

1. Title	Repair the faults in electrical systems of electric trains
2. Code	EMRAOR301A
3. Range	Identify and repair the faults in electrical systems of electric trains at train maintenance centres or during operation of trains.
4. Level	3
5. Credits	5
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Working principles of electrical systems and equipment of electric trains and basic fault finding techniques</p> <ul style="list-style-type: none"> <li>◆ Understand the structure and working principles of the electrical systems and equipment of electric trains</li> <li>◆ Be familiar with the circuits and pipe lines of the electrical systems and equipment of electric trains</li> <li>◆ Master the basic fault finding techniques</li> </ul> <p>6.2 Methods and procedures of finding and repairing the faults in electrical systems and control circuits of electric trains</p> <ul style="list-style-type: none"> <li>◆ Able to read the electrical and pneumatic engineering drawings and check the circuits and pipe lines systematically and efficiently</li> <li>◆ Check the circuits of the following electrical systems and equipment of electric trains to find the root causes of faults according to the fault symptoms <ul style="list-style-type: none"> <li>• Pantograph</li> <li>• Lightning arrestors</li> <li>• Circuit breakers</li> <li>• Main power lines</li> <li>• Main inverters</li> <li>• Electricity return brushes</li> <li>• System control circuits</li> </ul> </li> <li>◆ Check the pipe lines of the pantographs and circuit breakers to find the roots of faults according to the fault symptoms</li> <li>◆ Repair the faults after identifying the fault equipment or components</li> <li>◆ Use general electrical and pneumatic device repairing and testing instruments and tools efficiently</li> </ul> <p>6.3 Professionalism in repairing faults in electrical systems of electric trains</p> <ul style="list-style-type: none"> <li>◆ Understand the safety guidelines as required by the law and codes of practice in removing faults in electrical systems of electric trains</li> </ul>

7. Assessment Criteria	<p>The integrated outcome requirement of this unit of competency is:</p> <ul style="list-style-type: none"> <li>(i) Capable to identify the faults in the electrical system control circuits of electric trains within a reasonable period of time according to the fault symptoms;</li> <li>(ii) Capable to identify the pneumatic faults in the electrical system equipment of electric trains within a reasonable period of time according to the fault symptoms; and</li> <li>(iii) Capable to identify the system faults in the electrical system equipment of electric trains within a reasonable period of time according to the fault symptoms.</li> </ul>
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses basic knowledge of electrical and pneumatic equipment.</p>