

Part 1: Electrical Requirements

160) Surge Protection

160.00.10) The Customer shall install surge arresters on all circuit phases on the line side of the main service disconnect(s). These surge arresters shall be polymer body MOV arresters and require acceptance by We Energies

160.00.20) If the Customer's distribution system is overhead and operates at the service voltage provided by We Energies (no transformation), the Customer shall install surge arresters on all circuit phases on the load side of the We Energies metering instrument transformers .

160.00.30) The application of the appropriate surge arrester class shall be determined based on the maximum fault duty quoted in section 010.30 "We Energies Electrical System Information: Voltage and Fault Duties" located near the front of this manual. Please request this form for each installation location from the local We Energies representative. This information shall be used in conjunction with sections 160.10 and 160.20 (see the next page) to determine the appropriate arrester for the each site.

160.00.40) Arrester expulsion elements shall not be used inside metal enclosed or metal clad switchgear assemblies.

Part 1: Electrical Requirements

160.10) Surge Arresters

| NOMINAL CIRCUIT VOLTAGE (V) | SURGE ARRESTER | | | Notes |
|-----------------------------|----------------|--------------------------------|------------------|----------|
| | Class | Duty Cycle Voltage Rating (kV) | MCOV Rating (kV) | |
| 3,810Y/2,200 | DISTRIBUTION | 3 | 2.55 | 1 |
| 4,160Y/2,400 | DISTRIBUTION | 3 | 2.55 | 1 |
| 8,320Y/4,800 | DISTRIBUTION | 6 | 5.1 | 1 |
| 12,470/7,200 | DISTRIBUTION | 10 | 8.4 | 1 |
| 13,200Y/7,620 | DISTRIBUTION | 10 | 8.4 | |
| 13,800Y/7,970 | DISTRIBUTION | 10 | 8.4 | |
| 13,200 | INTERMEDIATE | 10 | 8.4 | |
| | STATION | 10 | 8.4 | |
| 13,800 | INTERMEDIATE | 15 | 12.7 | |
| | STATION | 15 | 12.7 | |
| 24,940Y/14,400 | DISTRIBUTION | 18 | 15.3 | |
| | INTERMEDIATE | 18 | 15.3 | |
| 26,400 | INTERMEDIATE | 21 | 17 | |
| | STATION | 21 | 17 | |
| 34,500 | INTERMEDIATE | 36 | 29 | |
| | STATION | 36 | 29 | |
| 34,500Y/19,920 | INTERMEDIATE | 27 | 22 | |
| | STATION | 27 | 22 | |
| 69,000 | | | | 1 |
| 138,000 | | | | 1 |

Note 1: By special permission only. Please contact the local We Energies office before designing for these voltages.

160.20) Surge Arrester Class

| CLASS | PHASE TO GROUND SYMMETRICAL FAULT CURRENT (AMPERES) |
|--------------|---|
| Distribution | 10,000 or less |
| Intermediate | 20,000 or less |
| Station | >20,000 |