

TSC Category	Discipline Engineering Specialisation					
TSC	Mechanical Static Equipment Engineering Management					
TSC Description	Manage the design, technical specification, selection, modification and troubleshooting of mechanical static equipment, structures and systems to provide mechanical engineering discipline support to production, maintenance and project teams					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			ECM-DEG-3009-1.1	ECM-DEG-4009-1.1	ECM-DEG-5009-1.1	
			Interpret designs, technical specifications, modification designs, constructability methods, maintenance procedures, and asset integrity techniques to provide mechanical static engineering support to production, maintenance and project teams	Facilitate the development and implementation of designs, technical specifications, modification designs, constructability methods, maintenance procedures and asset integrity to manage mechanical static engineering support to production, maintenance and project teams	Evaluate designs, technical specifications, modification designs, constructability methods, maintenance procedures and asset integrity to drive standards of mechanical static engineering support to production, maintenance and project teams	
Knowledge			<ul style="list-style-type: none"> Static mechanical equipment engineering standards Static mechanical equipment construction standards Principles of equipment integrity and fitness-for-service (FFS) Materials of construction Principles of piping and valve systems and piping classes Investigation of equipment and/or piping failure methods Welding systems, codes, specifications and standards Mechanical static equipment maintenance principles 	<ul style="list-style-type: none"> Methods of field mechanical engineering, construction and asset support Management techniques for engineering design activities Equipment and piping failure analysis techniques Pressure vessels designs and specifications Heat exchangers designs and specifications Piping and valve systems design methods Static equipment engineering standards and best practices Mechanical static equipment integrity and fitness-for-service (FFS) 	<ul style="list-style-type: none"> Feld mechanical engineering, construction and asset support methods and techniques Mechanical engineering design evaluation methods Engineering project leadership Industry best practices in mechanical maintenance and reliability methods, techniques and practices Technological advancements in asset reliability and integrity maintenance 	

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

<p>Abilities</p>			<ul style="list-style-type: none"> • Select and apply mechanical static equipment engineering standards • Provide engineering support at site for the installation, inspection, and testing of static mechanical equipment and piping work • Perform reviews for FFS and remaining life assessments for static mechanical equipment • Apply functional and safeguarding specifications for pressure vessels and/or heat exchangers using applicable codes and standards • Provide commissioning support, evaluation, troubleshooting of unfired and fired heat transfer equipment • Identify stress analysis methods and techniques to determine the integrity of piping and equipment • Conduct and verify equipment layout studies 	<ul style="list-style-type: none"> • Provide engineering support at site for the installation, inspection, testing of static mechanical equipment and piping work • Manage FFS and remaining life assessments for static mechanical equipment • Manage materials quality assurance and quality control (QA&QC) needs in specifying, manufacturing, procurement and installation • Define performance, functional and safeguarding specifications for pressure vessels and/or heat exchangers using applicable codes and standards • Manage commissioning support, evaluation, troubleshooting of unfired and fired heat transfer equipment • Manage the integration of operational and/or maintenance requirements into projects • Develop and implement equipment and materials procurement processes • Manage vendor selection, qualification and review processes • Manage FFS and remaining life assessments 	<ul style="list-style-type: none"> • Define and mature project execution and construction strategy through each project • Review and approve piping and valve systems maintenance and construction support through plans and isometrics, specifications and design criteria • Benchmark equipment integrity management systems against organisational, statutory and/or regulatory requirements • Define materials selection and corrosion control strategies for life-cycle integrity • Review and endorse formal handovers and close-out work procedures and practises for the asset owner • Review and endorse equipment fitness-for-service (FFS), remaining life, repair and replacement assessments and proposals 	
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