

JOB TITLE: SENIOR PROTECTION ENGINEER	WORK CENTER: HEAD OFFICE
SUPERVISOR/MANAGER TITLE: MANAGER ASSET MANAGEMENT	DEPARTMENT: OPERATIONS
Job Summary: Description of the purpose of the job	
The Senior Protection Engineer shall be responsible for providing company-wide technical leadership, specialist support and engineering assurance in electrical protection systems across all UEGCL power generation plants, including generator protection, excitation/protection coordination, plant-grid interface protection and associated protection control systems. The roles shall specifically be responsible for: • Calculating, reviewing and ensuring that all protection schemes in all UEGCL generation power plants are up to date and operational in all protection devices and corresponding switchgear. Protection shall cover Generator protection, Generator step-up transformer (GSU), Turbine and mechanical protection, Generator circuit breaker, MV and HV switchgear and busbars, applicable outgoing feeders, Station service transformers, Auxiliary electrical systems, Surge protection, insulation coordination, Plant and Station earthing system. • Ensuring that the backup protection schemes for transmission and distribution feeders are correctly graded and set for discrimination and correct selective tripping for fault clearance for all UEGCL power plants. • Knowing the updated fault levels and changes on the Ugandan Electricity network to ensure correct protection schemes are set and operational at all times. • Providing expert guidance and support to all UEGCL site engineering teams. • Documenting and advising on the appropriate protection philosophy for each Power Plant within the UEGCL fleet given the uniqueness per power plant. • Ensuring that protection systems are always reliable, selective, sensitive and appropriately coordinated to protect UEGCL's assets while maintaining the stability and security of the power system.	
Key Responsibilities: Brief Description of duties or the responsibilities for the job	
1. Develop, review and/or maintain UEGCL's protection philosophy, standards, procedures and technical requirements, benchmarked against applicable Grid Code requirements, OEM recommendations and relevant IEC, IEEE and CIGRE standards and industry best practice. 2. Calculate, review and submit to the Manager Asset Management, for approval, all protection schemes across all UEGCL Power Plants. Ensure that approved protection settings remain current, correct, version-controlled and properly implemented across all UEGCL power plants. 3. Review and provide technical assurance of the coordination between generator protection systems, excitation/AVR control functions, under- and over-excitation limiters, generator capability curves and applicable operating limits to ensure generating units remain adequately protected under normal and abnormal grid conditions. 4. Coordinate and/or oversee protection coordination, discrimination and relevant power-system studies for UEGCL's plants and grid connections to ensure appropriate protection coordination, discrimination and selectivity of primary and backup protection systems. 5. Develop and provide guidance on protection testing and maintenance requirements, including periodic testing intervals and test methodologies.	



6. Lead protection testing, commissioning, troubleshooting and periodic assessment of protection systems, including numerical protection relays/IEDs, associated trip logic, communication interfaces and protection-related control functions.
7. Review protection performance, test results, relay records, fault reports, disturbance/oscillography data, Sequence of Events (SOE), SCADA trends and relevant System Operator/network disturbance data, and recommend corrective actions.
8. Coordinate with C&I/SCADA teams to ensure correct integration of protection IEDs with plant control and monitoring systems, including alarms, trips, event records, time synchronisation, communication links and disturbance-data retrieval.
9. Provide specialist protection engineering input and technical oversight for protection systems during the design, procurement, installation, commissioning, modification, rehabilitation and maintenance of UEGCL power plants.
10. Establish and maintain a controlled protection-settings and configuration-management system/database covering approved setting files, calculations, relay configurations, drawings, change justifications, version control, approvals, test and commissioning records, rollback arrangements and associated protection records.
11. Provide technical guidance on the assessment of the condition, reliability and performance of protection equipment, including numerical relays, CTs, VTs, trip circuits, DC systems and associated protection interface and recommend appropriate interventions.
12. Coordinate with UETCL/System Operator and other stakeholders on plant-grid protection interfaces, protection coordination, operating limits and changes in grid configuration or fault levels that may affect UEGCL generating assets.
13. Investigate protection trips, maloperations, abnormal events and failures; lead or provide specialist input to root-cause analyses; and define, track and verify corrective and preventive actions.
14. Review protection aspects of technical specifications, technical evaluation of tender documents, contractor submissions, design drawings, acceptance testing and commissioning procedures for protection equipment and services.
15. Develop and maintain lifecycle plans for critical protection systems, taking into consideration asset condition, technology obsolescence, spares availability, cybersecurity, OEM support and operational risk, including digital protection-system obsolescence, communication architecture, cybersecurity, OEM support and operational risk.
16. Prepare periodic company-wide protection-system health and risk reports highlighting protection-setting deficiencies, equipment condition, outstanding corrective actions, compliance gaps and emerging risks for management attention.
17. Provide technical guidance and mentorship to engineers and technicians undertaking protection activities across UEGCL plants.
18. Ensure compliance with UEGCL procedures, applicable Grid Code requirements, electrical safety requirements, OEM recommendations and relevant IEC, IEEE and CIGRE standards and guidelines.

Reporting Relationship

Supervisor: Manager Asset Management

Subordinate: None

Contacts/Liaise with the following offices:



Internally

- All Staff

Education and Professional Requirements: The Minimum education level required to perform this job

- An upper Second Bachelor's Degree in Electrical/Power Engineering or related field.
- Masters in Electrical Power Systems Engineering or a related field is an added advantage
- Registered Engineer with the Engineers Registration Board (ERB) is a must
- Membership of UIPE or equivalent professional body.

Related Job Experience/Qualification: The Experience required to perform this job

- Minimum six (6) years' relevant experience in power-system protection engineering within power utility, OEM or engineering consultancy environments,
- Demonstrable experience in protection scheme calculations, relay settings and configuration, protection coordination, testing and commissioning. in a Generating Power Plant.
- Demonstrated experience in testing: protection relays, current transformers, voltage instrument transformers, switchgear, surge arrestors, earthing systems and energy meters.
- Conversant with protection test tools/equipment e.g. Omicron protection test set.

Additional Skills/Competences: In addition to the experience and educational requirements listed above

- Power system protection and relay coordination.
- Numerical protection relays /IEDs, relay configuration software and protection testing equipment.
- Fault and disturbance analysis.
- Electrical safety and risk management.
- Technical report writing and problem solving.
- Leadership, mentoring and stakeholder management.
- Ability to specify replacement/spare parts.
- Excellent analytical skills.
- A sound knowledge regarding safety measures
- Excellent troubleshooting and problem-solving abilities
- Ability to work under pressure and be on call at any time
- Good leadership, communication and motivation skills
- Ability to work in and/or lead a team
- Must be highly organized, systematic and precise in work



Additional Information

Apart from the core activities listed above, the Senior Protection Engineer shall participate in activities of the organisation such as:

- Carrying out Procurement Evaluations.
- Participate in and, where required, provide specialist leadership to plant incident investigations and root-cause analysis teams.
- Participate in projects when nominated by UEGCL management
- He/she may be required to carry out assignments that are not specified in this job description

