



DESIGN REQUIREMENTS

MEDIUM-VOLTAGE ELECTRICAL TRANSMISSION

GENERAL INFORMATION

- 1.1 This section applies to feeders and devices rated over 600 volts.

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- 2.1 The designer shall be responsible for all due diligence work associated with the installation of any feeder or device over 600V including calculation of line loss, accessibility for maintenance, calculation of short circuit values, inclusion of appropriately coordinated safety devices and analysis of load flow.
- 2.2 All feeders and devices over 600 Volts need to be specifically reviewed and accepted by the Plant Engineering and Utilities department before the design is finalized. Review topics will include future considerations for growth, interconnections to the high voltage vault, availability of maintenance and isolation and redundancy.

CONSTRUCTION REQUIREMENTS

- 3.1 Cable Identification: Cable shall have color-coded tape under the metallic shielding. The outer jacket shall be printed with manufacturer's identification, type of insulation, size of conductor, rated voltage, year of manufacture, insulation thickness and UL listing. Where cable cannot be readily identified, provide stainless steel tags fastened to the cable at both ends with cable ties.
- 3.2 Field Test Reports: Submit certified field reports for all tests. Reports for testing grounding electrodes and systems shall identify each electrode and system for each test. Interpret test results relative to compliance with performance requirements specified.
- 3.3 Field tests shall include the following items:
 - a. Inspection for physical damage.
 - b. Resistance tests for bolted electrical connections.
 - c. Inspection for shield grounding, cable support, and termination.
 - d. Grounding system tests.



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- e. Inspection for fireproofing in common cable areas.
- f. Insulation-resistance tests
- g. Shield-continuity tests
- h. High voltage DC acceptance tests (See note #1).

Note 1: When new cables are spliced into existing cables, perform the hi-pot test on the new cable prior to splicing. After test results are approved for new cable and splice is made, perform an insulation resistance test, continuity test, and DC hi-pot test on the length of cable including the splice and test the existing cable to the nearest disconnection point.

REFERENCE

- 4.1 The applicable CSI Specification Section is 261000.