

TSC Category	Discipline Engineering Specialisation					
TSC	Electrical Engineering Management					
TSC Description	Manage the design, technical specification, selection, modification and troubleshooting of electrical engineering equipment and systems in process plants					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			ECM-DEG-3001-1.1	ECM-DEG-4001-1.1	ECM-DEG-5001-1.1	
			Interpret designs, technical specifications, modification designs, constructability methods, maintenance procedures and asset integrity to provide electrical engineering discipline support to production, maintenance and project teams	Develop designs, technical specifications, modification designs, constructability methods, maintenance procedures and asset integrity to manage electrical engineering discipline support to production, maintenance and project teams	Evaluate designs, technical specifications, modification designs, constructability methods, maintenance procedures and asset integrity to drive high standards of electrical engineering discipline support to production, maintenance and project teams	
Knowledge			<ul style="list-style-type: none"> • Electrical safety principles and practices • Hazardous areas and explosion-proof (Ex) equipment principles specific codes (IEC 60079-10, API RP500/505 etc.) • Electrical system design and modification methods • Electrical protection and control methods • Electrical standards and codes of practice • Earthing and bonding principles and techniques • Electrical equipment selection methods • Electrical drawing standards • Electrical construction and commissioning principles 	<ul style="list-style-type: none"> • Local and international electrical safety standards • Electrical system studies methodologies • Local and international electrical construction and commissioning standards and best practices • Local and international electrical maintenance standards and best practices • Electrical maintenance strategies implementation • Methods of interpreting condition monitoring system data 	<ul style="list-style-type: none"> • Local and international electrical systems safety standards and best practices • Electrical systems design and modification practices • Local and international electrical standards and regulations • Electrical maintenance strategies • Engineering, procurement and construction (EPC) project management 	

**SKILLS FRAMEWORK FOR ENERGY AND CHEMICALS
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

			<ul style="list-style-type: none"> • Electrical maintenance principles 			
Abilities			<ul style="list-style-type: none"> • Interpret designs, technical specifications, modification designs, constructability methods, maintenance procedures and asset integrity • Contribute to the development, review and application of the organisation's electrical safe working procedures • Develop area classification layouts and sections applying specific codes • Create and/or modify low voltage (LV) and high voltage (HV) systems designs, sizing and fault ratings of switchgears, cable sizes, etc. • Create and/or modify designs of other electrical systems, earthing/grounding, heat-tracing, lighting, air conditioning, etc., considering load, contingency and future needs • Design or modify electrical protection and control systems, including selection of settings and parameters • Support the construction, installation and commissioning of electrical equipment and systems • Define, review and/or verify bonding and earth/grounding 	<ul style="list-style-type: none"> • Develop designs, technical specifications, modification designs, constructability methods, maintenance procedures and asset integrity • Manage the development and implementation of the organisation's electrical safe working procedures • Manage the development and implementation of area classification layouts and sections • Review results of explosion-proof (Ex) and/or hazardous location inspection analyses and recommend changes in strategies • Manage the modification and/or new design, descriptions and philosophies of main power distribution and power generation and/or grid supply designs • Review the design/or modification to electrical protection and control systems, including selection of settings and parameters • Review, validate or re-validate temporary electrical installations 	<ul style="list-style-type: none"> • Evaluate designs, technical specifications, modification designs, constructability methods, maintenance procedures and asset integrity • Set the organisation's electrical safety standards • Review and endorse the organisation's electrical safe working procedures • Review and endorse area classification layouts and sections for the facility • Define strategies for electrical equipment used in hazardous areas explosion-proof (Ex) competence levels and evidence requirements for designers, installers, maintainers and repairers • Review and endorse modifications and/or designs of main electrical systems, power distribution and power generation systems • Review and endorse electrical system studies required during various project phases, to verify system designs and equipment selection • Review and approve electrical systems maintenance and construction support through plans and 	

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			measures to control static electricity		drawings, specifications and design criteria <ul style="list-style-type: none">• Benchmark electrical equipment integrity management systems against organisational, statutory and/or regulatory requirements	
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