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**THERMAL PLANT PROTECTIVE RELAYING REQUIREMENTS**

Protection design, settings and hardware for electrical equipment must be approved by the PacifiCorp Protective Relaying Department and will meet all recommendations contained within the PacifiCorp FACILITY CONNECTION REQUIREMENTS FOR TRANSMISSION SYSTEMS, IEEE Std 666-1991 IEEE Design Guide for Electric Power Service Systems for Generating Stations, IEEE Std C37.102 IEEE Guide for AC Generator Protection and IEEE Std C37.110 IEEE Guide for the Application of Current Transformers Used for Protective Relaying Purposes.

Protection drawing packages shall conform to PacifiCorp drawing standards. Separate 1-lines, 3-lines, DC control schematics, and wiring diagrams are required. All protection drawings must be provided with the standard PacifiCorp drawing boarder.

Part numbers for relays, test switches, lockout relays must be approved by the PacifiCorp Relay Department.

All voltage, current and digital inputs and outputs for each relay must be connected to a test switch. Protective relays and lockout relays must be electrically isolated via test switches for testing purposes.

Relay settings reports are required and must contain all data required to review the settings including 1-lines, narrative philosophy, relay set points, calculations, coordination curves, protected equipment data, and system data. The relay settings report must cover all the protective relays in the plant. A paper copy and an electronic copy must be provided to the PacifiCorp Relay Department.

All protective relaying DC control circuits must be 125 VDC.

Remote communication via modem must be provided to all generator, generator step-up, and auxiliary transformer protective relays. All plant relays must support the IEC 61850 communication protocol.

The final protective relaying drawing package and report must be submitted to the PacifiCorp Relay Department for approval at least two months prior to ordering equipment.

Plant protection systems must meet the PacifiCorp Standard 139 – Facility Interconnection Requirements for Xmsn Systems. The most current version of this document is posted at <http://idoc.pacificorp.us/Article/Article23187.html>.