

TSC Category	Maintenance Management					
TSC	Plant Turnaround Management					
TSC Description	Develop and implement plant turnaround management plans to achieve turnaround objectives in coordination with internal and external stakeholders					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	ECM-MAI-1004-1.1	ECM-MAI-2004-1.1	ECM-MAI-3004-1.1	ECM-MAI-4004-1.1	ECM-MAI-5004-1.1	
	Identify turnaround processes and procedures to assist in maintenance tasks associated with turnaround projects	Apply turnaround management plans and procedures to perform maintenance tasks associated with turnaround projects and to support the coordination of turnaround work	Interpret turnaround management plans and procedures to coordinate turnaround activities and to ensure compliance with regulatory and organisational requirements	Develop turnaround management plans to ensure safety and reliability during the turnaround process	Formulate strategies to drive turnaround projects to achieve safety, high quality reliability performance and optimal productivity	
Knowledge	<ul style="list-style-type: none"> Fundamentals of turnaround and turnaround phases Safety plans and Safe System of Work (SSoW) including Permit-to-Work systems, safe isolations, and Lock-Out-Tag-Out (LOTO) procedures Workplace Safety and Health (WSH) and Environmental Management System (EMS) related policies, standards and procedures and interfacing with third-parties Maintenance work instructions 	<ul style="list-style-type: none"> Fundamentals of turnaround and turnaround phases Safety plans and Safe System of Work (SSoW) including Permit-to-Work systems, safe isolations, and Lock-Out-Tag-Out (LOTO) procedures Workplace Safety and Health (WSH) and Environmental Management System (EMS) related policies, standards and procedures and interfacing with third-parties Maintenance work instructions Document control systems and workflows 	<ul style="list-style-type: none"> Fundamentals of turnaround and turnaround phases Safety plans and Safe System of Work (SSoW) including Permit-to-Work systems Workplace Safety and Health (WSH) and Environmental Management System (EMS) related policies, standards and procedures and interfacing with third-parties Logistics management and disposition of physical items Plot plans and procedures for control of bulkwork Types of turnaround work Workflow scheduling and work-list analysis 	<ul style="list-style-type: none"> Philosophy and fundamentals of turnaround and turnaround phases Safety plans and Safe System of Work (SSoW) for turnaround Workplace Safety and Health (WSH) and Environmental Management System (EMS) related policies, standards and procedures and interfacing with third-parties Role and responsibilities of turnaround teams and team members Quality assurance and control criteria for turnaround work Critical path analysis Turnaround key performance indicators (KPIs) 	<ul style="list-style-type: none"> Roles and responsibilities of turnaround teams and turnaround managers Total Quality Approach Critical relationships with internal and external stakeholders during turnarounds Contractor management strategies Cost estimation, control and reporting models Industry best practices and international benchmarks for turnaround progress, performance and overall productivity Critical path analysis Turnaround performance assessment and evaluation methods Strategies for turnaround improvement 	

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

			<ul style="list-style-type: none"> • Turnaround preparation, planning and execution methods • Coordination techniques with contractors and other stakeholders • Tracking work progress methods • Document control systems and workflows 	<ul style="list-style-type: none"> • Control of work and progress measurement systems • Contract management with contractors and vendors • Resource management plans • Acceptance certificates principles and practices 	
Abilities	<ul style="list-style-type: none"> • Identify turnaround processes and procedures • Assist in turnaround maintenance work under supervision • Follow safety plans and apply SSoW related practices and procedures during turnarounds 	<ul style="list-style-type: none"> • Apply turnaround management plans and procedures • Apply safety plan and SSoW related practices and procedures during plant turnaround activities • Use maintenance work instructions and record maintenance turnaround activities • Carry out maintenance tasks during plant turnaround projects • Support the coordination and control of work at turnaround sites • Record, document and file turnaround work activities 	<ul style="list-style-type: none"> • Interpret turnaround management plans and procedures • Execute safety plans and ensure compliance to SSoW for all relevant parties • Support the implementation of WSH and EMS standards, policies and procedures during plant turnaround projects • Coordinate logistics and disposition of physical items at turnaround site • Control bulkwork in coordination with contractors • Guide the execution of turnaround work in accordance to work plans and schedules • Coordinate and ensure documents related to turnaround activities are properly recorded, documented and filed 	<ul style="list-style-type: none"> • Formulate safety plans and Safe System of Work (SSoW) with the involvement of all turnaround stakeholders • Conduct plant safety compliance audits during turnaround projects • Ensure the implementation and compliance of organisational standards and procedures during maintenance turnaround projects • Set and monitor turnaround KPIs • Establish quality assurance and quality control criteria for turnaround projects • Establish plant turnaround plans and schedules with identification of critical path issues • Establish contract management and identify pre-qualification criteria • Control turnaround work and measure work progress in accordance 	<ul style="list-style-type: none"> • Direct maintenance teams, including contractors and vendors, for turnaround work • Formulate Total Quality Approach and lead the implementation of turnaround projects • Justify a strategic and structured plant turnaround plan • Validate maintenance contracting models that ensure continuous commitment to project goals and timelines • Manage cost turnaround project cost • Lead the implementation of key strategies and measures to benchmark progress, performance and overall productivity of turnarounds • Evaluate turnaround performance with reference to key performance indicators (KPIs), quality assurance and quality control criteria • Devise strategies to improve plant turnaround management

				to progress measurement systems		
				<ul style="list-style-type: none">Plan resources required for turnaround activities		