of Consumer and Business Services, Building Codes Division	918
Agency and Division	Administrative Rules Chapter Number
Holly A. Tucker	(503) 378-5331
Rules Coordinator	Telephone
PO Box 14470, Salem, OR 97309-0404	
Address	

To become effective 10/01/2014 Rulemaking Notice was published in the June 2014 Oregon Bulletin.

RULE CAPTION

Adopts 2014 Oregon Electrical Specialty Code

Not more than 15 words that reasonably identifies the subject matter of the agency's intended action.

RULEMAKING ACTION

Secure approval of new rule numbers with the Administrative Rules Unit prior to filing.

ADOPT:

AMEND:

918-251-0090, 918-305-0005, 918-305-0030, 918-305-0100, 918-305-0105, 918-306-0005, 918-306-0010, 918-309-0070, 918-309-0080, 918-309-0100

REPEAL:

918-251-0000, 918-261-0010

RENUMBER:

AMEND AND RENUMBER:

Statutory Authority:

ORS 479.630, 479.730, 479.870, 479.540, 479.550, 479.560

Other Authority:

Statutes Implemented:

ORS 479.730, 757.262, 455.083, 479.870, 479.550, 479.560

RULE SUMMARY

These rules adopt the 2014 Oregon Electrical Specialty Code based upon 2014 edition of the NFPA 70, National Electrical Code, with Oregon specific amendments. Additionally, the proposed rules include some non-substantive housekeeping changes to administrative rules that provide clarity and consistency among the division's rules.

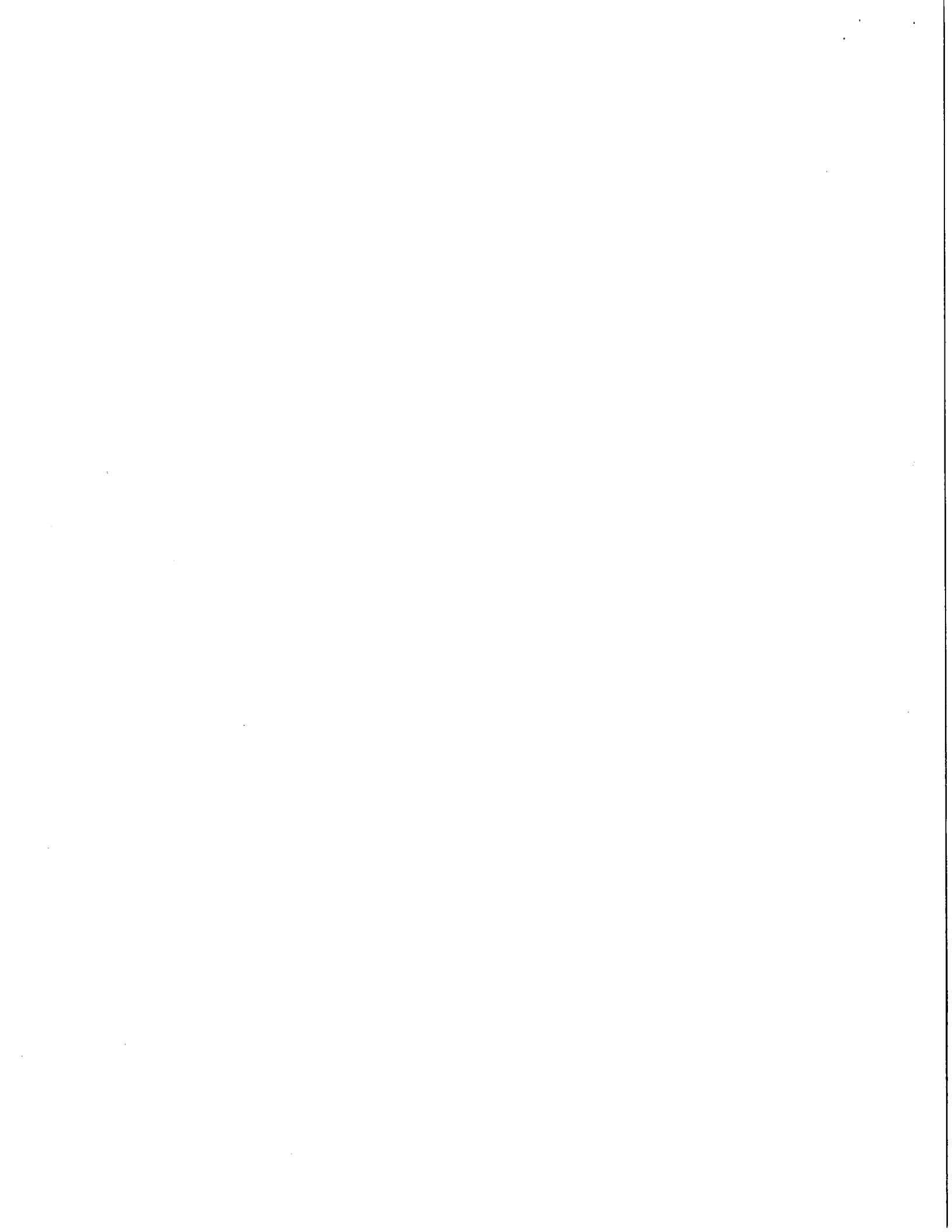
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Rules Coordinator Name

Email Address

BCD 12-2014



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PERMANENT ADMINISTRATIVE RULES

Department of Consumer and Business Services, Building
Codes Division

918

Agency and Division

Administrative Rules Chapter Number

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Rules Coordinator

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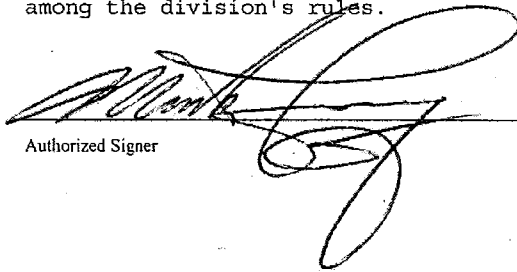
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 Mark Love 9/30/2014
Authorized Signer Printed Name Date

Authorization Page replaces the ink signature on paper filings. Have your authorized signer sign and date, then scan and attach it to your filing. You must complete this step before submitting your Permanent and Temporary filings.

918-251-0090

Definitions

For purposes of OAR chapter 918, divisions 251 through 311, unless otherwise specified, the following apply:

- (1) "Appliance" as applied to the limited maintenance specialty contractor license established by ORS 479.630, means any built-in or permanently-connected electrical utilization equipment, not including lighting fixtures, other than industrial, that is installed or connected as a unit to perform one or more functions such as clothes washing, air conditioning, food mixing, deep frying, etc.
- (2) "Approved" when referring to electrical product certification means approved in Oregon or for Oregon by the Electrical and Elevator Board.
- (3) "Balance of system" as it relates to renewable electrical energy systems are those products, equipment, and systems for the conversion, control and storage of electrical energy.
- (4) "Board" means Electrical and Elevator Board.
- (5) "Building" means a structure that stands alone or that is isolated from adjoining structures by area separation walls as identified in Chapter 7 of the **Oregon Structural Specialty Code** adopted in OAR chapter 918, division 460, with all openings therein protected by approved fire doors as required.
- (6) "Certification Mark" is identification on an electrical product indicating that the product has been certified under ORS 479.760.
- (7) "Certified Electrical Product" is an electrical product certified under ORS 479.760 to which a label or other identifying mark.
- (8) "Continuously Employ" means a person, including a person leased from a worker leasing company licensed under ORS 656.850, during time periods when electrical work for which they are responsible is performed, devotes their entire time of employment to tasks of supervising, designing, laying out, planning, controlling, and making electrical installations for the electrical contractor for which the supervisor is registered as signing supervisor.
- (9) "Custom Made" means electrical products that are designed for a specific purpose and location.
- (10) "Document" means prepare records itemizing what was checked, why it was checked, when it was done, how it was checked, what was determined, and who did the work.
- (11) "Electrical Specialty Code" means the National Electrical Code with Oregon amendments.
- (12) "Electrical Specialty Code Inspector," formerly referred to as "A-Level Electrical Inspector," is a person certified to inspect under the **Oregon Electrical Specialty Code**.
- (13) "Energy generation," as it relates to renewable electrical energy generation equipment, are those products, equipment, and systems in renewable electrical energy systems that produce or convert electrical energy.
- (14) "Engineer" is an individual who has completed a minimum four-year degree program in electrical engineering or electrical technology with power specialty, from an accredited college or university and has received a Bachelor of Science degree.
- (15) "Field Evaluation" means the evaluation of electrical products by an approved field evaluation firm.
- (16) "Indorsement" is a designation within the restricted energy electrical area showing qualifications and training regarding a product area. It determines the scope of restricted energy electrical activity authorized under a restricted energy electrical license.
- (17) "Industrial Electronic Equipment" means a device, appliance, motor, or machine regulated, operated, or controlled through fiber optics or by a combination of electron tubes, capacitors, resistors, impedance transformer, and relays; the control circuit, and/or the power circuits having electrons flowing through a vacuum, metallic vapor, gas tubes, or transistors as used in an industrial plant.
- (18) "Industrial Plant", for purposes of licensing and electrical master permit inspection program, means an establishment engaged in industrial production, or service, or a school, hospital, sewer plant, water plant, commercial office building, building occupied by the state or a local government entity, or an institution. For purposes of the elevator program, "industrial plant" does not include a school, hospital, commercial office building, building occupied by the state or a local government entity, or an institution where the elevators are accessible to and used by persons other than the employees of that building.
- (19) "Installation" includes external and field wiring, service contracts or warranties by the seller or manufacturer concerning the longevity of the equipment or parts after the original installation. It does not include "start-up" activities where new equipment is placed in service, and that type of work related to delivering and setting in place a piece of machinery.
- (20) "Inverter", as it relates to renewable electrical energy generation equipment, is a product, equipment or system that converts direct current into alternating current.
- (21) "Jurisdictional Inspector" is a state or municipal inspector having inspection responsibility within their jurisdiction over electrical products or their installation, or both.
- (22) "Labeled" means a label, symbol or other identifying mark of a Nationally Recognized Testing Laboratory (NRTL), field evaluation firm or the division that is attached to an electrical product indicating the product is manufactured according to approved standards and tested or evaluated for specific end uses or both.
- (23) "Lighting Fixture" is a complete lighting unit consisting of a lamp or lamps together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamp to the power supply.
- (24) "Limited Energy System" means those systems that include Class 1, Class 2 or Class 3 systems as defined by Section 725.2 of NFPA 70 (National Electrical Code) and audio systems, communication systems and power-limited fire alarm systems, covered in the **Oregon Electrical Specialty Code**.

- (25) "Listed Product" means a product was examined and accepted by a Nationally Recognized Testing Laboratory (NRTL) to meet a particular product standard and is maintained on a list of the listing laboratory.
- (26) "Maintain" means to preserve electrical equipment in a good sound condition.
- (27) "Maintenance" Compare with repair, replacement, and maintain for definition.
- (28) "Minimum Electrical Installation Safety Code" means the adopted **Oregon Electrical Specialty Code**.
- (29) "Nationally Recognized Testing Laboratory (NRTL)" means a laboratory recognized by the Federal Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.7.
- (30) "NEMA" means the National Electrical Manufacturers Association.
- (31) "Off grid system" is a stand-alone system, connected to a structure, whose electrical systems are not connected to a utility-supplied electrical production and distribution network.
- (32) "On grid system" is an electrical power system connected to a structure whose electrical systems are also connected to a utility-supplied electrical production and distribution network.
- (33) "Plug-in Replacement" is a part, component or assembly designed to be inserted directly into a mating receptacle or socket such as printed circuit boards, control relays, control harnesses or other equipment connected by a cord or cable and plug assembly. A plug-in replacement does not have any field wiring that is connected to the plug-in part or assembly.
- (34) "Power Circuitry" means that portion of the system, other than control, that provides electrical power to utilization equipment.
- (35) "Registered Professional Electrical Engineer" is an individual licensed by the State of Oregon Board of Engineering Examiners as a professional electrical engineer under OAR chapter 820, division 10.
- (36) "Renewable Electrical Energy System" as it relates to electrical energy generation, is the total components and subsystems that, in combination, convert wind energy, solar energy, micro-hydroelectricity, photovoltaic energy or fuel cell energy into electrical energy suitable for connection to a utilization load.
- (37) "Repair" means to restore worn or damaged parts to a good, sound condition by means other than replacement.
- (38) "Replacement" means substitution of complete units of damaged or worn equipment with similar new or used equipment of a size and rating that does not exceed the design capacity of the existing product.
- (39) "Signing Supervising Electrician" or "Signing Supervisor" is a licensed supervising electrician who has been authorized by the electrical contractor to sign permits.
- (40) "Similar Equipment," as applied to the limited maintenance specialty contractor license established by ORS 479.630(12), means components of light fixtures other than ballasts.
- (41) "Special Deputy" means a person certified by the board or Chief Electrical Inspector to perform special deputy inspections allowed under ORS 479.760.
- (42) "Stand-alone system" is a renewable electrical energy system that supplies power independently of an electrical production and distribution network.
- (43) "Up to the load side of the inverter", as it relates to electrical energy generation equipment, is the renewable electrical energy system equipment up to the alternating current connection terminals of the inverter.

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

Stat. Auth.: ORS 479.630

Stats. Implemented: ORS 479.730

918-305-0005

Interpretations

All electrical interpretations dated prior to October 1, 2014, issued by the Building Codes Division are withdrawn.

Stat. Auth.: ORS 479.730

Stats. Implemented: ORS 479.730

918-305-0030

Other Codes or Publications that Impact Electrical Installations

Other codes and publications that impact electrical installations include, but are not limited to those listed below:

- (1) Chapter 9 of the **Oregon Structural Specialty Code** relating to fire protection systems and Chapter 3 of the **Oregon Residential Specialty Code** relating to smoke alarm installations.
- (2) ORS 455.420 requiring individual electric meters for dwelling units.
- (3) The **Oregon Energy Efficiency Specialty Code**, and chapter 11 of the **Oregon Residential Specialty Code** which address the energy efficiency issues of motors, electric lighting and other electric equipment; and
- (4) Chapter 16 and 17 of the **Oregon Structural Specialty Code** which addresses the seismic requirements of nonstructural components and special inspection requirements.
- (5) Publications and requirements of the serving utility.

(6) Public Law 101-336, the Americans with Disabilities Act, Part III; Department of Justice Regulations of Friday, July 26, 1991; 28 CFR Part 36, as amended, including the 2010 ADA Standards for Accessible Design and Public Law 100-430, the Fair Housing Act and the regulations adopted thereunder.

(7) Chapter 11 of the **Oregon Structural Specialty Code** which relates to the Americans with Disabilities Act for mounting height requirements for electrical and communication receptacles located in affected buildings and structures.

(8) The interconnection of all net-metering facilities and solar photovoltaic systems operated as interconnected power production sources shall comply with the **Oregon Electrical Specialty Code**. In addition, the interconnection of all net-metering facilities utilizing solid-state inverters shall comply with OAR 860-039 Net Metering.

(9) **Oregon Manufactured Dwelling Installation Specialty Code**. The electrical installations shall be in accordance with the requirements of the **Oregon Electrical Specialty Code**.

(10) The electrical portions of the installation or product standards identified in OAR 918-306-0005. These standards are informational only and are to be used to clarify code intent. They may be used as installation guides when not specifically referenced or covered in the **Oregon Electrical Specialty Code**. Examples include, but are not limited to, the electrical sections of NFPA 20, NFPA 54, NFPA 99, NFPA 101, NFPA 110, NFPA 780 and NFPA 820.

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

Stat. Auth.: ORS 479.730

Stats. Implemented: ORS 479.730 & 757.262

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, 2014, the 2014 **Oregon Electrical Specialty Code** consists of the following:

(a) **2014 Edition of the NFPA 70, National Electrical Code (NEC)**, and as further amended by the division in Table 1-E;

(b) **2012 Edition of the IEEE C2-2012, 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.

NOTE: Table 1-E is printed at the end of Division 305 and is available on the division's website at

<http://www.bcd.oregon.gov/rules.html#oar>

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

[ED. NOTE: Tables referenced are not included in rule text. Click here for PDF copy of table(s).]

Stat. Auth.: ORS 479.730

Stats. Implemented: ORS 479.730

918-305-0105

Amendments to the Oregon Electrical Specialty Code

The **Oregon Electrical Specialty Code** is amended pursuant to OAR chapter 918, Division 8. Amendments adopted 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.

NOTE: Table 1-E is printed at the end of Division 305 and is available on the division's website at

<http://www.bcd.oregon.gov/rules.html#oar>

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

[ED. NOTE: Tables referenced are not included in rule text. Click here for PDF copy of table(s).]

Stat. Auth.: ORS 479.730

Stats. 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, 2014, maintained by the division titled "NFPA Standards"; and

(2) UL standards on list dated October 1, 2014, maintained by the division titled "UL Standards."

Stat. Auth.: ORS 479.730

Stats. Implemented: ORS 479.730

918-306-0010

Overview

(1) ORS 479.610 establishes certification requirements for electrical products.

(2) The certification process generally involves inspection, testing and evaluation of the product. This is done through:

(a) Listing and application of listing label by a Nationally Recognized Testing Laboratory (NRTL);

(b) Special Deputy Evaluation and Certification. A product can be submitted to the division for certification under ORS 479.760. The special deputy procedures, rules and limitations are located in OAR 918-306-0510 to 918-306-0530; or

(c) Field Evaluation of Products. Field evaluation involves inspection, testing, evaluation and application of an evaluation label utilizing the 2014 NFPA Recommended Practice and Procedures for Unlabeled Electrical Equipment Evaluation.

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

Stat. Auth.: ORS 479.730

Stats. Implemented: ORS 479.730

918-309-0070

Miscellaneous

Special fees are established for the following items in lieu of fees set under OAR 918-309-0060.

(1) Permit for each domestic water or sewage pump, irrigation pump or circle and its associated controls, excluding service fee, \$63;

(a) Single Circuit. If a well pump or sewage pump and its associated controls are serviced from the house main service, and the pump is installed and ready for inspection, no additional fee is charged. If the pump is installed by another contractor or later, an additional pump fee and a new permit is necessary under this part;

(b) Feeder. If the well has a subpanel, there is a fee for the feeder from the main service to the subpanel and a fee for branch circuits. If the pump is installed later, or by another contractor, a new permit and pump fee is required;

(c) Separate Service. If the well has separate service the fee is based on the service (amps) and the number of branch circuits. If the pump is installed later, or by a different contractor, a new permit and pump fee is required.

(2) Permit for the installation of each electrical sign or outline lighting system supplied by a single branch circuit, \$63.

(3) Each limited energy circuit panel, one or more air-conditioning or heater thermostats installed at a job site, multiple circuit terminal board or installation or extension of limited energy circuits, \$63.

(4) The permit fees in this rule, except as noted in subsection (11), are for up to two inspections and are charged in addition to other fees for electrical service.

(5) Note the exception under OAR 918-309-0030(3)(a)(A) dealing with residential limited energy.

(6) Installation of signal circuits in buildings over three floors. Each floor in excess of three shall be considered a separate panel for the purpose of calculating fees.

(7) Fees for Inspections in Excess of Those Allowed Under OAR 918-309-0030 through 918-309-0060. Charge for each additional inspection to be paid in advance unless requested by a bonded electrical contractor using the bulk label system, \$55.

(8) Fees for Other Inspections not Covered by This Rule. All inspections not provided in this rule shall be charged at \$86 per hour including travel and office time with a minimum charge of one hour.

(9) Fees for Bulk Labels:

(a) Bulk labels sold only to electrical contractors, \$25 per label;

(b) Contractors working under a bulk label system are billed for any difference in the cost of the bulk label and the cost of the permit fees required in this rule.

(10) The fee for swimming pools shall be permitted as provided in OAR 918-309-0040 and 918-309-0060. The inspection of the grounding of the pool shall be included in the permit for the pool and counted as one of the number of allowed inspections under the permit.

(11) Permit fees for renewable electrical energy systems. For renewable electrical energy permit applications, see OAR 918-309-0410. For repairs and maintenance of renewable electrical energy systems, see OAR 918-309-0220(5).

(a) (A) 5 KVA or less: \$79;

(B) 5.01 KVA to 15 KVA: \$94;

(C) 15.01 KVA to 25 KVA: \$156.

(b) For wind generation systems in excess of 25KVA:

(A) 25.01 KVA to 50 KVA: \$204;

(B) 50.10 KVA to 100 KVA: \$469;

(C) For wind generation systems that exceed 100 KVA the permit fee shall be calculated in accordance with OAR 918-309-0040.

(c) For solar generation systems in excess of 25KVA:

(A) Each additional KVA over 25 will be charged an additional \$6.25 per KVA.

(B) The permit charge will not increase beyond the calculation for 100 KVA.

(d) Permits issued under this sub-section include three inspections. Additional inspections will be billed at an hourly rate.

(12) Work Commencing before permit issuance. Any person who commences electrical work on a building or structure before obtaining the necessary permits shall be subject to an investigative fee. The amount of the investigative fee shall be the average or actual additional cost of ensuring that a building or structure is in conformance with the **Oregon Electrical Specialty Code** and shall be in addition to the required permit fees.

Stat. Auth.: ORS 479.870

Stats. Implemented: ORS 455.083 & 479.870

918-309-0080

Temporary Electrical Permit Rule

(1) Authority and Scope of Rule. This rule:

(a) Is required by ORS 479.550;

(b) Applies to the Building Codes Division and all municipalities that enforce the electrical laws;

(c) Can only be used by a licensed electrical contractor.

(2) Definitions. For the purposes of this rule only, the following definitions are adopted:

(a) "Emergency Electrical Work" is an acute, unplanned and immediate need for electrical repair or replacement involving an existing electrical installation or product or both;

(b) "Licensed Electrical Contractor" or "Contractor" means any type of electrical contractor licensed by the Building Codes Division;

(c) "Jurisdiction" means the Building Codes Division, a municipality enforcing the electrical laws or municipality issuing electrical permits having authority over the electrical work;

(d) "Unanticipated Electrical Work" is electrical work, including a new installation, requested by a customer where the timing of a request for commencement of work does not reasonably allow the contractor time to obtain an electrical permit before starting the work:

(A) This includes, but is not limited to, additional work assigned at the work site as well as preassigned work when the customer requests service at an unplanned date or time;

(B) This does not include electrical work where a permit already exists covering all or part of the work.

(3) Temporary Permit. A jurisdiction shall recognize the existence of a temporary electrical permit when the contractor encounters "emergency electrical work" or "unanticipated electrical work," complies with section (4) of this rule and does electrical work.

(4) Temporary Permit Procedures. The contractor must comply with subsection (a) of this section and with one of the requirements of subsections (b) to (d) of this section:

(a) Prior to commencing work, the contractor shall fill out a standard form electrical permit application for any jurisdiction, identify the proper jurisdiction, identify the contractor, and provide the electrical contractor and Construction Contractors Board identifications:

(A) The standard permit application form covering electrical installations can be used in any transaction, except the fees shall be that of the jurisdiction where the work is done;

(B) A restricted energy electrical application can only be used if the work is strictly covered by that permit;

(C) The temporary permit must be signed by the journeyman or technician that does the work or by a supervising electrician;

(D) A copy must be posted at the job site marked "temporary permit," showing the starting work date and the ending date of the temporary permit. The ending date shall not be more than seven days from the starting date.

(b) FAX a copy to the jurisdiction and mail the original with proper payment to the jurisdiction all within five days of the start of the work;

(c) If the jurisdiction does not have a FAX machine, telephone the jurisdiction informing it of the time, place and type of work that was started within 24 hours of the opening for business by the jurisdiction, and mail a copy of the completed application and payment within seven days of the start of the work; or

(d) If the jurisdiction has a recording device, call in the time, place and type of work within 12 hours of the start of work and complete the electrical permit application and payment within seven days of the start of the work.

(5) If bulk label or minor label procedures are appropriate for the electrical installation and are allowed by the jurisdiction, those procedures may be followed in lieu of the requirements of this rule.

(6) An inspection shall be requested at any time following the temporary permit procedures. A jurisdiction may, but is not required to, require permit fees before providing an inspection.

(7) Burden of Proof and Assumed Risks. The contractor who uses this rule has:

(a) The burden of proving that an "emergency" or "unanticipated electrical work" existed which justified using this rule; and

(b) Assumes all risks that are inherent with starting electrical installations before review and approval by the jurisdiction.

(8) In addition to civil penalties that may be assessed for violation of this rule, the use of this rule may be suspended, restricted or denied to a contractor who violates this rule more than once.

Stat. Auth.: ORS 479.540(1), 479.550 & 479.730(5)

Stats. Implemented: ORS 455.083 & 479.550

918-309-0100

Master Permit Program Under ORS 479.560(3)

(1) Authority for Rule. This rule is authorized by ORS 479.560, only deals with electrical master permits and shall not be interpreted as changing any licensing requirement.

(2) Definitions. For the purpose of this rule:

(a) "Applicant" is an owner, building operating manager or an electrical contractor of a covered facility who complies with ORS 479.630;

(b) "Covered Facility" is one or more industrial plants as defined in OAR 918-251-0090 or any successor rule; commercial office buildings; buildings owned, leased, managed or operated by a state or local government entity; or other facilities designated by the board:

(A) Under common ownership or operating management;

(B) Located within the boundaries of the same inspecting jurisdiction; and

(C) Within the same complex or contiguous lots located at the same geographic site.

(c) "Inspecting Jurisdiction" is the state or municipality having authority to inspect a covered facility under a master permit program.

(d) "Master Permit" is an annual permit issued under ORS 479.560 and these rules by the inspecting jurisdiction.

(3) Additional Facilities Designated by the Board. "Covered facilities" also include:

(a) Where only a single building or structure is involved, the grounds and adjacent facilities under common control or management that make up the complex containing the building or structure;

(b) Isolated buildings and structures in multiple sites within the area served by the inspecting jurisdiction that individually meet the definition of "covered facility" but only when acceptable by both the inspecting jurisdiction and owner or operating manager; and

(c) Incidental buildings and structures adjacent or connected to a commercial office building, industrial plant, government building or building designated by the board, provided the building or structure is under the same ownership or management as the covered facility.

(4) Scope of Master Permit Program:

(a) Under ORS 479.540 which allows electrical master permit for "repair, alteration or replacement of existing electrical products," an "electrical product replacement" includes installing a product in place of another that shall not exceed the capacity or design of the existing electrical system;

(b) The following do not constitute "repair, alteration or replacement of existing electrical products" and require a separate permit and inspection:

(A) Electrical installations in a new building shell, structural retrofits, installation or alteration of load bearing walls, foundations or exit passageways;

(B) Any electrical installation in connection with changing the type of use or occupancy classification of the building or structure;

(C) Any addition which increases the square footage of the building or structure;

(D) Remodeling within an occupied existing shell which results in:

(i) Vacation of more than 25 percent of occupants within a floor or building resulting from remodel;

(ii) Termination of a tenant's usual activities for more than ten working days; or

(iii) Construction that involves more than 25 percent of the contiguous area of any floor.

(E) Electrical installations a part of construction within a covered facility that also involve a plumbing, structural or mechanical permit other than a master permit under ORS 455.154.

(5) Interpretation. Who can use a master permit:

(a) A master permit shall only be provided to an electrical contractor, owner or operating manager responsible for all electrical installations in the whole covered facility;

(b) An owner, electrical contractor or operating manager of a covered facility can obtain a permit only if appropriately licensed electricians are to do the work.

(6) Operation of the Master Permit Program:

(a) An applicant electing to have a covered building inspected under the master permit program shall take out a master permit with the inspecting jurisdiction and pay required fees;

(b) If applicant is an owner or operating manager, applicant shall file a roster with the inspecting jurisdiction of all electricians currently employed by applicant showing name, electrical license number and type of electrical license, and all electrical contractors whose work is included under a master permit taken out by the owner or operating manager. The roster must be filed at the same time as the permit application:

- (A) When an electrical contractor under a continuing retainer ceases to serve the covered facility, notice of termination shall be filed with the inspecting jurisdiction by the permit holder within ten working days of termination;
- (B) An updated roster shall be available to the inspecting jurisdiction at any regularly scheduled inspection;
- (C) An updated roster shall be filed with the inspecting jurisdiction at each master permit renewal.
- (c) If applicant is an owner, operating manager or contractor, applicant shall:
 - (A) Create and keep records of all electrical work done under the master permit, show the person doing the work, electrical license number, date of work and have the records available for the electrical inspector at the covered facility at site or sites agreed to in writing with the inspecting jurisdiction. If there is no written agreement, each building shall have a record of electrical work done and of persons employed electrically for that building and its adjacent facilities;
 - (B) Set up an inspection schedule with the inspecting jurisdiction which shall be at least once a year;
 - (C) Call for inspections when necessary under the electrical requirements and not cover electrical work until an inspection is performed;
 - (D) Call for immediate inspections, if applicant chooses to discontinue the electrical master permit program. All future work must be by separate permit and inspection.
- (7) Enforcement. The inspecting jurisdiction shall:
 - (a) Report and document all electrical licensing violations by a person holding an electrical master permit to the board;
 - (b) Take enforcement actions against persons who violate the scope of the master permit or compliance requirement and report the violations and actions taken to the board; and
 - (c) Make inspections at more frequent intervals to insure that licensing and scope of master permit requirements are being complied with.
- (8) Limited Maintenance Electrician. Work by a limited maintenance electrician licensed under ORS 479.630 and performed under the scope of that license can be combined with a master permit program, provided separate records are kept and there is an annual inspection.
- (9) Operations by Electrical Contractors. Electrical contractors:
 - (a) Shall be issued a separate master permit only if the contractor is a general electrical contractor, has a licensed signing supervisor on staff and is authorized by the owner or operating manager;
 - (b) Can work under the master permit of the applicant if the work is recorded together with the applicant's electrical installations and the work is within the scope of the contractor's license; and
 - (c) Shall comply with the applicable requirements of section (6) of this rule.
- (10) Inspection Fees:
 - (a) A person obtaining a master inspection permit does not have to pay the normal permit inspection fees of the inspecting jurisdiction for installations within the scope of the permit. A separate permit, fees and individual inspections are required for installations outside the scope of a master permit;
 - (b) By the Division. Building Codes Division inspection charges are the division's miscellaneous fee for hourly inspections where no specific fee category is established, OAR 918-309-0070(5) and successor rules;
 - (c) By Municipalities. Municipal inspection charges shall be the municipality's miscellaneous fee for hourly inspections where no specific fee category is established;
 - (d) A one-time, set-up fee may be charged by the inspecting jurisdiction when a master permit is obtained, which shall not exceed \$100;
 - (e) To determine time charges, the "cost of making the inspection" in ORS 479.560 includes the inspector's travel time from the inspector's office to return, actual lodging and per diem expenses as established by the jurisdiction and preparation and review of reports whether this is done at the plant or at the inspector's office. The lodging and per diem expenses shall not exceed the standard amounts allowed by the inspecting jurisdiction.
- (11) Delegation Standards. Delegation shall only be granted to municipalities that also serve essentially the same area with basic electrical inspection services:
 - (a) A municipality requesting delegation of the master permit program shall, in addition to the notice required by ORS 455.148 or 455.150, file an application prior to January 1 of the year for which delegation is requested and provide:
 - (A) The number of master permits anticipated to be issued and the names of electrical inspectors certified to inspect under the **Oregon Electrical Specialty Code** who are or will be assigned to the program;
 - (B) A master permit inspection operating plan. Initial applicants, excluding those who were doing industrial plant inspections under contract with the division on the effective date of this rule, shall also show what arrangements are to be operational on July 1;
 - (C) An agreement with each surrounding inspecting jurisdiction having covered facilities crossing municipal boundaries, providing who will inspect each covered facility, if the facility elects to be inspected under the master permit program. The agreement:
 - (i) Shall cover all electrical inspections for the facility;
 - (ii) May identify specific facilities but shall also include a method of determining who shall serve those facilities that become operational or make elections during the term of the agreement; and

(iii) Shall show how fees will be established for the complete covered facility that elects to be inspected under the master permit program.

(D) An authorization to the division that if the agreement in paragraph

(C) of this subsection fails to include a contingency or method of resolving a contingency and there is any disagreement between the jurisdictions over who should serve a complete facility, the division is authorized to immediately assign the facility to an inspecting jurisdiction as it deems appropriate and that each will enter into intergovernmental agreements as needed to carry out the assignment;

(E) A prototype agreement with a facility that crosses municipal boundaries covering the terms and conditions of electrical inspection services unless other arrangements are made which gives the municipality enforcement and fee setting authority over the complete facility.

(b) Delegation shall only be granted where it is affirmatively found that the jurisdiction is clearly able to perform the new master permit program with no loss of efficiency or effectiveness to its basic electrical inspection program.

(12) Renewal of Delegation:

(a) Prior to January 1 of any year, when the municipality applies for renewal of the master permit program, it shall provide a report of number of master permits issued and number inspected during the prior calendar year. It shall be granted the delegation automatically if its basic electrical program is also renewed, unless the division expressly notifies the municipality to the contrary by April 30;

(b) All notices of discontinuation of the master permit program shall be filed by the same date shown in subsection (a) of this section;

(c) All amendments to the filing made under section (11) of this rule should be filed as soon as amendments are available, but no later than the date shown in subsection (a) of this section to allow review by division staff.

Stat. Auth.: ORS 479.560

Stats. Implemented: ORS 479.560

<p>OESC 210.8 Errata</p>	<p>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 (C) (D). The ground-fault circuit-interrupter shall be installed in a readily accessible location.</p>
<p>OESC 210.8 (Notes) (Exception)</p>	<p>Informational Note <u>No. 1</u>: See 215.9 for ground-fault circuit-interrupter protection for personnel on feeders. <u>Informational Note No. 2: See 760.41(B) and 760.121(B) for power supply requirements for fire alarm systems.</u></p>
	<p><u>Exception: A single receptacle labeled as “not GFCI protected” supplying only a permanently installed fire alarm or burglar alarm system shall not be required to have ground-fault circuit-interrupter protection.</u></p> <p>210.8(A) Dwelling Units. All 125-volt, single-phase, 15-and 20- ampere receptacles installed in the locations specified in 210.8(A)(1) through (10) shall have ground-fault circuit-interrupter protection for personnel.</p> <p>(1) Bathrooms</p>
<p>OESC 210.8(A)(2) (Exceptions)</p>	<p>(2) Garages, and also accessory buildings that have a floor located at or below grade level not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use</p> <p><u>Exception No. 1 to (2): A single receptacle for each appliance within a dedicated space that, in normal use, is not easily moved from one place to another, that is cord-and-plug connected, and the receptacle is labeled as “not GFCI protected.”</u></p> <p><u>Exception No. 2 to (2): Receptacle ground fault protection shall not be required for a dedicated branch circuit serving a single receptacle for sewage or sump pumps.</u></p> <p><u>Receptacles installed under the exceptions to 210.8(A)(2) shall not be considered as meeting the requirements of 210.52(G).</u></p>
	<p>(3) Outdoors</p>
<p>OESC 210.8(A)(4) (Exception)</p>	<p>(4) Crawl spaces – at or below grade level</p> <p><u>Exception to (4): Receptacle ground fault protection shall not be required for a dedicated branch circuit serving a single receptacle for sewage or sump pumps.</u></p>
<p>OESC 210.8(A)(5) (Exceptions)</p>	<p>(5) Unfinished basements – for purposes of this section, unfinished basements are defined as portions or areas of the basement not intended as habitable rooms and limited to storage areas, work areas, and the like</p>
	<p><u>Exception No. 1 to (5): A single receptacle for each appliance within a dedicated space that, in normal use, is not easily moved from one place to another, that is cord-and-plug connected, and the receptacle is labeled as “not GFCI protected.”</u></p> <p><u>Exception No. 2 to (5): Receptacle ground fault protection shall not be required for an individual branch circuit serving a single receptacle for sewage or sump pumps.</u></p> <p>Receptacles installed under the exceptions to 210.8(A)(5) shall not be considered as meeting the requirements of 210.52(G).</p>
	<p>(6) Kitchens – where the receptacles are installed to serve the countertop surfaces</p>
<p>OESC 210.8(A)(7) (Exception)</p>	<p>(7) Sinks – where receptacles are installed within 1.8 m (6 ft) of the outside edge of the sink</p> <p><u>Exception to (7): A single receptacle for each appliance or a duplex receptacle serving two appliances within a dedicated space that, in normal use, is not easily moved from one place to another, that is cord-and-plug connected, and the receptacle is labeled as “not GFCI protected.”</u></p>
	<p>(8) Boathouses</p>
	<p>(9) Bathtubs or shower stalls – where receptacles are installed within 1.8 m (6ft) of the outside edge of the bathtub or shower stall</p>

<p>OESC 210.8(A)(10) (Exception)</p> <p>OESC 210.8(B)</p>	<p>(10) Laundry areas</p> <p><u>Exception to (10): A single receptacle for each appliance within a dedicated space that, in normal use, is not easily moved from one place to another, that is cord-and-plug connected, and the receptacle is labeled as "not GFCI protected."</u></p> <p>210.8(B) Other than Dwelling Units. All 125-volt, single-phase, 15- and 20- ampere receptacles installed in the locations specified in 210.8(B)(1) through (8) shall have ground-fault circuit-interrupter protection for personnel. . .</p> <p>(3) Rooftops</p> <p>(4) Outdoors</p> <p>(8) Garages, service bays, and similar areas other than vehicle exhibition halls and showrooms</p> <p><u>Exception No. 1 to (3), (4) and (8): Receptacle ground fault protection shall not be required for an individual branch circuit serving receptacle for sewage or sump pumps.</u></p>
<p>OESC 210.12(A) (Exceptions) Statewide Interpretation</p> <p>OESC 210.12(B)</p>	<p>Arc-Fault Circuit-Interrupter Protection.</p> <p>(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):</p> <p><u>Exception No. 1: Where an individual branch circuit to a fire alarm system installed in accordance . .</u></p> <p><u>Exception No. 2: AFCI protection shall not be required on GFCI protected receptacles installed in dining rooms.</u></p> <p><u>Exception No 3: AFCI protection shall not be required for optional, dedicated outlets that supply equipment known to cause unwanted tripping of AFCI devices [see Statewide Code Interpretation for 210.12 (A)].</u></p> <p><u>Exception No 4: AFCI protection shall not be required on branch circuits supplying receptacles or appliances fastened in place located in hallways, kitchens and laundry areas.</u></p> <p>(B) Branch Circuit Extensions or Modifications – Dwelling Units. In any of the areas specified in 210.12(A), where branch-circuit wiring is modified, replaced, or extended, the branch circuit shall be protected by one of comply with the following:</p> <p>(1) A listed combination type AFCI located at the origin of the branch circuit Extensions or modifications of existing circuits shall not require the installation of AFCI protection.</p> <p>(2) A listed outlet branch circuit type AFCI located at the first receptacle outlet of the existing branch circuit Replacement or upgrading of a service or panelboard shall not require that existing circuits be protected by AFCI devices.</p> <p>(3) Where an existing branch circuit is replaced, the installation of AFCI protection shall be required.</p> <p><u>Exception: AFCI protection shall not be required where the extension of the existing conductors is not more than 1.8 m (6-ft) and does not include any additional outlets or devices.</u></p>
<p>OESC 210.52 (C)(1) (Exception)</p>	<p>210.52 Dwelling Unit Receptacle Outlets.</p> <p>(C)(1) Wall Countertop Spaces.</p> <p><u>Exception: Receptacle outlets shall not be required on a wall directly behind a range, counter-mounted cooking unit, or sink in the installation described in Figure 210.52(C)(1). Despite Figure 210.52(C)(1), no receptacle shall be required behind a range, counter-mounted cooking unit, or sink mounted in corner.</u></p>

<p>OESC 210.52(C)(2)</p>	<p>(C)(2) Island Countertop Spaces. At least one receptacle outlet shall be installed at each island countertop space with a long dimension of 600 mm (24 in.) or greater and a short dimension of 300 mm (12 in.) or greater.</p>
<p>OESC 210.52(C)(3)</p>	<p>(C)(3) Peninsular Countertop Spaces. At least one receptacle outlet shall be installed at each peninsular countertop space with a long dimension of 600 mm (24 in.) 1.05 m (42 in.) or greater and a short dimension of 300 mm (12 in.) or greater. A peninsular countertop is measured from the connecting edge.</p>
<p>OESC 210.52(C)(4)</p>	<p>(C)(4) Separate Spaces. Countertop spaces separated by rangetops, refrigerators, or sinks shall be considered as separate countertop spaces in applying the requirements of 210.52(C)(1). If a range, counter-mounted cooking unit, or sink is installed in an island or a peninsular countertop and the depth of the countertop behind the range, counter-mounted cooking unit, or sink is . . .</p>
<p>OESC 210.52(E)(3) (Exception)</p>	<p>(E)(3) Balconies, Decks, and Porches. <u>Exception 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.</u></p>
<p>OESC 210.52(G)(1) (Exception)</p>	<p>210.52(G) For a one-family dwelling, at least one receptacle outlet shall be installed in the areas specified in 210.52(G)(1) through (3). These receptacles shall be in addition to receptacles required for specific equipment. (1) Garages. In each attached garage and in each detached garage with electric power. The branch circuit supplying this receptacle(s) shall not supply outlets outside of the garage. At least one receptacle outlet shall be installed for each car space. <u>Exception: A 20 ampere branch circuit shall be permitted to supply the outlet(s) specified in 210.52 (E).</u></p>
<p>OESC 210.52(I)</p>	<p>(I) 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. Alcoves. In dwelling units, alcoves shall have at least one receptacle installed. These outlets shall be in addition to the required hallway outlets. <u>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.</u></p>
<p>OESC 210.63 (Exceptions)</p>	<p>210.63 Heating, Air Conditioning, and Refrigeration Equipment Outlet. <u>Exception No. 1: A receptacle outlet shall not be required at one- and two-family dwellings for the service of evaporative coolers.</u> <u>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.</u></p>
<p>OESC 225.36 (Exception)</p>	<p>225.36 Type. 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. <u>Exception: In single light pole installations that have the connections to the light pole circuit made in a location accessible only to qualified persons, certified in-line fuse holders shall be allowed, subject to special permission.</u></p>
<p>OESC 230.40 (Exception)</p>	<p>230.40 Number of Service-Entrance Conductor Sets. <u>Exception No. 3: A single-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 separate grounded conductor and equipment grounding conductor shall be installed to meet the provisions of Article 225.</u></p>

OESC 230.43 (Exception)	230.43 Wiring Methods for 1000 Volts, Nominal, or Less. <u>Exception: Items (13) and (15) are limited to traffic control devices and highway lighting poles.</u>
OESC 230.70(A)(1) (Exception)	230.70(A)(1) Readily Accessible Location. <u>Exception: In existing installations where only the service panel or meter base is changed and the existing service conductors meet the ampacity requirements, or the existing conduit is of sufficient size to install new conductors, the panel may remain at the present location providing all requirements of Section 110.26 and 240.24 are met. This exception does not require a main disconnect located nearest the point of entry.</u>
OESC 230.95(C)	230.95 (C) Performance Testing. The ground-fault protection system shall be performance tested when first installed on the site. The test shall be conducted in accordance with instructions that shall be provided with the equipment. <u>This test shall be performed by persons having proper training and experience required to perform and evaluate the results of such performance testing.</u> A written record of this test shall be made and shall be available to the authority having jurisdiction. <u>This report shall be signed by the person(s) performing this test.</u>
OESC 250.24(A)(1) (Exception) OESC250.24(B) (Exception)	250.24 Grounding Service-Supplied Alternating-Current Systems. (A)(1) General. Informational Note: See definitions of <i>Service Conductors, Overhead</i> ; <i>Service Conductors, Underground</i> ; <i>Service Drop</i> ; and <i>Service Lateral</i> in Article 100. <u>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 Section 230.95 shall not be performed prior to the above installation requirements. Warning signs shall be installed.</u> (B) Main Bonding Jumper. <u>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 Section 230.95 shall not be performed prior to the above installation requirements. Warning signs shall be installed.</u>
OESC 250.32 (A) OESC 250.32(B)(1) (Exception)	250.32 Buildings or Structures supplied by a Feeder(s) or Branch Circuits(s). (A) Grounding Electrode. Building(s) or structure(s) supplied by feeder(s) or branch circuits(s) shall have a grounding electrode or grounding electrode system installed in accordance with Part III of Article 250 250.50 . The grounding electrode conductor(s) shall be connected in accordance with 250.32(B) or (C). Where there is no existing grounding electrode, the grounding electrode(s) required in 250.50 shall be installed. (B)(1) Supplied by a feeder or Branch Circuit. <u>Exception No. 1: For existing and new installations made in compliance with previous editions the 2005 edition of this Code that permitted such connection, the grounded conductor run with the supply to the building or structure shall be permitted to serve as the ground-fault return path if all of the following requirements continue to be met:</u>

	<p>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.</p> <p><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></p>
OESC 334.15(C)	<p>(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.</p>
OESC 394.12 (Exception)	<p>394.12 Uses Not Permitted. Concealed knob-and-tube wiring shall not be used in the following:</p> <p>(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</p> <p><u>Exception: The provisions of Section 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:</u></p> <p><u>(1) The visible wiring shall be inspected by a certified electrical inspector or a general supervising electrician employed by a licensed electrical contractor.</u></p> <p><u>(2) All defects found during the inspection shall be repaired prior to the installation of insulation.</u></p> <p><u>(3) Repairs, alterations or extensions of or to the electrical systems shall be inspected by a certified electrical inspector.</u></p> <p><u>(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 2005 Edition. Foamed in place insulation shall not be used with knob-and-tube wiring.</u></p> <p><u>(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.</u></p> <p><u>(6) All knob-and-tube circuits shall have overcurrent protection in compliance with the 60 degree C column of Table 310-16 of NFPA 70-2008. 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 Section 240.53.</u></p>
OESC 400.7(A)(12)	<p>400.7(A) Uses. Flexible cords and cables shall be used only for the following:</p> <p><u>(12) Listed assemblies of fixtures and controllers, approved by the Federal Aviation Administration.</u></p>
OESC 404.2(C)	<p>404.2(C) Switches Controlling Lighting Loads. The grounded circuit conductor for the controlled lighting circuit shall be provided at the location where switches control lighting loads that are supplied by a grounded general-purpose branch circuit for other than the following:</p> <p><u>(8) Where replacing an existing device with one of similar characteristics.</u></p>
OESC 406.4(D)(4)	<p>406.4(D) Replacements.</p> <p>(4) Arc Fault Circuit Interrupter Protection. Delete entire section (4)(1), (2), and (3)</p>
OESC 406.12 (Exception)	<p>406.12 Tamper-Resistant Receptacles.</p> <p><i>Exception to (A), (B), and (C): Receptacles in the following locations shall not be required to be tamper resistant:</i></p> <p><u>(5) A multi-outlet assembly mounted on the underside of a cabinet above a countertop.</u></p>

<p>OESC 422.21</p>	<p>422.21 Covering of Combustible Material at Outlet Boxes. Any combustible ceiling finish exposed between the edge of a ceiling suspended (paddle) fan canopy or pan and an outlet box having a surface area of 1160 mm² (180 in.²) shall be covered with noncombustible material.</p>
<p>OESC 422.34</p>	<p>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.</p>
<p>OESC 424.44 OESC 424.44(G)</p>	<p>424.44 Installation of Cables in Concrete or Poured Masonry Floors. (G) Ground-Fault Circuit-Interrupter Protection. Ground-fault circuit-interrupter protection for personnel shall be provided for cables installed in all electrically heated floors of bathrooms, kitchens, and in hydromassage bathtub locations.</p>
<p>Errata</p>	<p>490.48 Substations. Errata 70-14-1 line 7 alters this article significantly</p>
<p>OESC 500.8(A)</p>	<p>500.8 Equipment (A) Suitability. “Suitability of identified equipment” shall be determined by one of the following: as used in Article 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. <i>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.</i></p>
<p>OESC 547.5(G)</p>	<p>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: <u>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.</u></p>
<p>OESC 547.10(A) Bonding of Equipotential Planes (Exception)</p>	<p>547.10(A) Where Required. 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. <u>Exception: 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.</u></p>
<p>OESC 553.4</p>	<p>553.4 Location of Service Equipment. The service equipment for a floating building shall be located adjacent to, but not in or on, the building or any floating structure. The main overcurrent protective device that feeds the floating structure shall have ground fault protection not exceeding 100 mA. Ground fault protection of each individual branch or feeder circuit shall be permitted as a suitable alternative.</p>

OESC 555.3	555.3 Ground Fault Protection. The main overcurrent protective device that feeds the marina shall have ground fault protection not exceeding 100 mA. Ground-fault protection of each individual branch or feeder circuit shall be permitted as a suitable alternative.
OESC 590.4(D)(2) (Exception)	590.4(D) Receptacles. (2) Receptacles in Wet Locations. All 15- and 20-ampere, 125- and 250-volt receptacles installed in a wet location shall comply with 406.9(B)(1). <u>Exception No. 1: A construction temporary service installed prior to April 1, 2016 that had been previously installed and energized prior to October 1, 2014, shall not be required to comply with the requirements for "extra duty" box hood rating and weather resistant receptacles in 406.9(B)(1).</u>
OESC 620.1 (Note)	620.1 Scope. This article covers the installation of electrical equipment and wiring used in connection with elevators, dumbwaiters, escalators, moving walks, platform lifts, and stairway chairlifts. Informational Note No. 1: For further information, see ASME A17.1 2010/CSA B44-10, Safety code for Elevators and Escalators. <u>the Oregon Elevator Specialty Code as adopted in OAR chapter 918, division 400.</u>
OESC 620.2	620.2 Definitions. (Before Signal Equipment.) <u>Separate Branch Circuit. A circuit dedicated solely for the purpose intended without other devices, systems or equipment connected to the circuit.</u>
OESC 620.5	620.5 Working Clearances. Working space shall be provided about controllers, disconnecting means, and other electrical equipment in accordance with 110.26(A). Where conditions of maintenance and supervision ensure that only qualified persons examine, adjust, service, and maintain the equipment, the clearance requirements of 110.26(A) shall not be required where any of the conditions in 620.5(A) through (D) are met. <u>Where machine room doors swing inward, the arc of the door shall not encroach on those clearances required by section 110.26(A).</u>
OESC 620.11(A)	620.11 (A) Hoistway Door Interlock Wiring. The conductors to the hoistway door interlocks from the hoistway riser shall be flame retardant and suitable for a temperature of not less than 200° C (392°F). Conductors shall be Type SF or equivalent <u>except where not required by the Elevator Safety Code (ASME A17.1).</u>
OESC 620.37(A)	620.37(A) Uses Permitted. Only such electrical wiring, raceways, and cables used directly in connection with the elevator or dumbwaiter, including wiring for signals, for communication with the car, for lighting, heating, air conditioning, and ventilating the elevator car, for fire detecting systems, for pit sump pumps, and for heating, lighting, and ventilating the hoistway, shall be permitted inside the hoistway, machine rooms, control rooms, machinery spaces, and control spaces. <u>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.</u>
OESC 620.51(B)	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.

	<u>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.</u>
OESC 620.51(C)	(C) Location. The disconnecting means shall be located where it is readily accessible to qualified persons. <u>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.</u>
OESC 620.51(C)(4)	(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 <u>or lift and within 1.83 m (six feet) of the motor controller. The disconnecting means shall not be located in the runway enclosure.</u>
OESC 620.51(C)(5)	(C)(5) Residential installations. <u>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.</u>
OESC 620.86	<u>620.86 Flexible Metal Conduit. Where flexible metal conduit is utilized between the disconnecting means specified in Section 620.51 and the elevator controller, an equipment grounding conductor shall be provided within the raceway and sized per Section 250.122 and Table 250.122.</u>
See Statewide Alternate Method ruling 09-01	Article 625 This article indicates that electric vehicle charging equipment is considered a continuous load. The SAM ruling 09-01 recognizes a demand factor table for calculating feeders and services that supply multiple units of Electric Vehicle Supply Equipment.
OESC 625.43 (New Item)	<u>625.43 Grounding Electrodes. When supplied from equipment with a grounding electrode system, an additional grounding electrode shall not be required at the electrical vehicle supply equipment.</u>
OESC 645.2	645.2 Definitions Critical Operations Data System. An information technology equipment system that <u>has been designated by the building owner as</u> requires requiring continuous operation. for reasons of public safety, emergency management, national security, or business continuity.
OESC 645.10	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 <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).
OESC 645.15 Errata #1, line 13	645.15 Equipment Grounding and Bonding. (Delete second sentence). Power systems derived within listed information technology equipment that supply information technology systems through receptacles or cable assemblies supplied as part of this equipment shall not be considered separately derived for the purpose of applying 250.30.

<p>OESC 680.25(A)(1)</p> <p>Errata #2, lines 31 & 32 to delete text rejected by the committee</p>	<p>680.25 Feeders.</p> <p>(A) Wiring Methods.</p> <p>(1) Feeders. Feeders shall be installed in rigid metal conduit or intermediate metal conduit. (1) through (6)</p> <p><i>Exception: A feeder within a one-family dwelling unit or two-family dwelling unit between remote panelboard and service equipment shall be permitted to run in flexible metal conduit or an approved cable assembly that includes an insulated equipment grounding conductor within its outer sheath.</i></p> <p>(B) Grounding. (second sentence) For other than (1) existing feeders covered in 680.25(A), exception, or (2) feeders to separate buildings that do not utilize an insulated equipment grounding conductor in accordance with 680.25(B)(2), this equipment grounding conductor shall be insulated.</p>
<p>OESC 680.42(B)(4)</p>	<p>680.42 Outdoor Installations.</p> <p>(B) Bonding. [equipotential bonding not required where (1) through (4) are met:]</p> <p>(4) (second sentence) The height of nonconductive external steps <u>or deck</u> for exit and entry . . .</p>
<p>OESC 690.3 (add Note)</p>	<p>690.3 Other Articles.</p> <p><i>Exception: Solar PV systems, equipment, or wiring installed in a hazardous (classified) location shall also comply with the applicable portions of Articles 500 through 516.</i></p> <p><u>Informational Note: Raceways and conduit systems installed for use with solar photovoltaic systems may be subject to elevated temperatures and may require the use of expansion fittings and ambient temperature adjustment. See 300.7(B), and table 310.15(B)(3)(c) for adjustment factors.</u></p>
<p>OESC 690.11</p>	<p>690.11 Arc-Fault Circuit Protection (Direct Current).</p> <p><u>This requirement becomes effective April 1, 2016.</u></p>
<p>OESC 690.12</p>	<p>690.12 Rapid Shutdown of PV Systems on Buildings.</p> <p><u>This requirement becomes effective October 1, 2017.</u></p>
<p>OESC 690.15</p>	<p><u>690.15(C) Direct-Current Combiner Disconnect.</u></p> <p><u>If the requirements of 690.12 have not been met, this disconnecting means shall comply with the following additional requirements:</u></p> <p><u>(1) Located where accessible.</u></p> <p><u>(2) Lockable and externally operable. Other effective disconnecting means such as electrical interlocking shall be permitted by special permission.</u></p> <p><u>(3) A permanent plaque or directory denoting the location of all disconnecting means required by 690.13 and 690.14 shall be provided at the service disconnecting means.</u></p>
<p>OESC 690.31(G)(1)</p> <p>OESC 690.31(G)(5)</p>	<p>690.31 Methods Permitted</p> <p>(G)(1) Embedded in Building Surfaces. Where circuits are <u>Circuit conductors shall not be embedded in built-up, laminate, or membrane roofing materials in roof areas not covered by PV modules and associated equipment. The location of circuits shall be clearly marked using a marking protocol that is approved as being suitable for continuous exposure to sunlight and weather.</u></p> <p>(G)(5) Beneath Roofs. <u>Wiring methods shall not be installed within 45 cm (18 in.) of the roof decking or sheathing except where directly below the roof surface covered by PV modules and associated equipment. Circuits shall be run perpendicular to the roof penetration point to supports a minimum of 45 cm (18 in.) below the roof decking.</u></p> <p><u>Informational Note: The 45 cm (18 in.) requirement is to prevent accidental damage from saws used by fire fighters for roof ventilation during a structure fire.</u></p>

OESC 690.47	<p>690.47 Grounding Electrode System. <u>Where a grounding electrode conductor is required by 690.47(A), (B)(C) and (D), it shall not be smaller than 6AWG copper or 4 AWG aluminum.</u></p>
OESC 692.6	<p>692.6 Listing Requirement. The fuel cell system shall be evaluated and listed certified for its intended application prior to installation final approval.</p>
OESC 700	<p>ARTICLE 700 Emergency Systems <u>Building Officials and inspectors administering and enforcing the state building code under ORS 455.148 and 455.150, shall assure 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.</u></p>
OESC 700.28	<p>700.28 Selective Coordination. Emergency system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices. <u>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.</u></p>
(Exceptions)	<p><i>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.</i> <i>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.</i></p>
OESC 701.27	<p>701.27 Selective Coordination. Legally required standby system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices. <u>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.</u></p>
(Exceptions)	<p><i>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.</i> <i>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.</i></p>
OESC 705.12(D)	<p>705.12(D) Utility-Interactive Inverters. The output of a utility-interactive inverter shall be permitted to be connected to the load side of the service disconnecting means of the other source(s) at any distribution equipment on the premises. Where distribution equipment, including switchgear, switchboards, or panelboards, is fed simultaneously by a primary source(s) of electricity and one or more utility-interactive inverters, and where this distribution equipment is capable of supplying multiple branch circuits or feeders, or both, the interconnecting provisions for the utility-interactive inverter(s) shall comply with 705.12(D)(1) through (D)(6).</p>
OESC 705.12(D)(6)	<p>Note: The requirement in 705.12(D)(6) becomes effective April 1, 2016.</p>

<p>OESC 708.1</p>	<p>708.1 Scope. The provisions of this article apply to the installation, operation, monitoring, control, and maintenance of the portions of the premises wiring system intended to supply, distribute, and control electricity to designated critical operations areas (DCOA) in the event of disruption to elements of the normal system.</p> <p>Critical operations <u>areas and critical operations</u> 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 <u>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</u> system. These <u>Critical operations power</u> systems <u>can</u> include but are not limited to power systems, HVAC, fire alarm, security, communications, and signaling for designated critical operations areas.</p>
<p>OESC 708.54</p>	<p>708.54 Coordination. Critical operations power system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.</p> <p><u>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.</u></p>
<p>(Exceptions)</p>	<p><i>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.</i></p> <p><i>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.</i></p>
<p>OESC 725.24</p>	<p>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(D) <u>and 300.11.</u></p>
<p>OESC 760.24</p>	<p>760.24 Mechanical Execution of Work.</p> <p>(A) General. Fire alarm circuits shall be installed in a neat workmanlike manner. Cables and conductors installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be supported by straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also comply with 300.4(D) <u>and 300.11.</u></p>
<p>OESC 760.41(B)</p>	<p>760.41 NPFLA Circuit Power Source Requirements</p> <p>(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.</p>

<p>OESC 760.121(B)</p>	<p>760.121 Power Sources for PLFA Circuits</p> <p>(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.</p>
<p>OESC 770.24</p>	<p>770.24 Mechanical Execution of Work. Optical fiber cables shall be installed in a neat and workmanlike manner. Cables 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 secured by hardware including 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(D) through (G) and 300.11.</p>
<p>Errata 2, line 42</p>	<p>Significant changes were made in 770.179(F). See Errata for details.</p>
<p>OESC 800.24</p>	<p>800.24 Mechanical Execution of Work. Communications circuits and equipment shall be installed in a neat and workmanlike manner. Cables 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 secured by hardware, including 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(D) and 300.11.</p>
<p>OESC 820.24</p>	<p>820.24 Mechanical Execution of Work. Community television and radio distribution systems shall be installed in a neat and workmanlike manner. Coaxial cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cables will not be damaged by normal building use. Such cables shall be secured by hardware including 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(D) and 300.11.</p>
<p>OESC 830.24</p>	<p>830.24 Mechanical Execution of Work. Network-powered broadband communications circuits and equipment shall be installed in a neat and workmanlike manner. Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cables will not be damaged by normal building use. Such cables shall be secured by hardware including straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also conform to 300.4 and 300.11.</p>

<p>OESC 210.8 Errata</p>	<p>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 (C) (D). The ground-fault circuit-interrupter shall be installed in a readily accessible location.</p>
<p>OESC 210.8 (Notes) (Exception)</p>	<p>Informational Note <u>No. 1</u>: See 215.9 for ground-fault circuit-interrupter protection for personnel on feeders. <u>Informational Note No. 2: See 760.41(B) and 760.121(B) for power supply requirements for fire alarm systems.</u> <u>Exception: A single receptacle labeled as “not GFCI protected” supplying only a permanently installed fire alarm or burglar alarm system shall not be required to have ground-fault circuit-interrupter protection.</u></p>
<p>OESC 210.8(A)(2) (Exceptions)</p>	<p>210.8(A) Dwelling Units. All 125-volt, single-phase, 15- and 20- ampere receptacles installed in the locations specified in 210.8(A)(1) through (10) shall have ground-fault circuit-interrupter protection for personnel.</p> <p>(1) Bathrooms</p> <p>(2) Garages, and also accessory buildings that have a floor located at or below grade level not intended as habitable rooms and limited to storage areas, work areas, and areas of similar use</p> <p><u>Exception No. 1 to (2): A single receptacle for each appliance within a dedicated space that, in normal use, is not easily moved from one place to another, that is cord-and-plug connected, and the receptacle is labeled as “not GFCI protected.”</u></p> <p><u>Exception No. 2 to (2): Receptacle ground fault protection shall not be required for a dedicated branch circuit serving a single receptacle for sewage or sump pumps.</u></p> <p><u>Receptacles installed under the exceptions to 210.8(A)(2) shall not be considered as meeting the requirements of 210.52(G).</u></p>
<p>OESC 210.8(A)(4) (Exception)</p>	<p>(3) Outdoors</p> <p>(4) Crawl spaces – at or below grade level</p> <p><u>Exception to (4): Receptacle ground fault protection shall not be required for a dedicated branch circuit serving a single receptacle for sewage or sump pumps.</u></p>
<p>OESC 210.8(A)(5) (Exceptions)</p>	<p>(5) Unfinished basements – for purposes of this section, unfinished basements are defined as portions or areas of the basement not intended as habitable rooms and limited to storage areas, work areas, and the like</p> <p><u>Exception No. 1 to (5): A single receptacle for each appliance within a dedicated space that, in normal use, is not easily moved from one place to another, that is cord-and-plug connected, and the receptacle is labeled as “not GFCI protected.”</u></p> <p><u>Exception No. 2 to (5): Receptacle ground fault protection shall not be required for an individual branch circuit serving a single receptacle for sewage or sump pumps.</u></p> <p>Receptacles installed under the exceptions to 210.8(A)(5) shall not be considered as meeting the requirements of 210.52(G).</p>
<p>OESC 210.8(A)(7) (Exception)</p>	<p>(6) Kitchens – where the receptacles are installed to serve the countertop surfaces</p> <p>(7) Sinks – where receptacles are installed within 1.8 m (6 ft) of the outside edge of the sink</p> <p><u>Exception to (7): A single receptacle for each appliance or a duplex receptacle serving two appliances within a dedicated space that, in normal use, is not easily moved from one place to another, that is cord-and-plug connected, and the receptacle is labeled as “not GFCI protected.”</u></p> <p>(8) Boathouses</p> <p>(9) Bathtubs or shower stalls – where receptacles are installed within 1.8 m (6ft) of the outside edge of the bathtub or shower stall</p>

<p>OESC 210.8(A)(10) (Exception)</p> <p>OESC 210.8(B)</p>	<p>(10) Laundry areas</p> <p><u>Exception to (10): A single receptacle for each appliance within a dedicated space that, in normal use, is not easily moved from one place to another, that is cord-and-plug connected, and the receptacle is labeled as "not GFCI protected."</u></p> <p>210.8(B) Other than Dwelling Units. All 125-volt, single-phase, 15- and 20- ampere receptacles installed in the locations specified in 210.8(B)(1) through (8) shall have ground-fault circuit-interrupter protection for personnel. . .</p> <p>(3) Rooftops (4) Outdoors (8) Garages, service bays, and similar areas other than vehicle exhibition halls and showrooms</p> <p><u>Exception No. 1 to (3), (4) and (8): Receptacle ground fault protection shall not be required for an individual branch circuit serving receptacle for sewage or sump pumps.</u></p>
<p>OESC 210.12(A) (Exceptions) Statewide Interpretation</p> <p>OESC 210.12(B)</p>	<p>Arc-Fault Circuit-Interrupter Protection.</p> <p>(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, <u>alcoves</u>, laundry areas, or similar rooms or areas shall be protected by any of the means described in 210.12(A)(1) through (6):</p> <p><u>Exception No. 1: Where an individual branch circuit to a fire alarm system installed in accordance . .</u></p> <p><u>Exception No. 2: AFCI protection shall not be required on GFCI protected receptacles installed in dining rooms.</u></p> <p><u>Exception No 3: AFCI protection shall not be required for optional, dedicated outlets that supply equipment known to cause unwanted tripping of AFCI devices [see Statewide Code Interpretation for 210.12 (A)].</u></p> <p><u>Exception No 4: AFCI protection shall not be required on branch circuits supplying receptacles or appliances fastened in place located in hallways, kitchens and laundry areas.</u></p> <p>(B) Branch Circuit Extensions or Modifications – Dwelling Units. In any of the areas specified in 210.12(A), where branch-circuit wiring is modified, replaced, or extended, the branch circuit shall be protected by one of <u>comply with</u> the following:</p> <p><u>(1) A listed combination type AFCI located at the origin of the branch circuit Extensions or modifications of existing circuits shall not require the installation of AFCI protection.</u></p> <p><u>(2) A listed outlet branch-circuit type AFCI located at the first receptacle outlet of the existing branch circuit Replacement or upgrading of a service or panelboard shall not require that existing circuits be protected by AFCI devices.</u></p> <p><u>(3) Where an existing branch circuit is replaced, the installation of AFCI protection shall be required.</u></p> <p><u>Exception: AFCI protection shall not be required where the extension of the existing conductors is not more than 1.8 m (6-ft) and does not include any additional outlets or devices.</u></p>
<p>OESC 210.52 (C)(1) (Exception)</p>	<p>210.52 Dwelling Unit Receptacle Outlets.</p> <p>(C)(1) Wall Countertop Spaces.</p> <p><u>Exception: Receptacle outlets shall not be required on a wall directly behind a range, counter-mounted cooking unit, or sink in the installation described in Figure 210.52(C)(1). Despite Figure 210.52(C)(1), no receptacle shall be required behind a range, counter-mounted cooking unit, or sink mounted in corner.</u></p>

<p>OESC 210.52(C)(2)</p>	<p>(C)(2) Island Countertop-Spaces. At least one receptacle outlet shall be installed at each island countertop space with a long dimension of 600 mm (24 in.) or greater and a short dimension of 300 mm (12 in.) or greater.</p>
<p>OESC 210.52(C)(3)</p>	<p>(C)(3) Peninsular Countertop Spaces. At least one receptacle outlet shall be installed at each peninsular countertop space with a long dimension of 600 mm (24 in.) 1.05 m (42 in.) or greater and a short dimension of 300 mm (12 in.) or greater. A peninsular countertop is measured from the connecting edge.</p>
<p>OESC 210.52(C)(4)</p>	<p>(C)(4) Separate Spaces. Countertop spaces separated by rangetops, refrigerators, or sinks shall be considered as separate countertop spaces in applying the requirements of 210.52(C)(1). If a range, counter-mounted cooking unit, or sink is installed in an island or a peninsular countertop and the depth of the countertop behind the range, counter-mounted cooking unit, or sink is . . .</p>
<p>OESC 210.52(E)(3) (Exception)</p>	<p>(E)(3) Balconies, Decks, and Porches. <u>Exception 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.</u></p>
<p>OESC 210.52(G)(1) (Exception)</p>	<p>210.52(G) For a one-family dwelling, at least one receptacle outlet shall be installed in the areas specified in 210.52(G)(1) through (3). These receptacles shall be in addition to receptacles required for specific equipment. (1) Garages. In each attached garage and in each detached garage with electric power. The branch circuit supplying this receptacle(s) shall not supply outlets outside of the garage. At least one receptacle outlet shall be installed for each car space. <u>Exception: A 20 ampere branch circuit shall be permitted to supply the outlet(s) specified in 210.52 (E).</u></p>
<p>OESC 210.52(I)</p>	<p>(I) 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. Alcoves. In dwelling units, alcoves shall have at least one receptacle installed. These outlets shall be in addition to the required hallway outlets. <u>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.</u></p>
<p>OESC 210.63 (Exceptions)</p>	<p>210.63 Heating, Air Conditioning, and Refrigeration Equipment Outlet. <u>Exception No. 1: A receptacle outlet shall not be required at one- and two-family dwellings for the service of evaporative coolers.</u> <u>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.</u></p>
<p>OESC 225.36 (Exception)</p>	<p>225.36 Type. 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. <u>Exception: In single light pole installations that have the connections to the light pole circuit made in a location accessible only to qualified persons, certified in-line fuse holders shall be allowed, subject to special permission.</u></p>
<p>OESC 230.40 (Exception)</p>	<p>230.40 Number of Service-Entrance Conductor Sets. <u>Exception No. 3: A single-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 separate grounded conductor and equipment grounding conductor shall be installed to meet the provisions of Article 225.</u></p>

<p>OESC 230.43 (Exception)</p>	<p>230.43 Wiring Methods for 1000 Volts, Nominal, or Less. <u>Exception: Items (13) and (15) are limited to traffic control devices and highway lighting poles.</u></p>
<p>OESC 230.70(A)(1) (Exception)</p>	<p>230.70(A)(1) Readily Accessible Location. <u>Exception: In existing installations where only the service panel or meter base is changed and the existing service conductors meet the ampacity requirements, or the existing conduit is of sufficient size to install new conductors, the panel may remain at the present location providing all requirements of Section 110.26 and 240.24 are met. This exception does not require a main disconnect located nearest the point of entry.</u></p>
<p>OESC 230.95(C)</p>	<p>230.95 (C) Performance Testing. The ground-fault protection system shall be performance tested when first installed on the site. The test shall be conducted in accordance with instructions that shall be provided with the equipment. <u>This test shall be performed by persons having proper training and experience required to perform and evaluate the results of such performance testing.</u> A written record of this test shall be made and shall be available to the authority having jurisdiction. <u>This report shall be signed by the person(s) performing this test.</u></p>
<p>OESC 250.24(A)(1) (Exception)</p> <p>OESC250.24(B) (Exception)</p>	<p>250.24 Grounding Service-Supplied Alternating-Current Systems. (A)(1) General. Informational Note: See definitions of <i>Service Conductors, Overhead</i>; <i>Service Conductors, Underground</i>; <i>Service Drop</i>; and <i>Service Lateral</i> in Article 100. <u>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 Section 230.95 shall not be performed prior to the above installation requirements. Warning signs shall be installed.</u></p> <p>(B) Main Bonding Jumper. <u>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 Section 230.95 shall not be performed prior to the above installation requirements. Warning signs shall be installed.</u></p>
<p>OESC 250.32 (A)</p> <p>OESC 250.32(B)(1) (Exception)</p>	<p>250.32 Buildings or Structures supplied by a Feeder(s) or Branch Circuits(s). (A) Grounding Electrode. Building(s) or structure(s) supplied by feeder(s) or branch circuits(s) shall have a grounding electrode or grounding electrode system installed in accordance with Part III of Article 250 250.50. The grounding electrode conductor(s) shall be connected in accordance with 250.32(B) or (C). Where there is no existing grounding electrode, the grounding electrode(s) required in 250.50 shall be installed.</p> <p>(B)(1) Supplied by a feeder or Branch Circuit. <u>Exception No.1: For existing and new installations made in compliance with previous editions the 2005 edition of this Code that permitted such connection, the grounded conductor run with the supply to the building or structure shall be permitted to serve as the ground-fault return path if all of the following requirements continue to be met:</u></p>

	<p>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.</p> <p><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></p>
OESC 334.15(C)	<p>(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.</p>
OESC 394.12 (Exception)	<p>394.12 Uses Not Permitted. Concealed knob-and-tube wiring shall not be used in the following:</p> <p>(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</p> <p><u>Exception: The provisions of Section 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:</u></p> <p><u>(1) The visible wiring shall be inspected by a certified electrical inspector or a general supervising electrician employed by a licensed electrical contractor.</u></p> <p><u>(2) All defects found during the inspection shall be repaired prior to the installation of insulation.</u></p> <p><u>(3) Repairs, alterations or extensions of or to the electrical systems shall be inspected by a certified electrical inspector.</u></p> <p><u>(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 2005 Edition. Foamed in place insulation shall not be used with knob-and-tube wiring.</u></p> <p><u>(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.</u></p> <p><u>(6) All knob-and-tube circuits shall have overcurrent protection in compliance with the 60 degree C column of Table 310-16 of NFPA 70-2008. 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 Section 240.53.</u></p>
OESC 400.7(A)(12)	<p>400.7(A) Uses. Flexible cords and cables shall be used only for the following:</p> <p><u>(12) Listed assemblies of fixtures and controllers, approved by the Federal Aviation Administration.</u></p>
OESC 404.2(C)	<p>404.2(C) Switches Controlling Lighting Loads. The grounded circuit conductor for the controlled lighting circuit shall be provided at the location where switches control lighting loads that are supplied by a grounded general-purpose branch circuit for other than the following:</p> <p><u>(8) Where replacing an existing device with one of similar characteristics.</u></p>
OESC 406.4(D)(4)	<p>406.4(D) Replacements.</p> <p>(4) Arc Fault Circuit Interrupter Protection. Delete entire section (4)(1), (2), and (3)</p>
OESC 406.12 (Exception)	<p>406.12 Tamper-Resistant Receptacles.</p> <p><i>Exception to (A), (B), and (C): Receptacles in the following locations shall not be required to be tamper resistant:</i></p> <p><u>(5) A multi-outlet assembly mounted on the underside of a cabinet above a countertop.</u></p>

<p>OESC 422.21</p>	<p>422.21 Covering of Combustible Material at Outlet Boxes. Any combustible ceiling finish exposed between the edge of a ceiling suspended (paddle) fan canopy or pan and an outlet box <u>having a surface area of 1160 mm² (180 in.²)</u> shall be covered with noncombustible material.</p>
<p>OESC 422.34</p>	<p>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). <u>Unit switches on ranges, ovens and dishwashers shall not be considered the disconnect required by this section.</u></p>
<p>OESC 424.44 OESC 424.44(G)</p>	<p>424.44 Installation of Cables in Concrete or Poured Masonry Floors. (G) Ground-Fault Circuit-Interrupter Protection. Ground-fault circuit-interrupter protection for personnel shall be provided for cables installed in <u>all</u> electrically heated floors of bathrooms, kitchens, and in hydromassage bathtub locations.</p>
<p>Errata</p>	<p>490.48 Substations. Errata 70-14-1 line 7 alters this article significantly</p>
<p>OESC 500.8(A)</p>	<p>500.8 Equipment (A) Suitability. <u>“Suitability of identified equipment” shall be determined by one of the following: as used in Article 500.8 (A) means that equipment meets the requirements of ORS 479.760.</u> (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. <i>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.</i></p>
<p>OESC 547.5(G)</p>	<p>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: <u>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.</u></p>
<p>OESC 547.10(A) Bonding of Equipotential Planes (Exception)</p>	<p>547.10(A) Where Required. 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. <u>Exception: 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.</u></p>
<p>OESC 553.4</p>	<p>553.4 Location of Service Equipment. The service equipment for a floating building shall be located adjacent to, but not in or on, the building or any floating structure. The main overcurrent protective device that feeds the floating structure shall have ground fault protection not exceeding 100 mA. Ground fault protection of each individual branch or feeder circuit shall be permitted as a suitable alternative.</p>

<p>OESC 555.3</p>	<p>555.3 Ground Fault Protection. The main overcurrent protective device that feeds the marina shall have ground fault protection not exceeding 100 mA. Ground-fault protection of each individual branch or feeder circuit shall be permitted as a suitable alternative.</p>
<p>OESC 590.4(D)(2) (Exception)</p>	<p>590.4(D) Receptacles. (2) Receptacles in Wet Locations. All 15- and 20-ampere, 125- and 250-volt receptacles installed in a wet location shall comply with 406.9(B)(1). <u>Exception No. 1: A construction temporary service installed prior to April 1, 2016 that had been previously installed and energized prior to October 1, 2014, shall not be required to comply with the requirements for "extra duty" box hood rating and weather resistant receptacles in 406.9(B)(1).</u></p>
<p>OESC 620.1 (Note)</p>	<p>620.1 Scope. This article covers the installation of electrical equipment and wiring used in connection with elevators, dumbwaiters, escalators, moving walks, platform lifts, and stairway chairlifts. Informational Note No. 1: For further information, see ASME A17.1-2010/CSA B44-10, Safety code for Elevators and Escalators. <u>the Oregon Elevator Specialty Code as adopted in OAR chapter 918, division 400.</u></p>
<p>OESC 620.2</p>	<p>620.2 Definitions. (Before Signal Equipment.) <u>Separate Branch Circuit. A circuit dedicated solely for the purpose intended without other devices, systems or equipment connected to the circuit.</u></p>
<p>OESC 620.5</p>	<p>620.5 Working Clearances. Working space shall be provided about controllers, disconnecting means, and other electrical equipment in accordance with 110.26(A). Where conditions of maintenance and supervision ensure that only qualified persons examine, adjust, service, and maintain the equipment, the clearance requirements of 110.26(A) shall not be required where any of the conditions in 620.5(A) through (D) are met. <u>Where machine room doors swing inward, the arc of the door shall not encroach on those clearances required by section 110.26(A).</u></p>
<p>OESC 620.11(A)</p>	<p>620.11 (A) Hoistway Door Interlock Wiring. The conductors to the hoistway door interlocks from the hoistway riser shall be flame retardant and suitable for a temperature of not less than 200° C (392°F). Conductors shall be Type SF or equivalent <u>except where not required by the Elevator Safety Code (ASME A17.1).</u></p>
<p>OESC 620.37(A)</p>	<p>620.37(A) Uses Permitted. Only such electrical wiring, raceways, and cables used directly in connection with the elevator or dumbwaiter, including wiring for signals, for communication with the car, for lighting, heating, air conditioning, and ventilating the elevator car, for fire detecting systems, for pit sump pumps, and for heating, lighting, and ventilating the hoistway, shall be permitted inside the hoistway, machine rooms, control rooms, machinery spaces, and control spaces. <u>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.</u></p>
<p>OESC 620.51(B)</p>	<p>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.</p>

	<u>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.</u>
OESC 620.51(C)	(C) Location. The disconnecting means shall be located where it is readily accessible to qualified persons. <u>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.</u>
OESC 620.51(C)(4)	(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 <u>or lift and within 1.83 m (six feet) of the motor controller. The disconnecting means shall not be located in the runway enclosure.</u>
OESC 620.51(C)(5)	<u>(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.</u>
OESC 620.86	<u>620.86 Flexible Metal Conduit. Where flexible metal conduit is utilized between the disconnecting means specified in Section 620.51 and the elevator controller, an equipment grounding conductor shall be provided within the raceway and sized per Section 250.122 and Table 250.122.</u>
See Statewide Alternate Method ruling 09-01	Article 625 This article indicates that electric vehicle charging equipment is considered a continuous load. The SAM ruling 09-01 recognizes a demand factor table for calculating feeders and services that supply multiple units of Electric Vehicle Supply Equipment.
OESC 625.43 (New Item)	<u>625.43 Grounding Electrodes. When supplied from equipment with a grounding electrode system, an additional grounding electrode shall not be required at the electrical vehicle supply equipment.</u>
OESC 645.2	645.2 Definitions <u>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.</u>
OESC 645.10	<u>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).</u>
OESC 645.15 Errata #1, line 13	<u>645.15 Equipment Grounding and Bonding. (Delete second sentence). Power systems derived within listed information technology equipment that supply information technology systems through receptacles or cable assemblies supplied as part of this equipment shall not be considered separately derived for the purpose of applying 250.30.</u>

<p>OESC 680.25(A)(1)</p> <p>Errata #2, lines 31 & 32 to delete text rejected by the committee</p>	<p>680.25 Feeders.</p> <p>(A) Wiring Methods.</p> <p>(1) Feeders. Feeders shall be installed in rigid metal conduit or intermediate metal conduit. (1) through (6)</p> <p><i>Exception: A feeder within a one-family dwelling unit or two-family dwelling unit between remote panelboard and service equipment shall be permitted to run in flexible metal conduit or an approved cable assembly that includes an insulated equipment grounding conductor within its outer sheath.</i></p> <p>(B) Grounding. (second sentence) For other than (1) existing feeders covered in 680.25(A), exception, or (2) feeders to separate buildings that do not utilize an insulated equipment grounding conductor in accordance with 680.25(B)(2), this equipment grounding conductor shall be insulated.</p>
<p>OESC 680.42(B)(4)</p>	<p>680.42 Outdoor Installations.</p> <p>(B) Bonding. [equipotential bonding not required where (1) through (4) are met:]</p> <p>(4) (second sentence) The height of nonconductive external steps or deck for exit and entry . . .</p>
<p>OESC 690.3 (add Note)</p>	<p>690.3 Other Articles.</p> <p><i>Exception: Solar PV systems, equipment, or wiring installed in a hazardous (classified) location shall also comply with the applicable portions of Articles 500 through 516.</i></p> <p><u>Informational Note: Raceways and conduit systems installed for use with solar photovoltaic systems may be subject to elevated temperatures and may require the use of expansion fittings and ambient temperature adjustment. See 300.7(B), and table 310.15(B)(3)(c) for adjustment factors.</u></p>
<p>OESC 690.11</p>	<p>690.11 Arc-Fault Circuit Protection (Direct Current).</p> <p><u>This requirement becomes effective April 1, 2016.</u></p>
<p>OESC 690.12</p>	<p>690.12 Rapid Shutdown of PV Systems on Buildings.</p> <p><u>This requirement becomes effective October 1, 2017.</u></p>
<p>OESC 690.15</p>	<p><u>690.15(C) Direct-Current Combiner Disconnect.</u></p> <p><u>If the requirements of 690.12 have not been met, this disconnecting means shall comply with the following additional requirements:</u></p> <p><u>(1) Located where accessible.</u></p> <p><u>(2) Lockable and externally operable. Other effective disconnecting means such as electrical interlocking shall be permitted by special permission.</u></p> <p><u>(3) A permanent plaque or directory denoting the location of all disconnecting means required by 690.13 and 690.14 shall be provided at the service disconnecting means.</u></p>
<p>OESC 690.31(G)(1)</p> <p>OESC 690.31(G)(5)</p>	<p>690.31 Methods Permitted</p> <p>(G)(1) Embedded in Building Surfaces. Where circuits are Circuit conductors shall not be embedded in built-up, laminate, or membrane roofing materials in roof areas not covered by PV modules and associated equipment, the location of circuits shall be clearly marked using a marking protocol that is approved as being suitable for continuous exposure to sunlight and weather.</p> <p><u>(G)(5) Beneath Roofs. Wiring methods shall not be installed within 45 cm (18 in.) of the roof decking or sheathing except where directly below the roof surface covered by PV modules and associated equipment. Circuits shall be run perpendicular to the roof penetration point to supports a minimum of 45 cm (18 in.) below the roof decking.</u></p> <p><u>Informational Note: The 45 cm (18 in.) requirement is to prevent accidental damage from saws used by fire fighters for roof ventilation during a structure fire.</u></p>

OESC 690.47	<p>690.47 Grounding Electrode System.</p> <p><u>Where a grounding electrode conductor is required by 690.47(A), (B)(C) and (D), it shall not be smaller than 6AWG copper or 4 AWG aluminum.</u></p>
OESC 692.6	<p>692.6 Listing Requirement. The fuel cell system shall be evaluated and listed <u>certified</u> for its intended application prior to installation <u>final approval</u>.</p>
OESC 700	<p>ARTICLE 700 Emergency Systems</p> <p><u>Building Officials and inspectors administering and enforcing the state building code under ORS 455.148 and 455.150, shall assure 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.</u></p>
OESC 700.28	<p>700.28 Selective Coordination. Emergency system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.</p> <p><u>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.</u></p>
(Exceptions)	<p><i>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.</i></p> <p><i>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.</i></p>
OESC 701.27	<p>701.27 Selective Coordination. Legally required standby system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.</p> <p><u>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.</u></p>
(Exceptions)	<p><i>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.</i></p> <p><i>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.</i></p>
OESC 705.12(D)	<p>705.12(D) Utility-Interactive Inverters. The output of a utility-interactive inverter shall be permitted to be connected to the load side of the service disconnecting means of the other source(s) at any distribution equipment on the premises. Where distribution equipment, including switchgear, switchboards, or panelboards, is fed simultaneously by a primary source(s) of electricity and one or more utility-interactive inverters, and where this distribution equipment is capable of supplying multiple branch circuits or feeders, or both, the interconnecting provisions for the utility-interactive inverter(s) shall comply with 705.12(D)(1) through (D)(6).</p>
OESC 705.12(D)(6)	<p>Note: The requirement in 705.12(D)(6) becomes effective April 1, 2016.</p>

<p>OESC 708.1</p>	<p>708.1 Scope. The provisions of this article apply to the installation, operation, monitoring, control, and maintenance of the portions of the premises wiring system intended to supply, distribute, and control electricity to designated critical operations areas (DCOA) in the event of disruption to elements of the normal system.</p> <p>Critical operations areas and critical operations power systems are those systems so classified 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.</p>
<p>OESC 708.54</p>	<p>708.54 Coordination. Critical operations power system(s) overcurrent devices shall be selectively coordinated with all supply side overcurrent protective devices.</p> <p><u>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.</u></p>
<p>(Exceptions)</p>	<p><i>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.</i></p> <p><i><u>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.</u></i></p>
<p>OESC 725.24</p>	<p>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(D) and 300.11.</p>
<p>OESC 760.24</p>	<p>760.24 Mechanical Execution of Work.</p> <p>(A) General. Fire alarm circuits shall be installed in a neat workmanlike manner. Cables and conductors installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cable will not be damaged by normal building use. Such cables shall be supported by straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also comply with 300.4(D) and 300.11.</p>
<p>OESC 760.41(B)</p>	<p>760.41 NPFLA Circuit Power Source Requirements</p> <p>(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.</p>

<p>OESC 760.121(B)</p>	<p>760.121 Power Sources for PLFA Circuits</p> <p>(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.</p>
<p>OESC 770.24</p>	<p>770.24 Mechanical Execution of Work. Optical fiber cables shall be installed in a neat and workmanlike manner. Cables 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 secured by hardware including 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(D) through (G) and 300.11.</p>
<p>Errata 2, line 42</p>	<p>Significant changes were made in 770.179(F). See Errata for details.</p>
<p>OESC 800.24</p>	<p>800.24 Mechanical Execution of Work. Communications circuits and equipment shall be installed in a neat and workmanlike manner. Cables 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 secured by hardware, including 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(D) and 300.11.</p>
<p>OESC 820.24</p>	<p>820.24 Mechanical Execution of Work. Community television and radio distribution systems shall be installed in a neat and workmanlike manner. Coaxial cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cables will not be damaged by normal building use. Such cables shall be secured by hardware including 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(D) and 300.11.</p>
<p>OESC 830.24</p>	<p>830.24 Mechanical Execution of Work. Network-powered broadband communications circuits and equipment shall be installed in a neat and workmanlike manner. Cables installed exposed on the surface of ceilings and sidewalls shall be supported by the building structure in such a manner that the cables will not be damaged by normal building use. Such cables shall be secured by hardware including straps, staples, cable ties, hangers, or similar fittings designed and installed so as not to damage the cable. The installation shall also conform to 300.4 and 300.11.</p>