

POWER ENGINEERING COMPETENCY FRAMEWORK				
SKILLS MAP - Deputy Director / Senior Specialist / Specialist (System Stability & Planning / System Control)				
Sector	Power Engineering in the Public Service			
Track	Monitoring & Control			
Occupation	Electrical Engineer			
Job Role	Deputy Director / Senior Specialist / Specialist (System Stability & Planning / System Control)			
Job Role Description	<p>The Senior Principal Engineer / Principal Engineer (Energy Management Systems) is responsible for establishing the standards for Information Technology (IT) and Operational Technology (OT) systems. He/She conducts failure analysis for Energy Management Systems and leads checks to ensure prompt resolution of faults.</p> <p>He formulates cybersecurity initiatives and procedures, leads incident investigation, and supervises security reviews and audits. He also recommends measures to address system vulnerabilities and manage cybersecurity risks. He leverages data analytics to enhance operational and strategic decision-making. He also advises on practical implications of decarbonisation, decentralisation and digitalisation initiatives.</p> <p>He possesses good leadership skills, critical thinking and problem-solving ability. Furthermore, he is a strategic thinker and actively contributes to national energy and power policies, strategies and frameworks to balance economic competitiveness, environmental sustainability, energy security.</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	Advise on 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 * Performance Expectations are non-exhaustive and subject to prevailing regulations and industry standards
		Provide inputs to optimise licensee's Ten-Year Transmission Network Development Plan to ensure secure and reliable operation of the power system		
		Provide technical expertise to enhance proposed power plant and consumer connections to the electricity systems		
		Drive compliance of power plant performance with regulatory requirements		
		Advise on integration of new transmission/generation technologies with the power system		
	Monitor and control power system operations	Provide technical expertise on real-time monitoring and remote control of power system to ensure secure and reliable supply of electricity		
		Provide technical expertise for operations plan, equipment outage requests and remedial actions		
		Endorse mitigating measures to minimise system disturbances and network security issues		
		Oversee remote switching operation on transmission equipment		
		Provide technical expertise for the reviews of market rules, system operation manual and resources qualifications for the implementation of a forward capacity market		
	Contribute to decarbonisation, decentralisation and digitalisation initiatives	Advise on national energy and power policies, strategies and frameworks to balance economic competitiveness, environmental sustainability and energy security		
		Drive industry and inter-agency collaboration for research and assessment of new electrical and power technologies		
		Provide expert advice on regulatory and power system implications of innovation initiatives leveraging new electrical and power technologies		
		Champion industry implementation of green initiatives for application of clean and renewable energy		
Advise on strategies for adoption of best practices for transmission, distribution and the integration of distributed generation sources				
Champion the use of data analytics for strategic decision-making				
Skills & Competencies	Technical Skills and Competencies		Critical Core Skills	
	Battery Systems Management	Level 5	Problem Solving	Advanced
	Business Intelligence and Data Analytics	Level 5	Creative Thinking	Advanced
	Continuous Improvement Management	Level 6	Decision Making	Advanced
	Contract and Contractor Management	Level 5	Sense-Making	Advanced
	Demand Response Management	Level 6	Collaboration	Advanced
	Distributed Energy Resources Implementation and Interconnection	Level 6	Developing People	Advanced
	Distributed Generation System Performance Monitoring	Level 5	Communication	Advanced
	Electrical Equipment and Systems Testing	Level 5	Transdisciplinary Thinking	Advanced
	Electrical Systems Design	Level 5	Digital Fluency	Advanced
	Electricity Network Incident Management	Level 5	Customer Orientation	Advanced
	Electricity Network Operations Management	Level 5	Adaptability	Advanced
	Electricity Network Performance Monitoring	Level 5	Influence	Advanced

	Electricity Network Planning	Level 5	Self Management	Advanced
	Emergency Response and Crisis Management	Level 6		
	Energy Security and Reliability Management	Level 6		
	Energy Storage Systems Management	Level 6		
	Engineering Safety Standards Interpretation	Level 5		
	Environmental Sustainability Management	Level 6		
	Equipment and Systems Installation and Commissioning	Level 5		
	Innovation Management	Level 6		
	Inter-agency Collaboration	Level 6		
	Internet of Things (IoT) Application	Level 6		
	Microgrids Implementation	Level 6		
	Modelling, Simulation and Visualisation	Level 5		
	Network Technical Specifications Development	Level 5		
	Policy Development	Level 3		
	Power Engineering Management	Level 5		
	Power Plant Incident Investigation	Level 5		
	Power Plant Inspection	Level 5		
	Power Quality Management	Level 6		
	Power Strategy Planning and Governance	Level 6		
	Power System Monitoring and Control Management	Level 6		
	Public Health and Safety Management	Level 6		
	Regulatory Advisory	Level 5		
	Regulatory Compliance and Risk Management	Level 6		
	Robotics and Automation Systems Application	Level 5		
	Smart Grid Implementation	Level 6		
	Solid-State Power System Apparatus Implementation	Level 6		
	Stakeholder Management	Level 6		
	Strategy Development	Level 6		
	Technical Inspection	Level 5		
	Technology Road Mapping	Level 6		
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.