

1. Title	Formulate the inspection, commissioning and testing guidelines and standards for the electrical equipment of trains
2. Code	EMRAIT503A
3. Range	Refer to the design of the electrical equipment of trains and the inspection and testing guidelines of manufacturers and undertake site inspection, measurement and tests of the equipment so as to formulate the inspection, commissioning and testing guidelines and standards for the electrical equipment of trains.
4. Level	4
5. Credits	9
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Design, working principles and standards of the electrical system equipment of trains</p> <ul style="list-style-type: none"> ◆ Understand the design, structure and working principles of the electrical equipment of trains ◆ Know about the application of the inspection and testing guidelines of manufacturers ◆ Master the techniques of working out the inspection, commissioning and testing standards for the electrical system equipment of trains ◆ Understand the application of typical electrical equipment measuring and testing instruments and tools <p>6.2 Methods and procedures of formulating the inspection, commissioning and testing guidelines for the electrical system equipment of trains</p> <ul style="list-style-type: none"> ◆ Refer to the design of the power supply system equipment of trains and the inspection and testing guidelines of manufacturers and undertake site inspection, measurement and testing of the equipment and draft the inspection, commissioning and testing guidelines and standards for the electricity power system equipment of trains, including pantograph, lighting arresters, spark gaps, main power circuits, breakers, and electricity return brush. Aspects to be covered are: <ul style="list-style-type: none"> • Inspection procedures (including visual inspection and data taking) and standards • Testing procedures and standards (including insulation, continuity and function tests) • Procedures and standards of equipment setting • Important points for inspection, testing and setting ◆ Test the drafted inspection, commissioning and testing guidelines and standards

	<ul style="list-style-type: none"> ◆ Analyze data and modify and formulate the inspection, commissioning and testing guidelines and standards for the power supply system and control and protection equipment of trains ◆ Draft, test and formulate the inspection, commissioning and testing guidelines and standards for the traction motors and control and protection equipment of trains ◆ Draft, test and formulate the inspection, commissioning and testing guidelines and standards for the inverters and control and protection equipment of trains ◆ Compile, test and analyze data and formulate the inspection, commissioning and testing guidelines and standards for the motor-alternators and control and protection equipment of trains ◆ Draft, test and formulate the inspection, commissioning and testing guidelines and standards for the train lines and the train door loop protection circuit and brake loop protection circuit <p>6.3 Professionalism in formulating the inspection, commissioning and testing guidelines for the electrical system equipment of trains</p> <ul style="list-style-type: none"> ◆ Formulate the inspection, commissioning and testing guidelines for the electrical system equipment of trains according to the standards and requirements for work safety, health, environmental protection and quality management of railway works ◆ Understand the safety guidelines as required by the law and codes of practice in formulating the inspection, commissioning and testing guidelines for the electrical system of trains
<p>7. Assessment Criteria</p>	<p>The integrated outcome requirement of this unit of competency is:</p> <p>(i) Capable to draft a set of inspection, commissioning and testing guidelines and standards for the major electrical equipment and control and protection circuits of trains according to commissioning requirements; and</p> <p>(ii) Capable to test the effectiveness of the drafted inspection, commissioning and testing guidelines and standards efficiently; analyze data and conduct reviews and modifications.</p>
<p>8. Remarks</p>	<p>The credit value of this unit of competency is set on the presumption that the person already possesses professional knowledge of electrical engineering and the electrical system of trains.</p>