

**POWER ENGINEERING COMPETENCY FRAMEWORK FOR POWER ENGINEERING PROFESSIONALS IN PUBLIC SERVICE
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

TSC Category	Electrical and Power Systems Management					
TSC Title	Airfield Lighting Systems Management					
TSC Description	Manage the design, testing and commissioning of airfield lighting systems					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		<Insert TSC Code>	<Insert TSC Code>	<Insert TSC Code>	<Insert TSC Code>	
		Verify design and oversee the installation and testing of airfield lighting systems	Review design, testing and commissioning of airfield lighting systems to ensure adherence to technical specifications	Provide solutions to optimise airfield lighting systems to enhance safety, reliability, compliance and maintainability	Evaluate and approve airfield lighting system proposals and identify opportunities to adopt new technologies	
Knowledge		<ul style="list-style-type: none"> • Functions of airfield lighting systems • Design formats and layouts of airfield lighting systems • Elevated and inset luminaries • Approach lighting systems and layouts • Precision approach path indicator (PAPI) and runway systems • Taxiway lighting systems and layouts • Airfield mandatory signage • Basic principles of constant current regulators (CCR) • Electrical cable installation, jointing and testing • Relevant regulations, industry standards and safety procedures 	<ul style="list-style-type: none"> • Principles of efficient airfield lighting systems • Design criteria and tendering technical evaluation for airfield lighting systems • Performance requirements for airfield lighting systems • Electrical and photometric testing techniques • Advantages of light-emitting diode (LED) airfield lighting systems • Series circuit design and fault-finding techniques • Airfield lighting system commissioning, testing and handover • Relevant regulations, industry standards and safety procedures 	<ul style="list-style-type: none"> • Design criteria and tendering technical evaluation for airfield lighting systems • Airfield lighting technologies including tungsten halogen and LED • Positioning and calibration of airfield lighting systems • System integration, transition and upgrade • Principles of efficient airfield lighting systems • Functions of airfield lighting monitoring and control systems • Relevant regulations, industry standards and safety procedures 	<ul style="list-style-type: none"> • Airfield lighting systems design techniques and protocols • New technologies in airfield lighting • Tender specifications for airfield lighting systems • System integration, transition and upgrade of airfield lighting systems • Airfield lighting risk management and safety management systems • Functions and benefits of airfield lighting monitoring and control systems • Relevant regulations, industry standards and safety procedures 	

**POWER ENGINEERING COMPETENCY FRAMEWORK FOR POWER ENGINEERING PROFESSIONALS IN PUBLIC SERVICE
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

<p>Abilities</p>		<ul style="list-style-type: none"> • Apply knowledge of airfield lighting systems • Check adherence to electrical safety principles and practices Verify airfield lighting system designs • Oversee installation and testing of airfield lighting systems • Verify adherence to technical specifications and project requirements • Check compliance with regulations, industry standards, and codes of practice 	<ul style="list-style-type: none"> • Review design specifications for airfield lighting systems • Check and evaluate technical proposals by tenderers for compliance with the tender requirements and specifications • Review design, progress reports on site installation and acceptance test to verify compliance with industry standards, regulations and project requirements Ensure that design has considered health, safety, ease of installation, serviceability and maintenance • Identify and report defects and non-compliance found during checks, inspection and testing and commissioning and propose solutions to rectify the defects and non-conformances • Identify relevant regulations, standards and safety procedures 	<ul style="list-style-type: none"> • Check design for reliability, completeness, feasibility, optimisation, cost-effectiveness, fit for purpose, sustainability • Propose solutions to optimise energy efficiency • Validate installation, testing and commissioning against project requirements and industry standards • Investigate report defects and non-compliance found during checks, inspection and testing and commissioning and provide solutions to rectify the defects and non-conformances • Develop technical tender specifications and method statements for contractors • Assess compliance of airfield lighting systems with relevant regulations, standards and safety procedures • Evaluate new technologies for application 	<ul style="list-style-type: none"> • Evaluate design, installation and commissioning of airfield lighting systems as per regulations, industry standards and project requirements • Provide acceptance for design, installation and commissioning of airfield lighting systems • Evaluate technical tender specifications and method statements for contractors • Build resilience into airfield lighting systems design for future services expansion • Drive adoption of energy-efficient solutions in airfield lighting systems • Recommend solutions to adopt new technologies for airfield lighting systems • Develop plans to upgrade airfield lighting systems • Drive compliance with regulations, industry standards, and codes of practice 	
-------------------------	--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--