



TAR Maintenance Planning and Management

31 January – 4 February 2027
Kuala Lumpur (Malaysia)



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Introduction

Turnaround TAR maintenance is one of the most critical and high-risk activities in oil refineries and large industrial facilities, requiring precise planning, coordination, and execution discipline. This TAR Maintenance Planning and Management course provides a structured and professional framework for managing turnaround maintenance effectively, ensuring operational continuity and asset integrity. Participants will explore advanced planning methodologies, including scope definition, scheduling strategies, and resource optimization, aligned with global industry standards. The program emphasizes proactive risk management, cost control, and safety integration throughout the TAR lifecycle. It highlights the importance of collaboration between stakeholders, contractors, and internal teams to achieve seamless execution. By focusing on real-world industrial practices, this training equips professionals to deliver safe, timely, and cost-efficient turnaround projects.

Targeted Groups

This TAR Maintenance Planning and Management training targets professionals seeking knowledge and skills:

- Maintenance engineers in oil and gas facilities.
- Turnaround planners and coordinators.
- Project engineers manage shutdown activities.
- Operations supervisors are involved in plant shutdowns.
- Reliability and asset integrity professionals.
- HSE specialists supporting TAR execution.
- Contract and procurement professionals in industrial sectors.
- Technical managers are responsible for plant performance.

Course Objectives

Participants will achieve the following objectives by completing the TAR Maintenance Planning and Management course:

- Understand structured turnaround maintenance planning strategies.
- Define and control TAR scope using job lists and priorities.
- Apply work breakdown structures for organized execution.
- Develop optimized turnaround schedules using critical path methods.
- Improve resource planning for labor, tools, and equipment.
- Identify risks and implement effective mitigation strategies.
- Efficiently manage contractor mobilization and site coordination.
- Enhance the accuracy of spare parts and materials planning.
- Integrate safety systems into turnaround planning phases.
- Monitor schedule adherence and cost performance indicators.
- Evaluate TAR execution performance using measurable metrics.
- Apply lessons learned for continuous improvement practices.

Targeted Competencies

Participants will gain the following competencies during the TAR Maintenance Planning and Management program:

- Advanced turnaround planning and scheduling techniques.
- Effective scope definition and work package development.
- Risk assessment and mitigation planning skills.
- Resource allocation and workforce planning capabilities.
- Contractor coordination and performance management.
- Materials and inventory planning optimization.
- Safety integration in high-risk maintenance environments.
- Performance monitoring and KPI evaluation skills.
- Decision-making under operational constraints.
- Continuous improvement and post-turnaround evaluation expertise.

Studying Scenarios

In this TAR Maintenance Planning and Management training, participants develop skills through the following scenarios:

- Managing a refinery turnaround with limited resources.
- Resolving schedule conflicts in critical maintenance tasks.
- Handling delays caused by late material delivery.
- Coordinating multiple contractors in congested sites.
- Implementing safety controls during simultaneous operations.
- Analyzing post-TAR performance and improvement actions.

Course Content

Unit 1: Fundamentals of Turnaround Maintenance Planning

- Definition and strategic importance of turnaround maintenance in industrial operations.
- Key differences between routine maintenance and shutdown turnaround planning.
- Overview of turnaround lifecycle phases: initiation, planning, execution, and closure.
- Understanding the role of turnaround planning in asset reliability and operational efficiency.
- Introduction to international best practices in refinery turnaround planning.
- Key success factors for achieving safe and cost-effective turnaround execution.
- Common challenges in TAR projects include scope creep and schedule overruns.
- Roles and responsibilities of stakeholders in turnaround maintenance management.

Unit 2: Scope Definition and Work Breakdown Structure WBS

- Developing a comprehensive turnaround scope using job lists and inspection data.
- Techniques for prioritizing maintenance tasks based on risk and criticality.
- Structuring work packages for efficient turnaround execution.
- Application of Work Breakdown Structure WBS in TAR planning.
- Managing scope changes and preventing uncontrolled scope expansion.
- Aligning turnaround scope with production and operational requirements.
- Integration of inspection findings into maintenance scope planning.
- Ensuring completeness and accuracy of turnaround work scope documentation.

Unit 3: Scheduling and Resource Planning

- Principles of turnaround scheduling using the critical path method CPM.
- Developing detailed shutdown schedules with logical task sequencing.
- Identifying critical activities that impact turnaround duration.
- Resource planning for the workforce, tools, and specialized equipment.
- Techniques for resource leveling to avoid workforce overload.
- Managing shift planning and work-hour optimization during TAR.
- Addressing schedule risks and contingency planning strategies.
- Use of scheduling tools and software in turnaround maintenance projects.

Unit 4: Risk Management, Safety, and Execution Control

- Identification of key risks associated with turnaround maintenance projects.
- Implementing risk mitigation strategies during the planning and execution phases.
- Integration of Permit-to-Work PTW systems into TAR planning processes.
- Managing simultaneous operations SIMOPS in high-risk environments.
- Ensuring compliance with HSE standards and safety regulations.
- Site coordination and congestion management during turnaround execution.
- Monitoring contractor safety performance and compliance.
- Establishing a zero-incident culture in turnaround activities.

Unit 5: Materials, Performance Monitoring, and Continuous Improvement

- Planning and managing spare parts and materials for turnaround projects.
- Handling long lead-time procurement and vendor coordination.
- Warehouse readiness and inventory control for TAR execution.
- Monitoring turnaround performance using KPIs and metrics.
- Tracking schedule adherence and cost performance indicators.
- Conducting post-turnaround reviews and lessons learned analysis.
- Identifying improvement opportunities for future turnaround projects.
- Building a culture of continuous improvement in maintenance planning.

Final Insights & Key Takeaways

Effective turnaround maintenance planning is essential for achieving safe, timely, and cost-efficient industrial operations. A structured and disciplined TAR approach enables organizations to minimize risks, optimize resources, and ensure sustainable performance improvements.