

PRINCIPAL ELECTRICAL ENGINEER - SUBSTATIONS

Principal Objective

Provision of professional engineering discipline support to the program projects with particular emphasis on promoting and maintaining the technical adequacy, uniformity, and quality of the project designs in conformance with approved standards and codes.

Organizational Relationship

Member of the Engineering Department professional staff supporting all MYAS projects. Reports to the Manager, Electrical Section.

Major Activities Performed

- Prepares technical guide specifications, scope of work descriptions, and updates the standard details, design criteria and technical guidelines.
- Prepares Request for Proposal (RFP) documents with design concepts.
- Provides technical assistance during pre-bid conferences, proposal evaluations, and post-award and other conferences.
- Reviews A/E contractor design drawings, specifications and calculations submittals and coordinates with the work of the other disciplines.
- Reviews specialty vendor and shop drawings and specialty construction materials and/or equipment submittals.
- Support and Reviews advanced power system analyses.
- Performs field inspections and provides professional field support as necessary during construction phases.
- Prepares interface layouts and conflict solutions.
- Prepares man-hour estimates and material takeoffs.
- Prepares technical correspondence, reports and studies.
- Functions as a technical expert in performing analyses in specialized areas.
- Reviews and provides guidance in problem areas, recommends solutions, alternatives and improvements.
- Performs investigation of material and system failures.

Experience and Qualifications

- A recognized university degree in Electrical Engineering with 10+ years' post-graduate professional experience. Design experience of power systems is essential.
- The ability to communicate effectively in spoken and written English is essential.
- Must have sound overall experience in designing systems for commercial, institutional, and industrial facilities. Must be capable to check designs done by A/E's for high voltage (115 to 380 kV), medium voltage (13.8 to 34.5 kV) and low voltage power, indoor lighting, outdoor and road lighting, grounding, communication, and fire alarm systems.
- Must have used ETAP or other software to perform fault current, load flow and stability studies for power grids of at least 380kV.
- Experienced in preparation of Bid Documents.
- Experience in designing (from conceptual to detailed) electrical systems for residential, commercial and institutional facilities is desirable in the following areas:
 - a. Medium and low voltage power systems one line diagram and electrical rooms equipment layout.
 - b. Underground and exposed conduit and cable tray runs.
 - c. Calculations for demand load estimates, for sizing major equipment and circuits and selective protection coordination.
 - d. Lighting systems indoors and outdoors calculations and physical layout.
 - e. Fire protection and communication systems one line diagrams and physical layout of equipment and devices.
 - f. Must have thorough knowledge of National Electrical Code, IEEE, ANSI, IESNA, NFPA.
- Design experience (from conceptual to detailed) with utility and industrial facilities is desirable:
 - a. High and medium voltage power distribution substation one-line diagram and equipment layout of major equipment.
 - b. High and medium voltage switchgear.
 - c. Protective relaying schemes for high and medium voltage bus, transformer, cable and overhead line protection.
 - d. Station Automation System, switchgear control, monitoring and metering.
 - e. SCADA
 - f. High and medium voltage power distribution layout with cables in duct banks and direct buried and corresponding ampacity calculations.
 - g. Thorough knowledge of IEEE, ANSI and IEC Standards