

## NESC Quick Reference

**CAVEAT: This reference was prepared by Oregon Public Utility Commission Staff for educational purposes related to commonly found NESC violations. It is not an official document of the NESC or of the Oregon PUC. This reference is not exhaustive and does not cover inter-related NESC rules. Anyone using this material needs to refer to Oregon PUC regulations, OARs, and the NESC in its entirety.**

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Contents – pages *xii-xxxiii*

### Sections

1. Introduction – pages 1 – 4
2. Definitions – pages 5 – 14
3. References – pages 15 – 16
9. Grounding – pages 17 - 29

### Parts

1. Electric Supply Stations – pages 31 - 68
2. Overhead Lines – pages 69 – 217
3. Underground Lines – pages 219 – 244
4. Operation Rules – pages 245 – 279

### Appendixes

- A. Uniform clearances – pages 281 – 286
- B. Uniform clearance calculations – pages 287 – 289
- C. Example applications for Rule 250C Tables 250-2 and 250-3 – pages 290 – 300
- D. Determining maximum anticipated per-unit overvoltage factor at the worksite – page 301
- E. Bibliography – pages 302 – 305

Index – pages 307 - 328

### Grounds/Bonds – Section 9

General requirements – covers methods of protective grounding of supply and communication conductors and equipment. Similar rules requiring grounding occur in other parts of the Code.

1. At transformers - multiple grounded system, Rule 96C, page 27
2. Four grounds per mile - multiple grounded system, Rule 96C, page 27
3. Messenger grounding 4/8 per mile, Rule 92C1, page 18. Common neutral grounding on same structure, Rule 92C3, page 18.
4. Guarding and protection, Rule 93D, page 21. Substantially attached, least exposure, Rule 93D3, page 22.
5. Depth of driven rods, Rule 94B2, page 23.
6. Separate grounds (for arresters, etc.), Rule 97, pages 27 – 28.

7. Grounds for equipment, guys, and messengers, Rule 215C, pages 71 - 73.
8. Separate ground electrodes at same building or structure must be bonded together. Rule 99C, page 29.
9. Exposed UG metallic supply and communication apparatus should be bonded together if less than 6 feet apart, Rule 384C, page 243.

### Part 2. Categories for Overhead

- Section 20 Purpose/Scope – page 69
- Section 21 General Requirements – page 70
- Section 22 Relative Levels/Joint Use – page 76
- Section 23 Clearances – pages 81 – 170
- Section 24 Grades of Construction – page 171
- Section 25 Loading Requirements – page 177
- Section 26 Strength Requirements – page 199
- Section 27 Line Insulation – page 213

### Clearances – Section 23

1. Vertical clearance above ground, Rule 232B, page 86 - 88, Table 232-1, pages 89 – 94.
2. Between conductors on different supports, Rule 233, pages 98 – 109.
3. Conductors from supporting structure, Rule 235E, pages 140 – 141.
4. Conductors from other structures, Rule 234B, pages 110 – 111.
5. Conductors from buildings and signs, Rule 234C, pages 111 – 113; and Table 234-1, pages 122 – 127, Figures 234-1(a,b,c) 234-2, 234-3, 234-4 (a,b), 234-5, pages 117 – 121.
6. Three-inch surface clearance, Rule 234C3c, page 112.
7. Roof and window clearance, Rule 234C3d, page 112.
8. Forty-inch separation power supply to communication, Rule 235C, pages 137 - 139, Table 235-5, pages 149 – 152. (Note: see footnote 5, for reduced clearance to 230E1 and 230C1, neutral with bonds and 230F1b, fiber optic cable; not 230C3 triplex)
9. Communication worker safety zone, Rule 235C4, page 139.
10. Services: Rule 235C1, Exception 3, service drop to structure being served (w/conditions), same structures (1 foot), and page 137, from different structures (2 feet), Table 233-1, page 106.
11. Between conductors, vertical, same supporting structure, Rule 235C, pages 137 – 139.

- a. Midspan sag, Rule 235C2b (1) (a) (75 percent of structure clearance), page 138.
  - b. Conductors not below communication attachment line of sight, Rule 235C2b(3). page 139.
  - c. Between communications conductors (12"/4") Rule 235H, page 142.
12. Between conductors; horizontal, same supporting structure, Rule 235B, pages 135-136, any direction, Rule 235E, pages 140-141, Table 235-7, page 157.
  13. Climbing space, Rule 236, pages 158-160. See also Rules 213 (access), 237 (working space), and 217A4 (obstructions, including vines).
  14. Vertical clearance between certain supply equipment (transformers, etc.) and communication facilities, Rule 238, page 163.
  15. Equipment above ground, Rule 232B3, page 87, Table 232-2, pages 96 – 97.
  16. Drip loops on pole, Rule 238D, page 163.
  17. Structure to streets, hydrants, railroad, Rule 231, pages 85-86.

#### Guys

1. Insulated, Rule 279, pages 215-216.
2. Grounded, Rule 215C2, page 72.
3. Markers, Rule 217C, page 74.

#### Miscellaneous

Administrative authority – existing installations, safety modifications, Rule 013B, page 2.

Crossarm – strength and bracing, Rule 261D, pages 202-203.

Inspections and tests of lines and equipment, defects recorded, and prompt repairs – In service/ out of service/abandoned/new. Rule 121, page 39; also see Rule 214, pages 70-71; underground lines, Rule 313, pages 220-221.

Electrical field – strength under lines, Rule 232C1c. page 87.

Joint use of poles – Rule 222, pages 77-78 (see also Rule 220).

Maintenance – Rule 012, page 1.

Employers – Must train, set procedures, and provide protection. Section 41, pages 246-247.

Employees – General Requirements – Section 42, pages 252-255. Employees must know rules – Rule 420A, page 252, employee qualifications, Rule 420B, page 252.

Additional requirements for communication employees, Section 43, pages 259-261

Additional requirements for supply employees, Section 44, pages 262-279.

Risers – grounding, Rule 314B, page 221, and 360C, page 240; conduit separated or broken, Rule 239D, page 166, Rule 360A, page 240; placement on pole, Rule 362A, page 240.

Steps and stand-off brackets – on supporting structures, Rule 217A2, pages 73-74

Structures protected – against damage, Rule 217A1a, page 73.

Substation fences – Rule 110A, page 32. Grounds-see Rule 92E, page 19.

Tags – pole identification, Rule 217A3, page 74.

Tree trimming – Rule 218, page 75.

Tree attachment – of wires and services, Rule 217B, page 74.

Underground burial depth – Rule 352D2, Table 352-1, page 236, and Rule 330A, page 229.

Security – pad mounted equipment – Rule 381G, page 212.

Vertical conductors - through communication, Rule 239F, page 166.

Clearances for different voltages on same arm. Rule 235F, page 141.

Approach distances – to supply conductors/parts – for workers:

Communication – Rule 431, page 259;  
Supply 441A, pages 262-272.

Fiber optic cable – Definitions: supply/communication, Section 2, page 7; clearances, Rule 230F, pages 83-84; transitions from communications space to supply space (or the reverse) may occur only at pole, Rule 224A3c, page 79.