
Plant Operational Excellence: OEE, Production Loss Accounting and Reliability Training Course

5 – 9 April 2027
Rome





Plant Operational Excellence: OEE, Production Loss Accounting and Reliability Training Course

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Programme Summary

Plant operational excellence is a one-week training course for advanced, strategic-level leaders of continuous process plants, culminating in a plant loss elimination roadmap for their own site. Refineries, petrochemical complexes and chemical plants often report high availability while still losing throughput, yield and energy every shift, because losses sit in separate systems and no one owns them. The approach builds one loss account against a demonstrated rate, then ties operating limits, shift routines and reliability work to it. Mars Training Centre UK delivers this programme in plant operational excellence and production loss accounting.

The Business Case

In a continuous plant, a few hours at reduced rate or a furnace running outside its envelope can cost more than a month of maintenance savings. Leaders who see every loss in one ledger can direct operations, engineering and reliability effort to the gaps worth closing, and disciplined operating limits lower the chance that a routine deviation becomes a serious event.

- Throughput and Plant Utilisation: Rise as rate, availability and quality losses are closed in order of value.
- Yield and Energy Intensity: Improve when giveaway, flaring and excess fuel use are booked as owned losses.
- Operating Deviation Rate: Falls as integrity limits, rounds and handovers keep units inside their envelope.

Principles and Evidence Base

- Overall Equipment Effectiveness: Adapted in Sessions 1 and 2 into loss accounting for continuous units against a demonstrated rate.
- API RP 584 Integrity Operating Windows: Provides the critical, standard and informational limits used in Session 3.
- ASM Consortium Guidance on Effective Operations: Informs the shift handover and operator round routines in Session 3.
- Lean and Continuous Improvement: Shapes the loss elimination cycle and management system built in Sessions 4 and 5.



Intended Participants

- Leaders accountable for the throughput, yield and safe operation of a continuous process plant.
- Senior managers who set production targets and arbitrate between operations, engineering and maintenance priorities.
- Heads of excellence or technical functions who own loss reporting for one or several sites.
- Directors preparing an operational excellence management system for a group of plants.

The programme serves oil refining, petrochemicals, specialty chemicals, fertilisers and gas processing.

Learning Outcomes

1. Participants will be able to construct a production loss account against a demonstrated capacity.
2. Participants will be able to diagnose the largest controllable losses using loss trees and Pareto analysis.
3. Participants will be able to design integrity operating windows and escalation rules for critical variables.
4. Participants will be able to evaluate shift handover and operator round routines.
5. Participants will be able to prioritise reliability and process safety actions by their effect on the loss account.
6. Participants will be able to justify a plant loss elimination roadmap within an operational excellence management system.

Programme Structure

Day 1: Plant Operational Excellence and Capacity Baselines

What does operational excellence mean for a plant that never stops?

- Operational Excellence in Continuous Process Plants
- Nameplate, Demonstrated and Budget Capacity
- Overall Equipment Effectiveness for Continuous Units
- Plant Performance Data Sources and Quality
- Site Operating Model Self-Assessment

Day 2: Production Loss Accounting

Where do throughput, yield and energy disappear, and who owns each loss?

- Production Loss Categories and Coding Rules
- Rate, Availability and Quality Loss Calculation
- Hydrocarbon Yield, Giveaway and Flaring Losses
- Energy Intensity and Utility Loss Tracking
- Loss Trees and Pareto Prioritisation



Day 3: Operating Envelopes and Shift Discipline

How is a unit kept inside safe and profitable limits on every shift?

- API RP 584 Integrity Operating Windows
- Critical, Standard and Informational Limits
- Alarm Rationalisation and Deviation Escalation
- Structured Shift Handover and Logbooks
- Operator Rounds and Field Verification

Day 4: Reliability and Process Safety in the Loss Account

How do reliability and process safety work earn their place against other losses?

- Bad Actor Equipment and Repeat Failure Analysis
- Unplanned Shutdown and Slowdown Root Causes
- Turnaround Scope Linked to Loss Data
- Process Safety Indicators Alongside Production Losses
- Operational Excellence Management System Elements

Day 5: Applying Plant Operational Excellence

How are loss accounting, limits and routines combined into a site roadmap?

- Loss Account Build for a Participant Plant
- Integrity Window and Handover Gap Review
- Loss Elimination Portfolio and Owners
- Peer Challenge of Site Roadmaps
- Plant Loss Elimination Roadmap Presentation

Methodology

The principal method is the data workshop. Participants work with sample operating data from refining and chemical units, build loss accounts, test operating limits and rank actions, then repeat each step for a plant they lead. Short cases from petrochemical and gas processing sites show how loss data changed decisions on rate and turnaround scope.

- Suggested activity: Building a monthly loss waterfall for a distillation unit from shift logs.
- Suggested activity: Setting integrity operating windows for a furnace.
- Suggested activity: Auditing a recorded shift handover against an agreed standard.



Capstone Output

Each participant completes a plant loss elimination roadmap for their site. It contains a demonstrated capacity baseline, a coded loss account, the top losses with owners, an integrity window and handover plan, and a twelve-month action portfolio, ready for review by the site leadership team.

Frequently Asked Questions

Is plant operational excellence suitable for leaders without a Lean background?

Yes. It is designed for senior plant and operations leaders at an advanced level. It assumes experience of running or supporting a continuous process unit, but no prior Lean or reliability training.

Which standards and models underpin plant operational excellence and production loss accounting?

It rests on overall equipment effectiveness adapted for continuous units, API RP 584 Integrity Operating Windows, ASM Consortium guidance on effective operations, and Lean continuous improvement.

How is the roadmap from plant operational excellence used at work?

It gives you one agreed view of where your site loses throughput, yield and energy, with owners and actions, ready to steer the next budget and turnaround cycle.