

**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	Lightning Protection Systems Management					
TSC Description	Manage the design, testing and commissioning of lightning protection systems incorporating safety features and standards					
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 installation and testing of lightning protection systems	Review design, testing and commissioning of lightning protection systems to ensure adherence to technical specifications	Provide solutions to optimise lightning protection systems, and ensure compliance with standards and requirements	Evaluate and approve proposals for lightning protection systems, and identify opportunities to adopt new technologies	
Knowledge		<ul style="list-style-type: none"> Fundamentals of lightning protection systems designs Components of lightning protection systems Types of lightning protection systems materials Types of lightning rods types, air terminals, conductor cables, ground rods, and surge protection devices Electrical drawing standards Lightning protection systems installation and testing techniques Relevant regulations, industry standards, codes of practice, and safety procedures 	<ul style="list-style-type: none"> Principles of lightning protection systems designs Safety policies and practices Rolling sphere lightning protection methods Principles of lightning rods types, air terminals, conductor cables, ground rods, and surge protection devices Principles of earthing Lightning protection systems design and modification methods Lightning protection systems installation, testing and commissioning processes Relevant regulations, industry standards, codes of practice, and safety procedures 	<ul style="list-style-type: none"> Principles of lightning protection systems Troubleshooting methodologies Types of safety features in lightning protection systems Industry best practices in lightning protection systems designs Energy efficiency optimisation techniques Lightning protection systems design, installation, testing and commissioning standards Relevant regulations, industry standards, codes of practice, and safety procedures 	<ul style="list-style-type: none"> Principles of lightning protection systems Emerging technologies in lightning protection systems designs Industry best practices in lightning protection systems designs Local and international electrical safety best practices, and standards Emerging trends in energy-efficient lightning protection systems Lightning protection systems design, installation, testing and commissioning standards Relevant regulations, industry standards, codes of practice, and safety procedures 	
Abilities		<ul style="list-style-type: none"> Apply knowledge of lightning protection systems Check adherence to electrical safety principles and practices 	<ul style="list-style-type: none"> Review safety practices Review rolling sphere lightning protection methods in lightning protection systems designs 	<ul style="list-style-type: none"> Advise on incorporation of relevant safety features in the systems Evaluate lightning protection systems designs for accuracy 	<ul style="list-style-type: none"> Evaluate the design, installation and commissioning of lightning protection systems Provide acceptance for design, installation and 	

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		<ul style="list-style-type: none"> • Verify lightning protection system designs • Oversee installation and testing of lightning protection 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 of down conductor systems, air termination systems, grounding systems, and bonding systems • Review installation, testing and commissioning of lightning protection systems • Review compliance with regulations, industry standards, and codes of practice 	<ul style="list-style-type: none"> • Recommend solutions to troubleshoot design issues • Provide recommendations to optimise the accuracy of the design of lightning protection systems • Propose solutions to optimise energy efficiency • Validate installation, testing and commissioning against project requirements and industry standards • Ensure compliance with regulations, industry standards, and codes of practice 	<p>commissioning of lightning protection systems</p> <ul style="list-style-type: none"> • Drive adoption of energy-efficient solutions in lightning protection systems • Promote industry best practices in lightning protection systems • Recommend solutions to adopt new technologies for lightning protection systems • Drive compliance with regulations, industry standards, and codes of practice 	
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