



St. Kitts Electricity Company Limited

Electrical Power Systems Engineer - Control and Operations

Principal Accountabilities:

Provide technical leadership and expertise to the T&D-Control & Operations Department's technical and administrative functions, ensuring all internal and external stakeholder processes and deliverables are completed to the standards prescribed by SKELEC's reliability, budgetary, and safety KPI's.

Job Description

ROLE AND RESPONSIBILITIES

- 1. Review and assess the functionality of the existing power system protection:**
 - a. Assess functionality and integrity of existing protection devices [including but not limited to injection testing]; recommend and implement changes/upgrades as determined by the assessment.
 - b. Assess protection coordination schemes; recommend and implement changes to zones of protection, discrimination logic towards localised isolation of faults, reducing fault propagation, and system-wide cascade.
 - c. Develop and implement maintenance schedules for protection devices.

- 2. Assess the functionality of the T&D Supervisory, Control, and Data Acquisition (SCADA) system:**
 - a. Perform an audit of the existing SCADA system, assessing and determining the functionality of all devices and systems extending from the field to the control centre and corporate network.
 - b. Recommend and implement changes to the SCADA system based on the findings of the audit.
 - c. Develop and implement maintenance schedules for SCADA systems.

- 3. Review and recommend existing power system emergency response protocols and implement improvements:**
 - a. System control fault logging, dispatch, and reporting
 - b. Fault response and remediation time
 - c. Risk assessments
 - d. Communication protocols
 - e. Switching, Lockout/Tagout procedures

- 4. Develop and implement other T&D infrastructure asset management and maintenance schedules including best practices for monitoring and periodic inspections:**

- a. Transformers (pole-mounted and ground mounted)
- b. Substations, switchgear (oil-filled and SF6), and air-insulated load breakers
- c. Distribution lines (Overhead and Underground) and termination points.

5. Implement T&D network reliability and efficiency Indices data collation and reporting to guide investment decisions:

- a. Grid energy losses
- b. T&D Non-Served Energy
- c. SAIFI
- d. SAIDI
- e. Average Restoration Time
- f. Voltage and Frequency deviations

6. Staff training and development:

- a. Develop and implement safety and fault remediation best practices for power system emergency response crews.
- b. Perform basic power systems training for:
 - I. Safety practices per voltage potential level
 - II. Transformer selection and sizing for the purpose
 - III. Maintenance and testing of protection devices and fault level/isolation calculations
 - IV. Conductor types (Overhead and Underground) and sizing for purpose and environment
 - V. Cable jointing and termination
 - VI. Low Voltage and High Voltage switchgear inspection and maintenance
 - VII. Other general T&D infrastructure inspection and maintenance best practices

7. Any other duties within the scope of expertise as assigned.