



DESIGN REQUIREMENTS

SWITCHBOARDS

GENERAL INFORMATION

- 1.1 This section applies to fuse type switchboard.

DESIGN REQUIREMENTS

- 2.1 Switchboards shall be metal-enclosed, free-standing, front-connected, real-aligned, front accessible with fixed, individually mounted, front removable main and large feeder devices, and group-mounted small feeder devices.
- 2.2 Provide electronic Main Bus Metering and provisions for power monitoring system.
- 2.3 Bolted Pressure Contact Switches: Fused Main and Tie switches shall be bolted pressure contact-type and shall be UL listed. Supply electrically-tripped switch (es) with the following accessories:
- a. Ground fault protection including test panel.
 - b. Single-phase protection
 - c. Blown fuse protection to open the switch upon blowing of one or more of the fuses.
- 2.4 Fused Feeder Switches: Fused switches shall be quick-make/quick-break.
- 2.5 Required field testing shall include:
- a. Continuity tests.
 - b. Tests for correct operation and sequencing of electrical and mechanical interlock systems.
 - c. Exercise all active components.
 - d. Insulation resistance tests on each bus section, phase-to-phase and phase-to-ground.
 - e. Phasing tests on double-ended or dual-source switchgear to insure correct bus phasing from each source.
 - f. Close inhibit tests and lockout tests.
 - g. Perform a ratio-verification test.



DESIGN REQUIREMENTS

- h. Tests of accuracy of meters.
 - i. Resistance test for surge arrester ground terminal and the ground system.
- 2.6 Provide a complete system analysis showing device coordination curves and charts showing that all equipment is selectively coordinated.

CONSTRUCTION REQUIREMENTS

- 3.1 Switchboard shall be factory assembled and tested.
- 3.2 Provide concrete pads for all switchboards.
- 3.3 Spare Fuses: Provide one complete spare set of fuses for each size and type fuse utilized on the project including control power fuses.
- 3.4 Unit shall be metal enclosed, free standing, front connected, front accessible with fixed, individually mounted front removable main devices, and group mounted feeder devices with sections rear aligned.
- 3.5 Utility Metering: Metering sections shall be fabricated in compliance with the utility company's requirements including a current and potential transformer compartment, with required buswork designed for mounting of current transformers and potential transformers. The section shall have barriers isolating the metering compartment.
- 3.6 A ground bus shall be provided and firmly secured in each vertical section structure and shall extend the entire length of the switchboard.
- 3.7 Sections that are designated "space" (or "future") shall be equipped with all accessories to accept future feeder devices.
- 3.8 Provide bus isolation barriers arranged to isolate the line bus from the load bus at each service switch. Provide barriers to isolate load cable connections from main horizontal buses. Provide barriers between adjacent switchboard sections. Provide barrier access provisions to permit checking bus-bolt tightness.
- 3.9 Provide training services of factory-authorized service representatives to demonstrate switchboard and train Columbia's maintenance personnel. This is a prerequisite for final acceptance.

REFERENCE

- 4.1 The applicable CSI Specification Section is 262413.