

**SKILLS FRAMEWORK FOR PUBLIC TRANSPORT  
TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT**

<b>TSC Category</b>	Rail Systems Maintenance					
<b>TSC</b>	Communication Power System Maintenance					
<b>TSC Description</b>	Implement preventive and corrective maintenance activities of communication power system					
<b>TSC Proficiency Description</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level 5</b>	<b>Level 6</b>
	<b>PTP-RSM-1007-1.1</b>	<b>PTP-RSM-2007-1.1</b>	<b>PTP-RSM-3007-1.1</b>	<b>PTP-RSM-4007-1.1</b>		
	Carry out scheduled preventive maintenance on communication power system communication power system	Conduct corrective maintenance on communication power communication power system	Troubleshoot faulty communication power system to locate faults and recommend rectification methods	Diagnose root causes of communication power systems failure and review maintenance plans to prevent fault recurrence		
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>Types and functions of communication power equipment that includes: <ul style="list-style-type: none"> <li>Rectifier</li> <li>Battery</li> </ul> </li> <li>Procedures for servicing communication power system in accordance to organisational procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical manuals</li> <li>Types and usage of tools and equipment for carrying out preventive maintenance on communication power system</li> <li>Types of fault indicators on various communication power system</li> <li>Types and functions of protective relays</li> <li>Risk assessment procedures</li> <li>Safety guidelines on use of tools and equipment for preventive</li> </ul>	<ul style="list-style-type: none"> <li>Types and functions of communication power equipment that includes: <ul style="list-style-type: none"> <li>Rectifier</li> <li>Battery</li> </ul> </li> <li>Electronics circuit diagram and electrical wiring schematics</li> <li>Principles of power protection, isolation and distribution</li> <li>Common failures of communication power system and its components</li> <li>Risk assessment procedures</li> <li>Procedures for conducting functional checks</li> <li>Types of fault indicators on various communication power system</li> <li>Procedures to dis-assemble, assemble, repair, replace and rectify communication power equipment</li> <li>Types and usage of tools and equipment for</li> </ul>	<ul style="list-style-type: none"> <li>Electronics circuit diagram and electrical wiring schematics</li> <li>Fundamentals of power electronics</li> <li>Types of electrical safety requirements</li> <li>Common fault symptoms in communication power system</li> <li>Methods of locating and rectifying faults</li> <li>Types and usage of troubleshooting equipment and tools</li> <li>Safety guidelines for usage of tools and equipment to execute troubleshooting on communication power system</li> </ul>	<ul style="list-style-type: none"> <li>Fundamentals of power electronics</li> <li>Factors affecting the performance of communication power system</li> <li>Failure investigation and prevention methods</li> <li>Methods and tools for diagnostic analysis</li> <li>Organisational maintenance procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical recommendations</li> <li>Types and methods of continuity and functional tests on communication power systems</li> <li>Functional relationships between communication power system, other communication systems and overall rail systems</li> </ul>		

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	<p>maintenance on communication power system</p> <ul style="list-style-type: none"> <li>• Types and usage of Personal Protective Equipment (PPE) for communication power systems maintenance</li> <li>• Organisational maintenance documentation and fault reporting procedures</li> </ul>	<p>carrying out corrective maintenance on communication power system</p> <ul style="list-style-type: none"> <li>• Safety guidelines on use of tools and equipment for corrective maintenance on communication power system</li> <li>• Types and usage of Personal Protective Equipment (PPE) for communication power systems maintenance</li> </ul>				
<b>Abilities</b>	<ul style="list-style-type: none"> <li>• Follow organisational procedures, WI and/or OEM technical manuals to carry out preventive maintenance on communication power system</li> <li>• Perform serviceability checks on communication power system and equipment according to organisation procedures, WI and/or OEM technical manuals</li> <li>• Identify and respond to fault indicators on various communication power system</li> <li>• Adhere to safety guidelines and operating instructions when using tools and equipment during maintenance activities</li> <li>• Record communication power system maintenance activities and report occurrences of faults identified</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare Permit to Work (PTW) to conduct maintenance on communication power system</li> <li>• Interpret work orders and prepare for corrective maintenance</li> <li>• Test and check equipment performance and serviceability</li> <li>• Interpret wiring and schematic diagrams of communication power system and equipment</li> <li>• Apply power isolation procedures</li> <li>• Dismantle communication power equipment for corrective maintenance</li> <li>• Carry out rectification, repair and/or replacement faulty components</li> <li>• Reassemble and reinstate communication power system and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Use troubleshooting tools and equipment to locate and analyse causes of communication power system faults</li> <li>• Apply fault identification procedures to determine causes of communication power device and equipment faults</li> <li>• Recommend corrective actions for identified faults on communication power system</li> <li>• Implement procedures on safe usage of tools and equipment during maintenance work</li> <li>• Analyse maintenance work documented for communication power system to identify possible workflow improvements</li> </ul>	<ul style="list-style-type: none"> <li>• Establish structured failure investigation and specify functional testing requirements</li> <li>• Perform fault tree analyses to diagnose root cause failure of communication power system</li> <li>• Review organisational communication power system maintenance procedures and/or WI</li> <li>• Propose new and/or enhanced maintenance plans and/or WI in reference to OEM technical recommendations</li> <li>• Monitor overall maintenance progress of communication power system to ascertain effectiveness of maintenance plan</li> <li>• Develop solutions by analysing diagnostic data to prevent faults and failures recurrence</li> </ul>		

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		<ul style="list-style-type: none"> <li>• Perform functional tests on communication power system</li> <li>• Apply operating and safety measures in operating tools and equipment during maintenance work</li> <li>• Record and collate documentation of communication power system maintenance work</li> </ul>		<ul style="list-style-type: none"> <li>• Develop troubleshooting, rectification and fault analysis methods</li> <li>• Develop test procedures for system performance checks</li> <li>• Coordinate communication power system maintenance with other rail systems maintenance needs</li> </ul>		
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