



PE020: Refinery Shutdown & Turnaround





Training Description:

Refineries extreme safety and continuous operation constriction requirements demand properly designed and executed shutdowns together with increase in efficiency with the use of latest technologies place massive importance on properly designed and executed shutdown and turnaround.

Refinery Shutdown and Turnaround introduces the methodologies to plan execute major overhaul and upgrading in the most efficient and cost-effective way of the highly complex refinery structure.

This intensive training course emphasizes the optimization of the shutdown work structure, so assets remain reliable and efficient with minimization of the required shutdowns throughout the life cycle of the Refinery.

The course will highpoint:

- Use of API 571 for work identification for static equipment and other international codes for dynamic equipment
- Sizing work requirements using API 579
- Creation of the appropriate Work structures to avoid repletion and minimize personnel engagement
- Use Gantt charts to monitor execution and keep in time
- Use of CPM PERT techniques for scheduling
- Use failure mathematics to safeguard risk on planning activities
- Assess turnaround with the appropriate efficiency testing and indicators

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand the failure mechanisms of refinery applying API 571
- ✓ Size the necessary work for assets life maximization using API 579
- ✓ Apply the correct type of turnaround for each asset
- ✓ Schedule work activities
- ✓ Control time, budget and scope during shutdown
- ✓ Assess performance of turnaround

Training Designed for:

This course is intended for Refinery Maintenance, Reliability, Engineering and Technical Support Staff including leadership and management such as Planners, Supervisors, Engineers, Reliability Engineers, Maintenance Team Leaders and Managers, and Operations Team Leaders and Managers.

Training Program:

DAY ONE:

- ❖ Pre-Test
- ❖ Introduction
- ❖ Refinery Shutdown Types & Asset Pairing
 - Definitions of shutdown, turnaround



- Material failure and degradation in refinery using API 579
- Refinery structure and unit sensitivity to failure
- Failure rate mathematics the basis of reliability center maintenance
- Shutdown and the life cycle of refineries

DAY TWO:

❖ Shutdown & Turnaround Planning

- Refinery Work Order system (WO) input for planning
- Size of work using API 579 and create Work Breakdown Structure (WBs)
- Creating the most appropriate organization structure to run the shutdown
- Spare parts and materials required for the shutdown
- Personnel internal or subcontractors required for shutdown

DAY THREE:

❖ Organizing the Shutdown Time Sequencing

- Work sequencing optimization
- Material – personnel-contractors' constraints
- Fitting the optimum number of shutdowns in the life cycle of plants
- Utilization of timing techniques (CPM-PERT)

DAY FOUR:

❖ Control of Shutdown Time, Costs & Work Quality

- Gantt charts for keeping in time
- S- curve usage for budget monitoring
- Financial reserves for uncertainties
- ISO/API standards for work handover

DAY FIVE:

❖ Shutdown Performance Analysis & Turnaround Efficiency Measurement

- Asset turnaround performance indicators
- Shutdown workload performance indicators
- Shutdown planning performance indicators
- Turnaround effectiveness and cost performance indicators
- Shutdown and turnaround data archiving and future recommendations

❖ Course Conclusion

❖ Post-Test and Evaluation

Training Requirements:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Please note that the above topics can be amended as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.





Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

