

**CI-0703****TAB 7: TECHNICAL DISCIPLINES**

Electrical

GROUNDING OF FENCES

Metallic fences within 1.8 m of any equipment or structure above the surface of the ground, which is connected to the main grounding system, shall be bonded to the grounding system.

Ground rods shall be driven adjacent to the posts inside the fence line to a depth of not less than 3.0 m. Where no metallic posts are provided the ground rods shall be connected directly to the metal wires, mesh or other components of the fence.

LIGHTNING PROTECTION

Lightning protection system is designed to protect structures from damage due to lightning strikes by intercepting such strikes and safely passing their extremely high voltage and current to "ground". Such system shall be installed where there are no surrounding structures that would provide a cone of protection.

Lightning protection systems shall include a network of lightning rods, metal conductor, and ground electrodes, designed to provide a low resistant path to ground for potential strikes.

In general, grounding conductor connections to structures, connections within the lightning protection system conductors, shall be exothermic copper-weld type unless stated otherwise specified.

HIGH RESISTANCE GROUNDING SYSTEMS

The high resistance grounding system shall limit the ground fault through the transformer neutral.

The equipment will be located indoors in a climate controlled building.

The resistor shall be stainless steel edge wound type. The resistor shall be provided with taps for the adjustment of ground current magnitude in several steps.

Meter relay with auxiliary contacts shall sense voltage across the grounding resistor and initiate remote annunciation of a ground fault condition. The resistor to include appropriate taps to limit the ground current flow between 0.9 to 5.0 Amperes for 600V.

ELECTRIFIED RAIL GROUNDING REQUIREMENTS

Under development

ELECTRICAL, COMMUNICATIONS AND MECHANICAL SERVICE ROOMS AND FIXED MACHINERY (TBD)**POLE GROUNDING (TBD)**