

POWER ENGINEERING COMPETENCY FRAMEWORK				
SKILLS MAP - Senior Engineer / Engineer (System Stability & Planning / System Control)				
Sector	Power Engineering in the Public Service			
Track	Monitoring & Control			
Occupation	Electrical Engineer			
Job Role	Senior Engineer / Engineer (System Stability & Planning / System Control)			
Job Role Description	<p>The Senior Associate Engineer / Associate Engineer (Energy Management Systems) is responsible for supporting the implementation, configuration and administration of Information Technology (IT) and Operational Technology (OT) systems. He/She provides first-level technical and operational support for Energy Management System and performs checks to detect failures.</p> <p>He assists in monitoring, detecting and reporting cybersecurity threats, system abnormalities and information security issues. Additionally, he keeps abreast of latest trends in electrical and power technologies, and clean and renewable technologies.</p> <p>He performs standby duties and rotating shift work when required. He has good interpersonal skills and is a good team player in liaising with team members and contractors.</p>			
Critical Work Functions and Key Tasks / Performance Expectations	Critical Work Functions	Key Tasks		Performance Expectations (For legislated / regulated occupations)*
	Manage power system stability and planning	Formulate Planting Strategy, Generation Planting Schedule and Strategy to ensure adequate generation capacity		In accordance with: - Electricity Act including subsidiary legislations - Energy Market Authority of Singapore Act - International Electrotechnical Commission (IEC) Standards - International Organization for Standardisation (ISO) Standards - Singapore Standards for Electrical and Power sector - Workplace Safety and Health (WSH) Act
		Review licensee's Ten-Year Transmission Network Development Plan for adherence to the planning criteria in the Transmission Code		
		Perform analysis on proposed power plant and consumer connections to the electricity systems		
		Lead on-site witnessing of generator testing and post-mortem studies for reviewing power plant performance		
		Perform system studies on the integration of new transmission/generation technologies with the power system		
	Monitor and control power system operations	Perform real-time monitoring and remote control of the power system to ensure secure and reliable supply of electricity		* Performance Expectations are non-exhaustive and subject to prevailing regulations and industry standards
		Formulate operations plan, assess equipment outage requests and initiate remedial actions		
		Collaborate with contractors/licenseses to attend to system disturbance events and network security issues		
		Carry out remote switching operation on transmission equipment		
		Review market rules, system operation manual and resources qualifications for the implementation of a forward capacity market		
	Contribute to decarbonisation, decentralisation and digitalisation initiatives	Contribute to national energy and power policies, strategies and frameworks to balance economic competitiveness, environmental sustainability, energy security		
		Conduct practicability and feasibility assessments of new electrical and power technologies		
		Assess regulatory and power system implications of innovation initiatives leveraging new electrical and power technologies		
		Provide technical advice for industry implementation of green initiatives for application of clean and renewable energy		
Engage industry in the adoption of best practices for transmission, distribution and the integration of distributed generation sources				
Analyse data for identification of operational and strategic insights				
Skills & Competencies	Technical Skills and Competencies		Critical Core Skills	
	Battery Systems Management	Level 3	Problem Solving	Intermediate
	Business Intelligence and Data Analytics	Level 3	Creative Thinking	Intermediate
	Continuous Improvement Management	Level 4	Sense-Making	Intermediate
	Contract and Contractor Management	Level 3	Decision Making	Basic
	Cybersecurity Framework Application	Level 3	Collaboration	Intermediate
	Demand Response Management	Level 4	Transdisciplinary Thinking	Basic
	Distributed Generation System Performance Monitoring	Level 3	Communication	Intermediate
	Electrical Equipment and Systems Testing	Level 3	Digital Fluency	Intermediate
	Electrical Systems Design	Level 3	Developing People	Basic
	Electricity Network Incident Management	Level 3	Customer Orientation	Intermediate
	Electricity Network Operations Management	Level 3	Adaptability	Intermediate
	Electricity Network Performance Monitoring	Level 3	Influence	Intermediate

	Electricity Network Planning	Level 3	Self Management	Intermediate
	Emergency Response and Crisis Management	Level 4		
	Energy Security and Reliability Management	Level 4		
	Engineering Problem Solving	Level 4		
	Engineering Safety Standards Interpretation	Level 4		
	Environmental Sustainability Management	Level 4		
	Equipment and Systems Installation and Commissioning	Level 3		
	Innovation Management	Level 4		
	Inter-agency Collaboration	Level 4		
	Internet of Things (IoT) Application	Level 4		
	Microgrids Implementation	Level 4		
	Modelling, Simulation and Visualisation	Level 3		
	Network Technical Specifications Development	Level 3		
	Power Engineering Management	Level 3		
	Power Plant Incident Investigation	Level 3		
	Power Plant Inspection	Level 3		
	Power Quality Management	Level 4		
	Power Strategy Planning and Governance	Level 4		
	Power System Monitoring and Control Management	Level 4		
	Regulatory Advisory	Level 4		
	Regulatory Compliance and Risk Management	Level 4		
	Robotics and Automation Systems Application	Level 3		
	Smart Grid Implementation	Level 4		
	Solid-State Power System Apparatus Implementation	Level 4		
	Stakeholder Management	Level 4		
	Strategy Development	Level 4		
	Technical Inspection	Level 3		
	Technology and Systems Application	Level 4		
Programme Listing	For a list of training programmes available for the Power Engineers in the Public Service, please refer to separate document on training courses.			

The information contained in this document serves as a guide.