

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

TSC Category	Engineering Design and Project Management					
TSC	Engineering Management of Change					
TSC Description	Manage changes made to process plants, equipment and systems to ensure possible hazards and implications to process safety, production and quality are taken into consideration, and such changes are traceable, documented and evaluated					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			ECM-EPM-3002-1.1	ECM-EPM-4002-1.1	ECM-EPM-5002-1.1	
			Interpret Management of Change (MOC) processes and procedures to effectively implement and document changes made to process plants, equipment and systems	Establish Management of Change (MOC) processes and procedures to ensure possible hazards, implication to process safety, production and quality are taken into consideration	Evaluate Management of Change (MOC) workflow processes to effectively manage changes made to processes, equipment and systems for continuous improvement	
Knowledge			<ul style="list-style-type: none"> • MOC processes and procedures • Types of changes made to process plants, equipment and systems • Basic process plant and equipment design and operating principles • Safe operating conditions and practices • Process hazard analysis and risk control measures • Types of MOC documentation 	<ul style="list-style-type: none"> • MOC standards, processes and procedures • Roles and responsibilities of stakeholders involved in MOC processes • Types of changes made to process plants, equipment and systems, and the work processes to initiate, implement and evaluate such changes • Change recognition and impact risk assessments • Methods of documenting and maintaining evidence and audit trails • Methods of ensuring As-Built documentation for procedures, Safe System of Work (SSoW) are issued to the relevant departments 	<ul style="list-style-type: none"> • Industry best practices for engineering MOC • Field verification processes and techniques • Methods to review MOC • Methods to evaluate costs and benefits • Methods of system thinking on the MOC and the inter-relationship of work processes and process units 	

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<p>Abilities</p>			<ul style="list-style-type: none"> • Interpret MOC processes and procedures for process plants, equipment and systems • Implement modifications to current operating procedures due to changes made to process plants, equipment and systems • Identify potential hazards and risk controls requirements due to changes made to process plants, equipment and systems • Analyse potential compromise to built-in safeguards of existing design of process plants, equipment and systems due to changes made • Communicate implications of changes made to relevant stakeholders • Prepare necessary MOC documentation to ensure traceability of changes 	<ul style="list-style-type: none"> • Plan MOC management work processes, workflows, roles and responsibilities of relevant stakeholders • Implement and coordinate MOC processes • Review, categorise and document MOC activities • Update process safety information • Undertake MOC risk reviews and impact assessments • Prioritise recommendations for operating and maintenance procedural documentation • Lead communications with team members and management regarding changes and their implications to relevant stakeholders 	<ul style="list-style-type: none"> • Authorise change requirements and ensure appropriate measures are in place before approving the change • Review proposed changes and approve the MOC proposal • Verify proposed MOC implementation and documentation requirement are prior to close-out • Review information on process safety updates • Review MOC risk reviews and impact assessments • Review operating and maintenance procedural documentation and ensure correct document control and release to relevant departments • Evaluate effectiveness of MOC implementation 	
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