

<b>TSC Category</b>	Engineering Design Management					
<b>TSC</b>	Front-End Engineering and Design					
<b>TSC Description</b>	Manage Front-End Engineering and Design for equipment, components and systems					
<b>TSC Proficiency Description</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level 5</b>	<b>Level 6</b>
			<b>EGS-EPM-3064-1.1</b>	<b>EGS-EPM-4064-1.1</b>	<b>EGS-EPM-5064-1.1</b>	
			Interpret engineering design principles to contribute to Front-End Engineering and Design (FEED)	Establish Front-End Engineering and Design (FEED) related workflows and procedures to lead FEED studies and projects	Validate engineering design to direct Front-End Engineering and Design (FEED) studies and critical design evaluation and validation reviews	
<b>Knowledge</b>			<ul style="list-style-type: none"> <li>• FEED standards and principles</li> <li>• Principles of mechanical, electrical, civil, geotechnical or instrumentation and control engineering</li> <li>• Engineering design principles</li> <li>• Types of engineering drawings, including Process Flow Diagrams (PFDs), Piping and Instrument Diagrams (PIDs) and isometric drawings</li> <li>• Stages of basic and detailed engineering</li> <li>• Equipment selection techniques</li> <li>• Equipment costing techniques and calculations</li> <li>• Project risk and hazard identification</li> <li>• FEED deliverables packaging</li> </ul>	<ul style="list-style-type: none"> <li>• FEED management principles and practices</li> <li>• Engineering design codes and specifications</li> <li>• Equipment sizing, selection and performance evaluation methods</li> <li>• Project costing and estimation methods</li> <li>• Principles of Hazard and Operability studies (HAZOP)</li> <li>• Principles of Hazard Identification (HAZID) studies</li> <li>• Lifecycle efficiency methods</li> <li>• Types of constructability analysis techniques</li> <li>• FEED close-out reports and deliverables</li> </ul>	<ul style="list-style-type: none"> <li>• International and industry best practices of FEED for process plant and equipment</li> <li>• Project life cycle concepts</li> <li>• Engineering design philosophies and principles</li> <li>• Engineering design, procurement and construction codes and specifications</li> <li>• Project planning and scheduling techniques</li> <li>• Engineering, procurement and construction (EPC) project management principles</li> <li>• Project financing principles</li> <li>• Organisational compliance and risk management frameworks</li> </ul>	

<p><b>Abilities</b></p>			<ul style="list-style-type: none"> <li>• Interpret and apply FEED engineering standards and procedures</li> <li>• Provide discipline specific engineering support to FEED engineering studies and projects</li> <li>• Interpret engineering design principles related to FEED</li> <li>• Support in the development of the basis of design criteria</li> <li>• Liaise with a wide range of discipline engineers on design matters</li> <li>• Carry out FEED equipment costing and budgeting</li> <li>• Conduct risk and hazardous operations reviews</li> <li>• Provide discipline specific FEED update reports</li> <li>• Log and record FEED documents within the data management system</li> </ul>	<ul style="list-style-type: none"> <li>• Implement FEED engineering and design procedures, workflows and activities</li> <li>• Provide expert discipline specific engineering technical support</li> <li>• Undertake technical document reviews</li> <li>• Carry out early discipline specific critical reviews</li> <li>• Define overall project cost estimates</li> <li>• Evaluate design options for project cost optimisation and return on investment (ROI) maximisation</li> <li>• Conduct HAZOP and HAZID studies</li> <li>• Conduct project risk and hazard identification</li> <li>• Ensure development and packaging of FEED deliverables</li> </ul>	<ul style="list-style-type: none"> <li>• Endorse FEED engineering and design activities</li> <li>• Validate the results of FEED studies</li> <li>• Integrate project life cycle concepts to FEED process</li> <li>• Incorporate international and industry best practices of FEED into the technical reviews and validation of projects and studies</li> <li>• Conduct critical design evaluations and validation reviews</li> <li>• Drive project cost optimization and return on investment (ROI) maximisation</li> <li>• Approve bids based on FEED design and overall project cost estimates</li> <li>• Endorse Hazard and Operability (HAZOP) and Hazard Identification (HAZID) studies recommendations</li> </ul>	
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