



2018 Code Updates

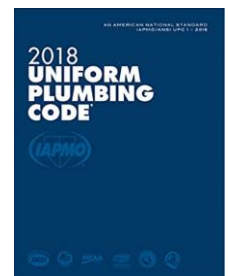
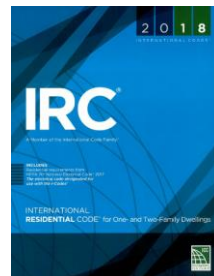
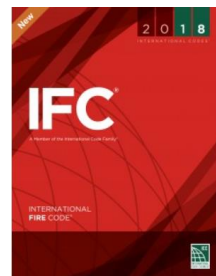
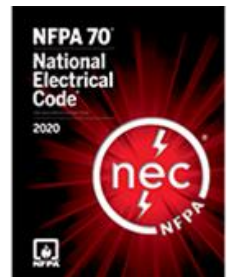
Purpose of Today



- Provide information on the process for National, State and Local code adoptions
- Highlight some significant changes in the 2018 National and State codes
- Provide some resources for learning more about the upcoming code changes
- Get feedback on current local code amendments from permit stakeholders

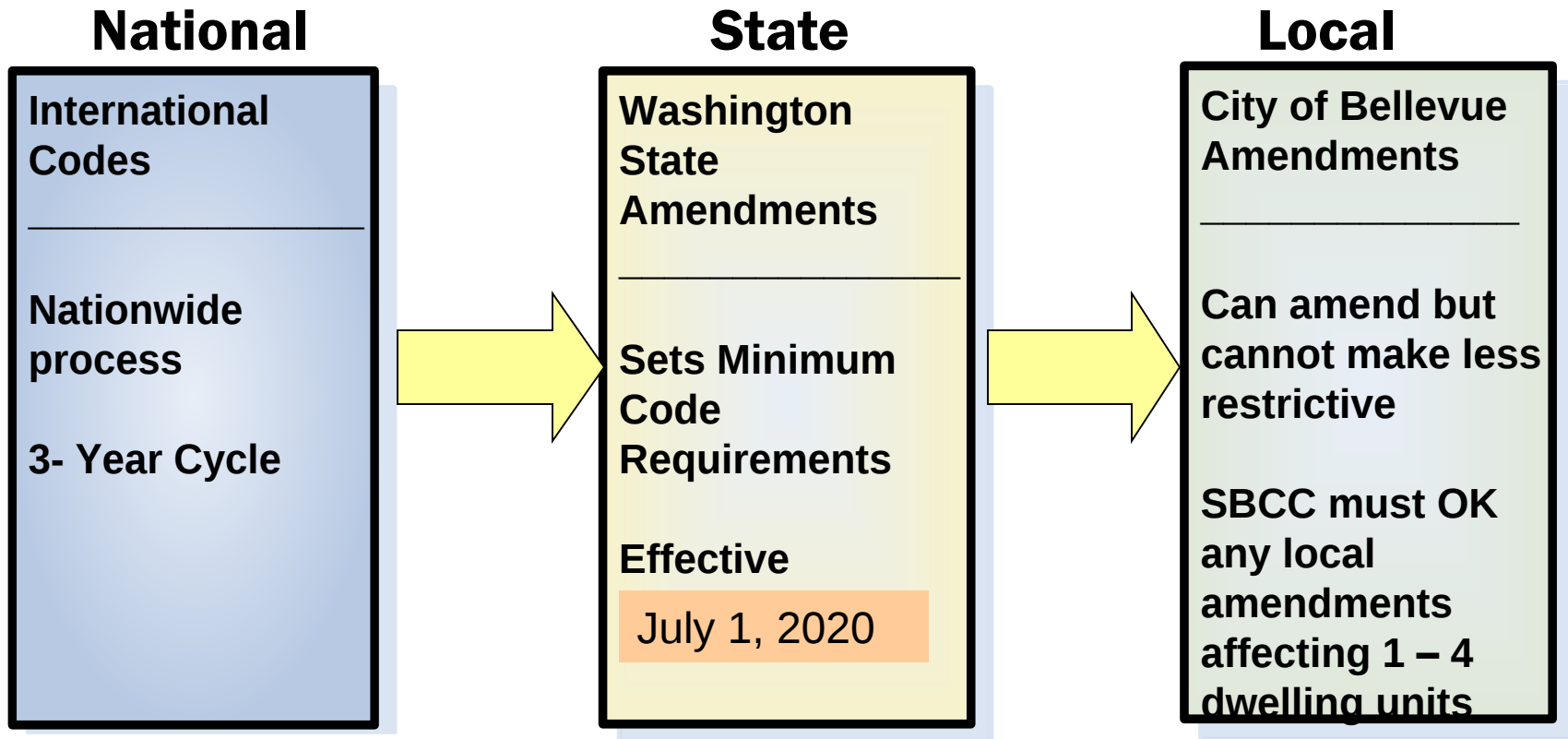
Which Codes?

- 2018 International Building Code
- 2018 International Existing Building Code
- 2018 International Fire Code
- 2018 International Existing Building Code
- 2018 International Residential Code
- 2018 International Mechanical Code
- 2018 International Fuel Gas Code
- 2018 Uniform Plumbing Code
- 2020 National Electrical Code





Washington State Adoption





Bellevue Adoption Process

- August 2019 established mailbox to solicit stakeholder input (2018ICodes@Bellevuewa.gov)
- Open house(s):
 - September 12 – Botanical Gardens
 - October 10 – Botanical Gardens
 - November 21 – Bellevue Downtown Library
- Jan – March 2020 draft proposed code changes
- March – May 2020 City Attorney Review
- April/May 2020 – City Council Study Session
- June 2020 – City Council Adoption
- July 1, 2020 - Implementation

Significant Changes to the IBC

- Occupied Roofs:
 - Occupancy Class (302.1)
 - Height and Areas (503.1.4)
- Column Protection in Light-Frame Construction (704.2 and 704.4.1)
- Extent of Projections (705.2)
- Occupant Load Factor in Business Areas (Table 1004.5 & 1004.8)
- Locking Arrangements in Educational Occupancies (1010.1.4.4)
- OK to Lock Doors Serving Outdoor Areas, with Conditions (1010.1)
- Protection of Elevator Doors Opening onto Rated Corridors (3006.2.1)
- Gender Neutral Restrooms (WS Chapter 29)

Significant Changes to the IBC

- Increased Seismic Load in ASCE 7-16
 - ASCE 7-16, referenced by the 2018 IBC
 - Seismic design loads increased due to research findings in seismology & earthquake engineering
- Incorporation of Basin Effects (WS)
 - Seismic Motions in Bellevue are Amplified by the Basin
 - Research done by UW, USGS and many Seismology Experts
 - Recommendations became official policy in Seattle & Bellevue effective 12/1/18

Tall Wood Buildings

- New TOC Classifications for Type IV Buildings (WS Chapters 2, 4, 5, 6, 7, 17, 31, 33 and Appendix D)
- Fire safety requirements during construction – buildings more than 6 stories (WS IFC 3308.7):
 - 1 layer of noncombustible construction on all building elements more than 4 floor levels except shafts when construction reaches 6 stories.

Wood Innovation and Design Centre in Prince George, British Columbia



At 97 feet tall, the WIDC was the world's tallest all-timber building when completed in 2014. (Photo: Michael Green Architecture)

Significant Changes - IFC

- Ceiling Storage Clearances (315.3.1)
- In Building Radio Systems (510)
 - Now must also comply with NFPA 1221
- Refrigerants (605.13)
- Integrated Systems Testing (901.6.2)
- Balcony Sprinklers (903.3.1.2)
- Attic Sprinklers – 13R Systems; buildings taller than 55' (903.3.1.2.3)

Significant Changes - IFC

- Modification to Smoke Control provisions for non-high rise buildings (WS 909.6.3)
- New marijuana extraction facility requirements (WS Chapter 39)
- Adoption of NFPA 130 for fixed guideway facilities (WS Chapter 40)
- Adoption of International Wildland Urban Interface Code (WS Chapter 82)

Significant Changes - IEBC

- Compliance Options – Prescriptive, Work Area and Performance compliance (301.3).
- Consolidation of requirements in Chapter 3
 - Accessibility requirements (305)
 - Live loads (303.1)
- Structural components damaged by snow events must be repaired based on snow loads for new buildings (405.2.1.1).
- Work areas including more than one-half of a building require wall anchors to be installed at the roof line along concrete and masonry walls (503.7).
- Anchorage of interior unreinforced masonry partitions (906.7).

Significant Changes to the IRC

- An emergency escape and rescue opening is no longer required in basement sleeping rooms where the dwelling has an automatic fire sprinkler system and the basement has a second means of egress or an emergency escape opening (R310.1).
- Smoke detectors in existing areas must be interconnected and may use wireless technology (R314.2.2).
- The townhouse separation provisions now include options for using two separate fire-resistant-rated walls or a common wall (R302.2).
- Townhouse fire resistance rating requirements for separation walls and projections modified (WS R302.2).
- Fire sprinklers required for townhouses with 5 or more attached units (WS R313).

Significant Changes to the IRC

- Heat detection required in attached garages (WS R314).
- Habitable attics are considered a story unless sprinklered (WS R325.6).
- Energy storage system requirements when provided (WS R327).
- Anchor bolts for foundation sills allowed to be wet set (WS R403.1.6).
- New tables (60 psf live load) for deck joists, footings, posts and beams (WS R507).
- Whole-house ventilation testing required (WS M1507.3.3.1).
- Provisions for Tiny Houses – 400 SF and less (WS Appendix Q).
- Sleeping loft provisions (WS R326).

Significant Changes to the IMC

- New whole house ventilation definitions (balanced and distributed) and ventilation rates (WS 403.3 and 403.8).
- Added provisions for pollution control units (202, 506.5.2).
- A new exception was added to recognize Type I kitchen hoods listed for clearances to combustibles of less than 18 inches (507.2.6).
- Added provision for a newer type of non-metallic duct, phenolic duct (603.5.2).
- New provision for high volume large diameter fans (HVLD), also referred to as high volume low speed (HVLS) fans (929, 202).
- Relaxed requirements for sealing of duct joints and seams for Snap-and Button-lock duct joints located within the thermal envelope (603.9).

Significant Changes to the IFGC

- A new Section was added to recognize arc-resistant CSST products (310.2, 310.3).
- The code now allows Schedule 10 steel pipe to be used, whereas previously, Schedule 40 was the lightest steel pipe material allowed. (403.4.2, 403.10.1).
- The code clarifies that appliance shutoff valves located behind movable appliances, such as ranges and clothes dryers, are considered to be provided with the required access (409.5.1).
- The code now calls for the plastic vent pipe material to be labeled as complying with the standards for the specific pipe material as called out by the manufacturer (503.4.1, 503.4.2).
- The clearances between direct-vent appliance vent terminals and openings in the building exterior that could allow combustion products to enter the building have been revised (503.8).

Significant Changes to the Energy Code (Residential)

- Whole-house ventilation system flow rate test must be documented on compliance certificate (WS R401.3).
- High-efficiency lamps changed from 75% to 90% (WS R404.1).
- Electric readiness (power supply and space) for gas water heaters and dryers (WS R404.2).
- Additional energy efficiency requirements are increasing for additions and new construction (WS R406).
- Certified passive house options have been added (WS R407).

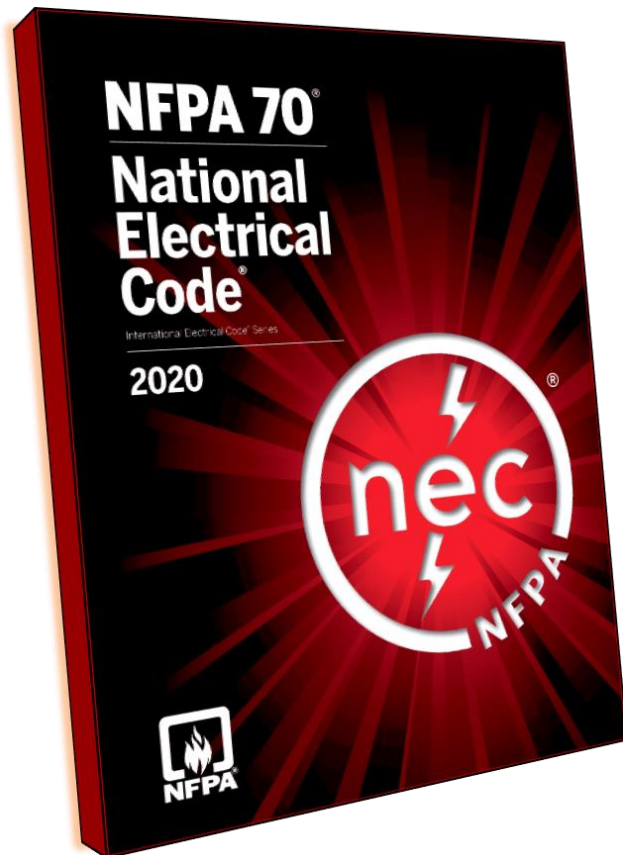
Significant Changes to the Energy Code (Commercial)

- Several updates to reflect national IECC changes to stay current with technology (WS).
- Outcome-based energy budget option added for jurisdictions to consider adopting (WS C401.2 and Appendix F).
- Fenestration U-factor and SHGC revised (WS C402.5).
- Where DOAS is provided increased fenestration above 30% is no longer permitted as an option (WS C402.4.1.1.4).
- Allowable air leakage rate was reduced from .40 to .25 cfm per square foot and buildings are now required to meet criteria (WS C402.5.1.2).

Significant Changes to the Energy Code (Commercial)

- HVAC total system performance ratio added for buildings required to comply with DOAS section (C403.1.1).
- Luminaire level lighting control concept added as an option (C405.2).
- Lighting power allowance options being proposed ranging from a 4.5% to 15% savings in LPA values (Table C405.4.2 (1) and (2)).
- Commissioning requirements have been streamlined (C408).
- Solar readiness required for 40% of roof areas for buildings less than 20 stories (C411).

Significant Changes to the National Electrical Code 2020

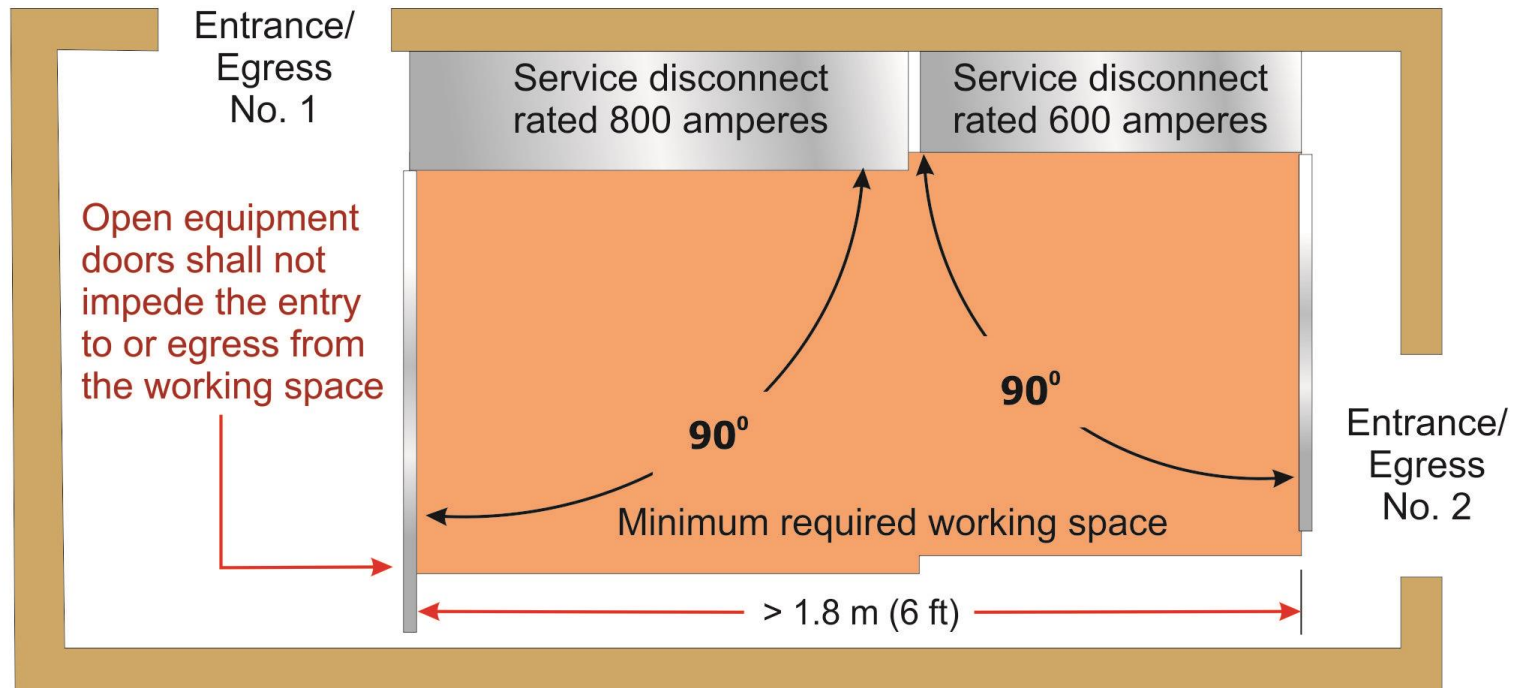


- State Law requires City Jurisdictions to enforce same standard as the State. Washington State has adopted the 2020 NEC effective July 1, 2020.

110.26(C)(2) Large Equipment

- Revisions to “**Large Equipment**” working space to address the hazards presented by two or more service disconnects with combined ratings of **1200 amps or more**
- For service disconnecting means where **two or more service disconnect enclosures** are installed with combined ampere rating is 1200 amperes or more and over 1.8 m (6 ft) wide, the “**Large Equipment**” rules will now apply
- Requirements also added to prevent **open equipment doors** from impeding the entry to or egress from the working space of large equipment

110.26(C)(2) Large Equipment



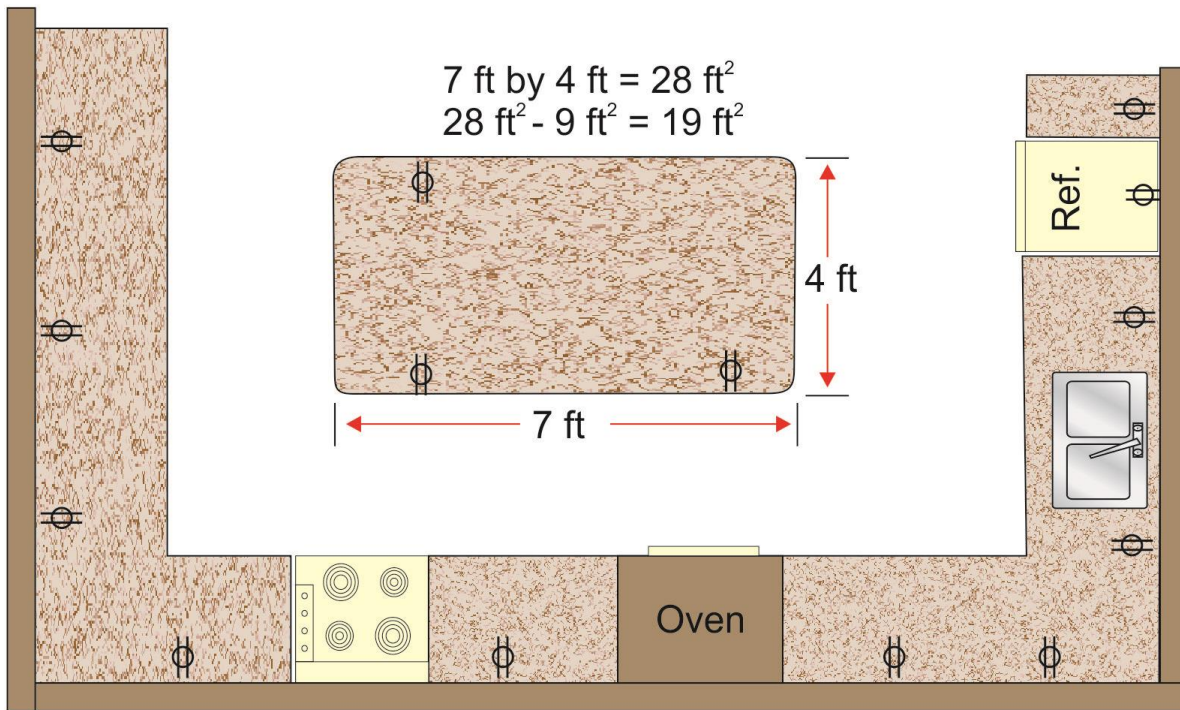
Large equipment is generally required to have an entrance/egress at each end of the working space for equipment rated 1200 amperes or more and over 1.8 m (6 ft) wide or for **service disconnecting means installed in accordance with 230.71 where the combined ampere rating is 1200 amperes or more and over 1.8 m (6 ft) wide**

210.52(C)(2) Island and Peninsulars



At least one receptacle outlet shall be provided for the **first 0.84 m² (9 ft²), or fraction thereof**, of the countertop or work surface

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



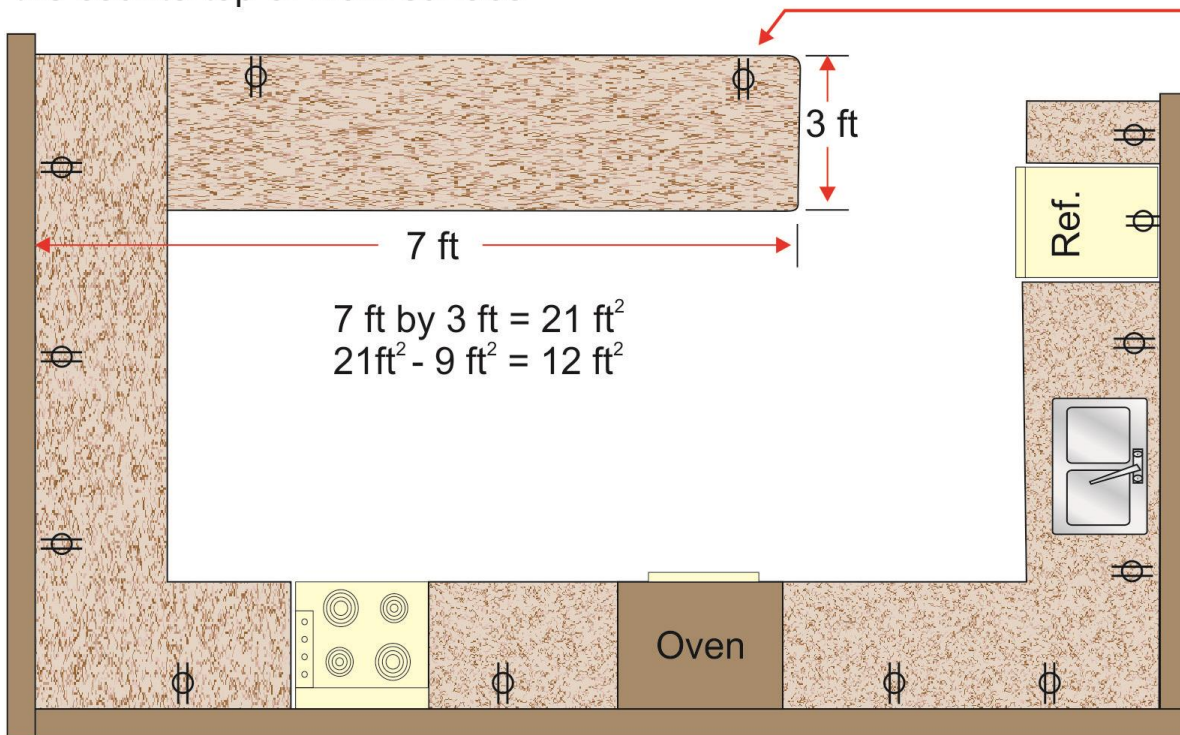
At least one receptacle outlet shall be located within **600 mm (2 ft)** of the outer end of a peninsular countertop or work surface

210.52(C)(2) Island and Peninsulars



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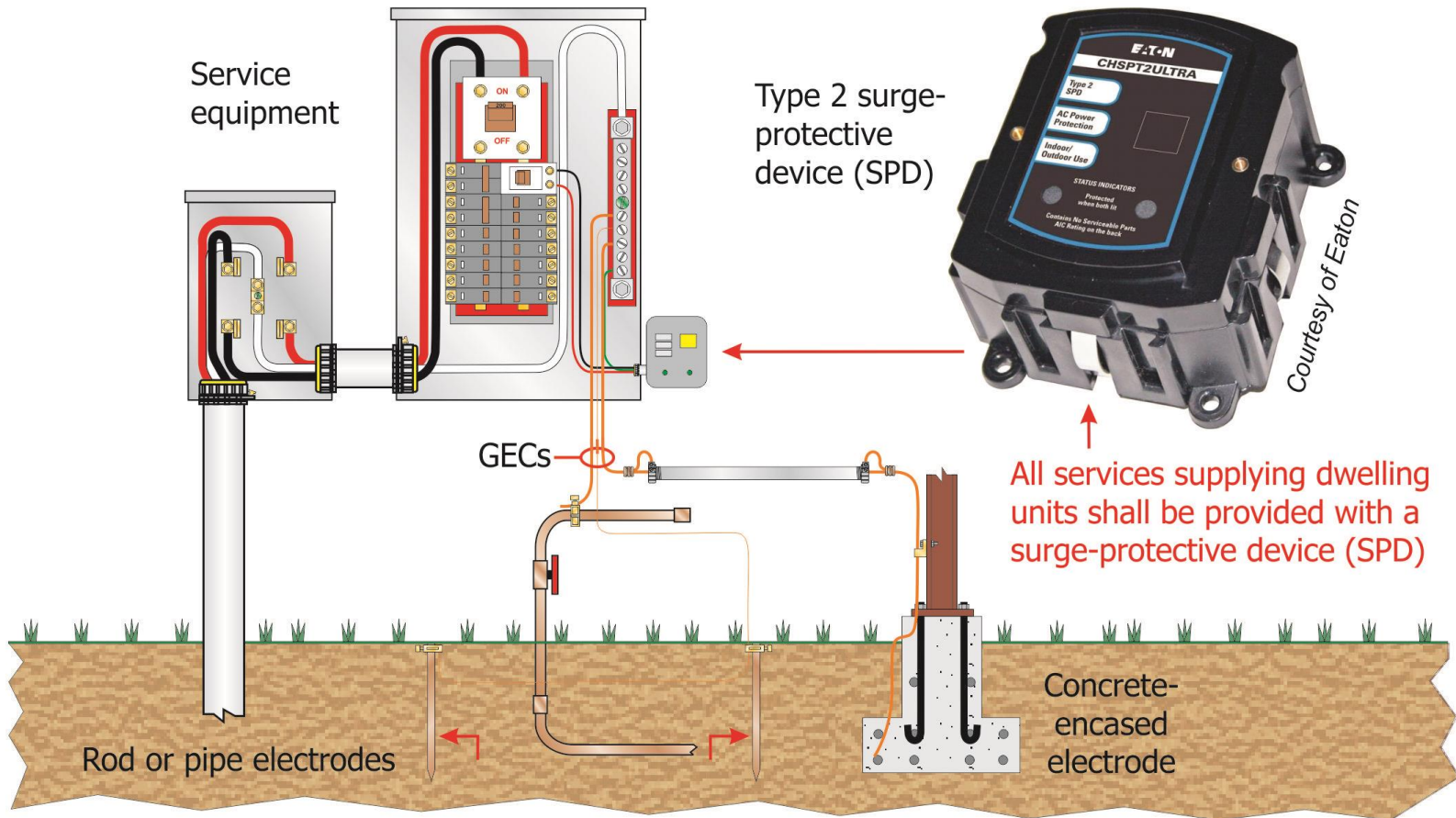
At least one receptacle outlet shall be located within **600 mm (2 ft)** of the outer end of a peninsular countertop or work surface

A peninsular countertop is to be measured from the connected perpendicular wall

230.67 Surge Protection

- New requirement added for **surge protection** on all **services at dwelling units**
- The surge protection device (SPD) must be an **integral part of the service equipment** or **located immediately adjacent to the service equipment**
- Exception permits alternate location provided an SPD is located at **each next level distribution equipment** downstream toward the load
- This SPD required to be either a **Type 1** or **Type 2** SPD
- Applies to **replacement** of residential service equipment as well

230.67 Surge Protection for Dwelling Units



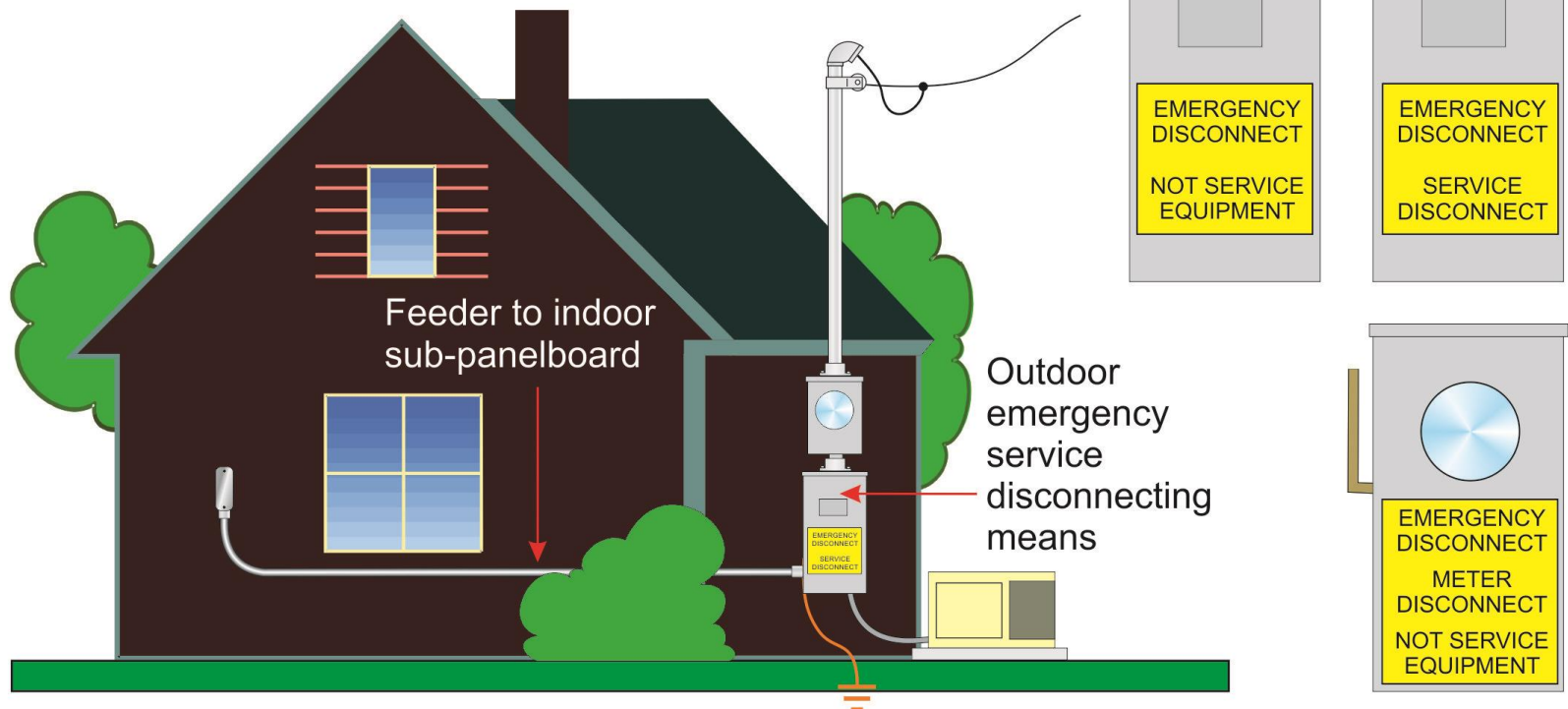
230.85 Emergency Disconnects

- New requirement added requiring an **emergency disconnect** at a **readily accessible outdoor location** for dwelling units
- New outdoor emergency disconnecting requirement primarily based upon providing **first responders** an outdoor accessible emergency or service disconnecting means during an **emergency situation** such as a fire, gas leak, structural damage, flooding, etc.
- Access service disconnecting means for first responders is very challenging when the service disconnect is installed in an indoor location of a dwelling unit area such as a basement
- Requiring first responders to enter a potentially hazardous environment (*such as a burning building*) to find and then activate the service disconnect(s) is not a safe practice

230.85 Exterior Emergency Disconnect(s) for Dwelling Units

All one- and two-family dwelling unit service conductors shall terminate in disconnecting means having a short-circuit current rating equal to or greater than the available fault current, installed in a **readily accessible outdoor location**

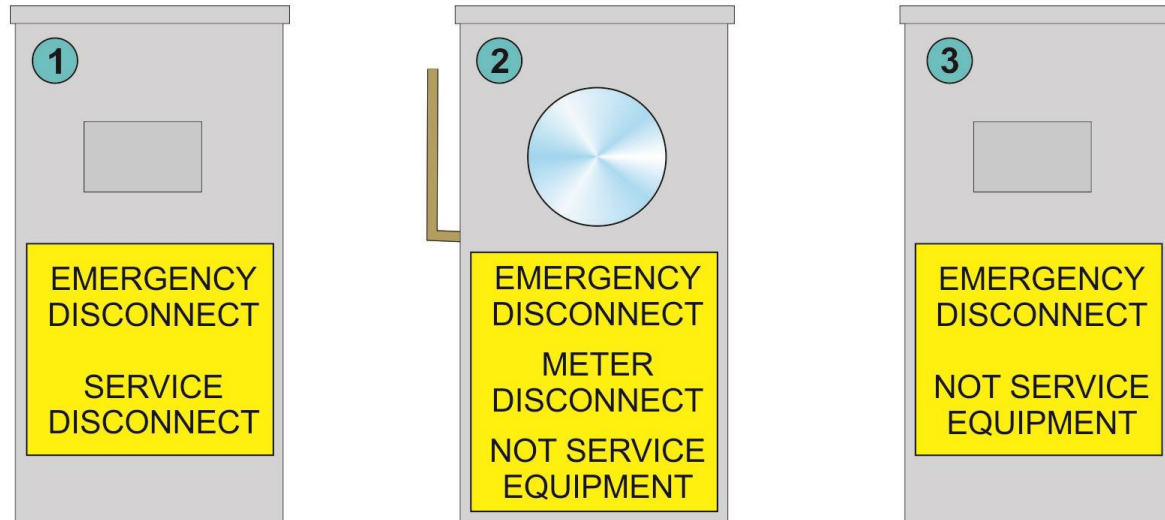
If more than one disconnect, required to be grouped



230.85 Exterior Emergency Disconnect(s) for Dwelling Units



All one- and two-family dwelling unit service conductors shall terminate in disconnecting means installed in a **readily accessible outdoor location** (*grouped if more than one disconnect*)

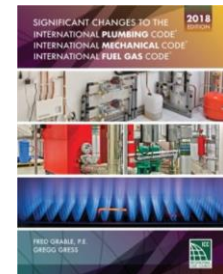
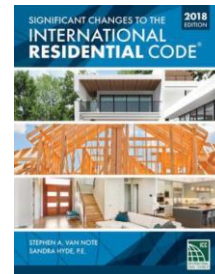
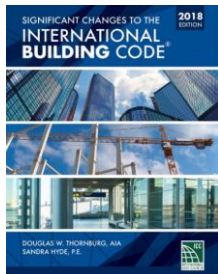


Each disconnect shall be one of the following:

- ① Service disconnects marked as follows: **EMERGENCY DISCONNECT, SERVICE DISCONNECT**
- ② Meter disconnects installed per 230.82(3) and marked as follows: **EMERGENCY DISCONNECT, METER DISCONNECT, NOT SERVICE EQUIPMENT**
- ③ Other listed disconnect switches or circuit breakers on the supply side of each service disconnect that are suitable for use as service equipment and marked as follows: **EMERGENCY DISCONNECT, NOT SERVICE EQUIPMENT**

Resources

- International Codes online
- Washington State Draft Amendments
- Washington State Building Code Act
- Existing Bellevue Amendments (2015)
- Key Changes in the 2018 International Codes
- Training (www.iccsafe.org; www.wabo.org)
- WABO Education Institute 3/23 – 3/27 (Lynnwood)





Questions For You

- Does Bellevue have existing code amendments that cause you problems?
- Are there existing amendments that we should consider deleting or amending?
- Are there amendments that we should consider adding?
- Do you access the City's free codes online?
- Other general feedback?

Questions for Us

