<table>
<thead>
<tr>
<th>TSC Category</th>
<th>Rail Systems Maintenance</th>
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<tbody>
<tr>
<td>TSC</td>
<td>Communication Power System Maintenance</td>
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<tr>
<td>TSC Description</td>
<td>Implement preventive and corrective maintenance activities of communication power system</td>
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<td>TSC Proficiency Description</td>
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<tr>
<td>Level 1</td>
<td>Level 2</td>
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<tr>
<td>PTP-RSM-1007-1.1</td>
<td>PTP-RSM-2007-1.1</td>
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<tr>
<td>Carry out scheduled preventive maintenance on communication power system</td>
<td>Conduct corrective maintenance on communication power system</td>
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</table>

**Knowledge**

- Types and functions of communication power equipment that includes:
  - Rectifier
  - Battery
- Procedures for servicing communication power system in accordance to organisational procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical manuals
- Types and usage of tools and equipment for carrying out preventive maintenance on communication power system
- Types of fault indicators on various communication power systems
- Types and functions of protective relays
- Risk assessment procedures
- Safety guidelines on use of tools and equipment for preventive
- Types and functions of communication power equipment that includes:
  - Rectifier
  - Battery
- Electronics circuit diagram and electrical wiring schematics
- Principles of power protection, isolation and distribution
- Common failures of communication power system and its components
- Risk assessment procedures
- Procedures for conducting functional checks
- Types of fault indicators on various communication power system
- Procedures to disassemble, assemble, repair, replace and rectify communication power equipment
- Types and usage of tools and equipment for
- Electronics circuit diagram and electrical wiring schematics
- Fundamentals of power electronics
- Types of electrical safety requirements
- Common fault symptoms in communication power system
- Methods of locating and rectifying faults
- Types and usage of troubleshooting equipment and tools
- Safety guidelines for usage of tools and equipment to execute troubleshooting on communication power system
- Fundamentals of power electronics
- Factors affecting the performance of communication power system
- Failure investigation and prevention methods
- Methods and tools for diagnostic analysis
- Organisational maintenance procedures, Work Instructions (WI) and/or Original Equipment Manufacturer (OEM) technical recommendations
- Types and methods of continuity and functional tests on communication power systems
- Functional relationships between communication power system, other communication systems and overall rail systems
<table>
<thead>
<tr>
<th>Maintenance on communication power system</th>
<th>Carrying out corrective maintenance on communication power system</th>
<th>Using troubleshooting tools and equipment to locate and analyse causes of communication power system faults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types and usage of Personal Protective Equipment (PPE) for communication power systems maintenance</td>
<td>Safety guidelines on use of tools and equipment for corrective maintenance on communication power system</td>
<td>Establish structured failure investigation and specify functional testing requirements</td>
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<tr>
<td>Organisational maintenance documentation and fault reporting procedures</td>
<td>Types and usage of Personal Protective Equipment (PPE) for communication power systems maintenance</td>
<td>Perform fault tree analyses to diagnose root cause failure of communication power system</td>
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<tr>
<td>Abilities</td>
<td>Prepare Permit to Work (PTW) to conduct maintenance on communication power system</td>
<td>Review organisational communication power system maintenance procedures and/or WI</td>
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<tr>
<td>Prepare Permit to Work (PTW) to conduct maintenance on communication power system</td>
<td>Interpret work orders and prepare for corrective maintenance</td>
<td>Propose new and/or enhanced maintenance plans and/or WI in reference to OEM technical recommendations</td>
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<tr>
<td>Interpret work orders and prepare for corrective maintenance</td>
<td>Test and check equipment performance and serviceability</td>
<td>Monitor overall maintenance progress of communication power system to ascertain effectiveness of maintenance plan</td>
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<tr>
<td>Test and check equipment performance and serviceability</td>
<td>Interpret wiring and schematic diagrams of communication power system and equipment</td>
<td>Develop solutions by analysing diagnostic data to prevent faults and failures recurrence</td>
</tr>
<tr>
<td>Interpret wiring and schematic diagrams of communication power system and equipment</td>
<td>Apply power isolation procedures</td>
<td>Analyse maintenance work documented for communication power system to identify possible workflow improvements</td>
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<tr>
<td>Apply power isolation procedures</td>
<td>Dismantle communication power equipment for corrective maintenance</td>
<td>Establish structured failure investigation and specify functional testing requirements</td>
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<tr>
<td>Dismantle communication power equipment for corrective maintenance</td>
<td>Carry out rectification, repair and/or replacement faulty components</td>
<td>Prepare Permit to Work (PTW) to conduct maintenance on communication power system</td>
</tr>
<tr>
<td>Carry out rectification, repair and/or replacement faulty components</td>
<td>Reassemble and reinstate communication power system and equipment</td>
<td>Review organisational communication power system maintenance procedures and/or WI</td>
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<tr>
<td>Reassemble and reinstate communication power system and equipment</td>
<td>Use troubleshooting tools and equipment to locate and analyse causes of communication power system faults</td>
<td>Review organisational communication power system maintenance procedures and/or WI</td>
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<tr>
<td>Use troubleshooting tools and equipment to locate and analyse causes of communication power system faults</td>
<td>Establish structured failure investigation and specify functional testing requirements</td>
<td>Improve organisational communication power system maintenance procedures and/or WI</td>
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<tr>
<td>Establish structured failure investigation and specify functional testing requirements</td>
<td>Prepare Permit to Work (PTW) to conduct maintenance on communication power system</td>
<td>Develop solutions by analysing diagnostic data to prevent faults and failures recurrence</td>
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Abilities:
- Follow organisational procedures, WI and/or OEM technical manuals to carry out preventive maintenance on communication power system
- Perform serviceability checks on communication power system and equipment according to organisation procedures, WI and/or OEM technical manuals
- Identify and respond to fault indicators on various communication power system
- Adhere to safety guidelines and operating instructions when using tools and equipment during maintenance activities
- Record communication power system maintenance activities and report occurrences of faults identified
- Prepare Permit to Work (PTW) to conduct maintenance on communication power system
- Interpret work orders and prepare for corrective maintenance
- Test and check equipment performance and serviceability
- Interpret wiring and schematic diagrams of communication power system and equipment
- Apply power isolation procedures
- Dismantle communication power equipment for corrective maintenance
- Carry out rectification, repair and/or replacement faulty components
- Reassemble and reinstate communication power system and equipment
- Use troubleshooting tools and equipment to locate and analyse causes of communication power system faults
- Establish structured failure investigation and specify functional testing requirements
- Prepare Permit to Work (PTW) to conduct maintenance on communication power system
- Review organisational communication power system maintenance procedures and/or WI
- Establish structured failure investigation and specify functional testing requirements
- Develop solutions by analysing diagnostic data to prevent faults and failures recurrence
| • Perform functional tests on communication power system  
• Apply operating and safety measures in operating tools and equipment during maintenance work  
• Record and collate documentation of communication power system maintenance work | • Develop troubleshooting, rectification and fault analysis methods  
• Develop test procedures for system performance checks  
• Coordinate communication power system maintenance with other rail systems maintenance needs |