JOB DESCRIPTION

Job Title: Electrical Engineer – Automation and Control **Position Number:** 95-26

Incumbent: Vacant **Effective Date:** October 2026

Employment Status: Permanent **Bargaining Unit:** _____ Yes __X__ No

Supervisor's Title: Manager, Electrical Engineering **Department:** Engineering & Capital Projects

Subordinate Positions: May provide technical leadership, project oversight, and supervision to engineers, EITs, and external contractors or consultants during design, construction, and commissioning activities.

SUMMARY

Under the supervision of the Manager, Electrical Engineering, the Electrical Engineer – Automation and Control provides engineering leadership and support for process-level control, automation, and field communications systems across Yukon Energy's generation, transmission, and distribution assets.
The position focuses on equipment and systems at generating stations and substations, including RTUs, RTACs, PLCs, local HMIs, and interfaces to protection and other field devices. The incumbent develops and supports these systems through design, project delivery, commissioning, troubleshooting, and maintenance support, and coordinates their interfaces with the SCADA system.
While the OT and IT teams manage backbone networks, servers, and cybersecurity architecture, this position ensures that process-level automation and control systems are properly designed and commissioned to meet YEC's engineering, reliability, and safety standards.

DESCRIPTION

1. **Automation and Control Engineering**
   - Design, specify, configure, and review process-level automation and control systems, including RTUs, RTACs, PLCs, local HMIs, and interfaces to field IEDs and the SCADA host.
   - Develop and review control narratives, functional descriptions, logic diagrams, I/O lists, alarm requirements, and interface documentation.
   - Develop and review local control logic, permissives, interlocks, and operating sequences in coordination with Operations and the applicable engineering disciplines.
   - Define and coordinate data exchange between process-level equipment and the SCADA systems. Coordinate host-side changes with the responsible SCADA function.
   - Coordinate with the OT and IT teams to ensure proper integration and network segregation in accordance with cybersecurity requirements.
   - Maintain accurate configuration files, firmware inventories, and communication network diagrams for process-level equipment.
   - Support validation of field data and telemetry from metering, protection, and control devices to local HMI and the SCADA Host.

2. **Operations and Maintenance Support**
   - Provide engineering and troubleshooting support for process-level control, RTU/RTAC, PLC, local HMI and historian, and field communication issues affecting equipment operation or data transfer.

- Assist Operations and maintenance personnel with diagnostics, testing, and controller configuration files as required.
- Support updates to controller and local HMI configurations following capital project integration or system upgrades.
- Participate in investigations where process-level control or communication failures are suspected; identify causes and recommend corrective actions.
- Develop or update maintenance procedures and technical guidance for RTUs, RTACs, PLCs, local HMIs, and associated field-level communication equipment.

3. System Reliability, Integration and Cyber Security

- Support the implementation and maintenance of approved cybersecurity requirements for process-level devices in coordination with OT and IT.
- Coordinate device access, network interfaces, and communication requirements with the teams responsible for OT networks and cybersecurity.
- Support standardized control, communication, and configuration templates for RTUs, RTACs, and PLCs.
- Participate in grid modernization and utility automation initiatives, including substation automation and remote monitoring.
- Provide technical input to plans for process-level control and automation renewal and standardization.

4. Capital Project and Commissioning Support

- Act as the engineering subject matter expert for automation and control scopes on capital projects.
- Review vendor documentation, logic diagrams, RTU/PLC configurations, and interface definitions for compliance with YEC standards.
- Lead and/or participate in Factory Acceptance Tests (FATs) and Site Acceptance Tests (SATs) for plant and substation automation and control systems.
- Support commissioning and energization activities in both greenfield and brownfield environments, validating data points, control functions, and alarms.
- Ensure all process-level devices and data pathways are fully documented and functionally verified before handover.
- Coordinate with consultants, vendors, Operations, OT, IT, and the responsible SCADA function to resolve system interface and communication issues.

5. Project Engineering for Generation and Substation Projects

- Serve as Project Engineer for generation, transmission, and substation projects with automation, control, and field communication scopes.
- Develop and define project scopes of work and support the Project Manager in developing project schedules, budgets, and resource plans.
- Coordinate multidisciplinary design reviews to ensure automation and control systems integrate with electrical, civil, mechanical, protection, and operational requirements.
- Lead technical evaluations of contractors and equipment for automation and control scopes.
- Coordinate with Project Managers, Operations, and System Control on outages, switching sequences, and cutovers for brownfield work.
- Ensure as-built and record drawings, configuration files, and commissioning records are delivered as part of project closeout.

6. **Documentation, Standards, and Continuous Improvement**
   - Develop and maintain engineering standards and templates for process control and communications design.
   - Prepare technical reports, specifications, and as-built documentation for capital and O&M projects.
   - Ensure that configuration changes, logic revisions, and firmware updates are reviewed and controlled under Engineering document management procedures.
   - Contribute to lessons-learned reviews, post-event analysis, and continuous improvement initiatives to enhance reliability and standardization.

7. **Collaboration and Leadership**
   - Work closely with Engineering, Operations, OT, and IT teams to ensure new systems are compatible with operational and cybersecurity requirements.
   - Liaise with vendors, contractors, and consultants to verify compliance with YEC standards and ensure timely issue resolution.
   - Participate in safety meetings, JSAs, and tailboard discussions for commissioning and field work.
   - Promote a culture of teamwork, safety, and knowledge sharing across Engineering and Operations.

8. **Other related duties**

QUALIFICATIONS, SKILLS, AND EXPERIENCE

1. **Education and Registration**
   - Bachelor's degree in electrical engineering.
   - Eligible for registration as a Professional Engineer (P.Eng.) in the Yukon.
   - *Alternatively:* Diploma in Electrical Engineering Technology with a minimum of eight (8) years of relevant utility experience, and eligible for or holding a Limited License (L.L.Eng.) to practice in Yukon or another Canadian jurisdiction, or a demonstrated ability to obtain such a license in Yukon.

2. **Experience**
   - Minimum five (5) years of relevant experience in process-level control and automation in a utility or industrial setting.
   - Experience with RTU, PLC, and HMI configuration, testing, and commissioning.
   - Demonstrated ability to support O&M, conduct root-cause analysis, and event investigations.
   - Experience leading or supporting capital projects involving automation and control upgrades.
   - Familiarity with generation and substation equipment and with interfaces between process-level systems and the SCADA Host.

3. **Technical Skills**
   - Strong knowledge of process-level automation and control systems and communication protocols such as DNP3, Modbus, and IEC 61850.
   - Experience with RTU, RTAC, PLC, and HMI configuration and commissioning. Familiarity with SEL RTACs and DPACs, Emerson RX3i PLCs, and QuickPanel Plus HMIs is an asset.
   - Understanding of field communications and backhaul, including fiber, microwave, licensed radio, cellular, and serial or Ethernet connections.
   - Experience in greenfield and brownfield commissioning environments.

- Proficiency with relevant configuration and diagnostic tools, such as SEL AcSELerator RTAC software and Wireshark.

4. Other Skills

- Strong analytical and problem-solving abilities, particularly under pressure.
- Strong technical writing and documentation skills.
- Effective communication and coordination across multidisciplinary teams.
- Ability to manage multiple priorities under operational or project constraints.
- Valid Class 5 driver's license and ability to travel (10–25%) to remote sites

WORKING CONDITIONS

- Work is primarily performed in an office environment, with periodic fieldwork at substations, generating stations, and other utility sites.
- Field assignments may involve exposure to outdoor weather conditions, including extreme cold, heat, and noise.
- Must maintain the confidentiality of corporate and operational information at all times.
- Required to adhere to all corporate safety, environmental, and administrative policies, procedures, and guidelines.
- Travel within Yukon (10–25%) is required to support projects and commissioning activities.