



Chugach Electric Association, Inc.
Position Description

Transmission and Substation Engineer - Electrical

Summary

Direct and perform the design of complex sub-transmission/transmission and switch yard/substation facilities to provide reliable, high-quality facilities for Chugach's system. Assist in the creation and maintenance of design standards for these facilities. Perform analysis and coordinate with other departments on various tasks in support of these facilities.

Essential Functions

- A. Prepare and direct preparation of detailed plans and specifications for project construction via engineering analysis, calculations, document creation and editing, and drafting, as assigned.
- B. Prepare and/or review system protective relaying plans and specifications for projects in coordination with the Operations Substation & Relay Engineering Group.
- C. Monitor and report the progress of assigned projects relative to schedule, scope, and budget in coordination with the Projects Group.
- D. Prepare and maintain sub-transmission, transmission, and substation unit cost data for various types of evaluations.
- E. Evaluate sub-transmission, transmission, and substation cost data for effectiveness of methods and scheduling of construction.
- F. Assist in the preparation of the sub-transmission, transmission, and substation capital projects portion of division budgets, work plans, and long-range plans, as assigned.
- G. Participate in the development of design criteria for facilities construction including:
 - a. Design Standards: including safety/code requirements (e.g., grounding, fencing, clearance, fire protection, etc.), bus design parameters, ampacities, etc.
 - b. Material Standards: including standard material lists to be used in substations and on sub-transmission and transmission structures.
 - c. Drawing Standards: coordinate with the CAD group and Operations to maintain up-to-date drawings of record for substations, sub-transmission, and transmission lines.
 - d. Reliability Standards: including redundancy provisions, physical security precautions, communication protocol, etc. Consistent with Regulatory Commission of Alaska (RCA) approved standards/GIP Standards.
 - e. Specifications: for equipment and construction to be used for procurement and contracting. Oversight of equipment performance testing/factory acceptance testing as required.
- H. Coordinate with the Projects Group to maintain quality assurance in the work of engineers, consulting engineers, contractors, subcontractors, and vendors/ manufacturer's representatives on sub-transmission, transmission, and substation construction projects.

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- I. Review engineering, manufacturer, and contractor submittals, specifications, and other written material to ensure conformance with project requirements, as assigned.
- J. Coordinate with the Projects Group to provide inspection of projects during construction and commissioning, as assigned.
- K. Perform engineering in the office or field as required for addressing equipment failure or maintenance issues in substations and on transmission and sub-transmission facilities, as assigned.
- L. Provide direction to consulting engineers and staff engineers performing engineering services for sub-transmission, transmission, and substation projects, as assigned.
- M. Participate in the preparation of contract documents and administer contracts for procurement of sub-transmission, transmission, and substation equipment and materials; engineering services; and construction, including evaluation of bids and proposals.
- N. Assist in the preparation of project and contract close out documentation.
- O. Review and recommend contractor/vendor invoices for approval.
- P. Assist with construction change orders and with negotiating the cost of change orders with contractors for transmission, sub-transmission, and substation projects, in coordination with Management.
- Q. Verify equipment acceptance tests in conformance with the manufacturer's recommendations.
- R. Participate in external committee assignments on behalf of the Association, as directed.
- S. Consult and coordinate with Federal, State, and local agencies regarding location of facilities, construction methods, and schedules to minimize conflict.
- T. Provide technical assistance to member-owners and other concerned parties, as assigned.
- U. Collaborate with and receive direction from Senior Engineers for sub-transmission, transmission, and substation engineering tasks and projects, as assigned.

Relationships

Internal

- Manager, Transmission Engineering: Report to, receive direction and guidance from. Keep informed of work progress and problems encountered. Exchange information relative to work assignments.
- Transmission and Substation Engineers – Civil/Structural: Consult and coordinate with on substation, sub-transmission, and transmission facilities civil/structural design. Exchange other information as required.
- Planning and Standards Engineers: Consult with. Exchange information relative to materials and equipment performance and to project budgets and schedules. Exchange other information as required.
- Other divisions and Departments: Consult with, exchange information as required.

External

- Member-owners: Provide needed assistance as required. Communicate project activities as needed.

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- Construction Contractors: Provide quality inspection, consult with relative to project progress; exchange information.
- Vendors and Manufacturer's Representatives: Consult with regarding operating parameters of existing and proposed equipment; seek information relative to cost and availability of major transmission, sub-transmission, and substation structures/material for budgeting and scheduling purposes; interface with regarding acceptance of equipment and the scheduling of service representatives.
- State, Municipal and Federal Agencies, Other Utilities: Participate in the acquisition of permits and environmental clearances; coordinate construction activities with; exchange information.
- Engineering Consulting Firms: Administer contracts relative to projects. Coordinate Internal and External designs as needed.

Competencies

- Must have a thorough knowledge of the design and construction of sub-transmission, transmission, and substation facilities, including controls and protection.
- Must have a working knowledge of construction practices and contract administration involving site preparation, concrete placement, welding, architectural details, mechanical, civil, and electrical work, applicable environmental regulation, safety codes, and requirements.
- Must have an in-depth understanding of design, construction, and contracting principles governing transmission, sub-transmission, and substation facilities, as well as drawing, specifications, construction contracts, and administration thereof.
- Knowledge of the construction practices used in Alaska and the sub-arctic and the effects of cold weather on equipment and its operation is required.
- Working knowledge of RUS construction specifications and requirements, NESC, and OSHA Rules and Regulations, construction drawings, contracts, materials, and practices is preferred.
- Must have the ability to coordinate the activities of contractors, subcontractors, vendors, material suppliers, design engineers, and other professionals involved in the design and construction of sub-transmission, transmission, and substation projects.
- Effective and proficient oral and written communication skills with the ability to convey information to others are required.
- Must be competent using computer skills, such as CAD, and other software.
- Must be able to effectively monitor costs and schedules of multiple contractors and provide effective supervision for contracted engineers and technicians.
- Must be able to interface effectively with contractors, engineers, and Chugach Operations personnel and effect the timely completion of projects with minimum conflict.
- Must have ability to organize and train an efficient work group.

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Supervisory Responsibility

This position has no supervisory responsibility.

Work Environment

Most of the work takes place within a standard office environment. Frequent field trips are required. Flying in fixed-wing aircraft or helicopters may also be required. Occasional exposure to extreme cold for extended periods will be necessary, as will working in areas around heavy equipment with high noise levels. May require travel with overnight stay on the jobsite. May occasionally require on-call rotation.

Signatures

Reviewed and approved by:

_____ Date _____

VP, Engineering

_____ Date _____

VP, Human Resources

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Minimum Qualifications and Experience

Education

Bachelor's degree in electrical engineering, required, preferably with electrical power option. Professional Engineering registration in the State of Alaska or ability to obtain within one year, required. Additional training in electric utility design and construction, preferred.

Experience

Five (5) years of progressively responsible experience in the field of electrical power engineering, of which three (3) must have involved actual design and field engineering, construction, and project management.

Substitution

An engineering degree in another discipline (civil or mechanical) plus an additional three (3) years of progressively responsible experience in electrical power engineering may be substituted for the required electrical engineering degree.

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