



THE CHEMICAL ENGINEERING MAJOR

Operational Excellence Strategies in Oil, Gas and Petrochemicals

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Operational Excellence Strategies in Oil, Gas and Petrochemicals

Course Description:

This course presents the best practices from High Reliability Organizations (HROs) with respect to both excellence and safety. HRO is a term that refers to industries such as oil and gas, process, nuclear and aviation, where they possess a high degree of reliability despite their hazardous environment. It shows how organizations can learn from failures and near misses, as well as from other industries. Operational excellence will cover aspects of safety, risk, reliability, and quality management. This will include best practice at both strategic and operational levels, as well as in specific areas that relate to management skills, reliability and decision analysis, bench marking, and information systems.

Who is this Training Course for?

This course is highly recommended for all Operations, Maintenance, Reliability, Engineering and Technical Support staff. Also, this course is applicable to any person actively involved or contemplating safety, performance measurement, improvement and/or quality and reliability related activities.

This course is suitable to a wide range of professionals but will greatly benefit:

- Operations & Process Professionals
- Reliability & Safety Professionals
- Other professionals involved in process improvement

This course will feature:

- Understanding of safety, risk and continuity of operations
- Development of people management skills
- Mastering techniques that can enhance plant reliability
- How to conduct benchmarking and quality systems auditing
- Applying decision analysis approaches

What are the Goals?

By the end of this course, participants will be able to:

- Explain the benefits of acquiring best practices from HROs
- Show how activities play a part in helping their organization perform at a higher level

- Determine methods for generating and implementing effective performance metrics
- Use a process improvement methodology back at work
- Analyze critically the methodologies employed in the organization & implement improvements

Course Outline:

Day One: Safety Systems and Risk Management

- Safety first
- Learning from failures
- Analyzing near misses, incidents & accidents
- Taxonomy of theories
- Risk assessment, Choice of case studies
- Types of recommendations

Day Two: Continuity of Operations – Plant Systems Reliability

- Coping with risks
- Defining reliability and resilience
- Reliability Centered Maintenance (RCM) techniques
- Fault Tree Analysis (FTA)
- Reliability Blok Diagram (RBD)
- Practical examples and case studies

Day Three: Case Studies from High Reliability Organizations (HROs)

- Case from Aviation industry
- Case from Process industry
- Case from Oil and Gas industry
- Case from Nuclear industry
- Group work and group presentations

Day Four: The Concept of Generic Lessons & Benchmarking

- Attributes of the generic lessons
- Best practice of learning from failures from different industries
- Best practice can be learned from worst practice
- The ten generic lessons and the three underpinning factors
- What is benchmarking? History of benchmarking
- Different methods of benchmarking and how they relate to each other

Day Five: A Model of Learning and Unlearning Excellence

- Adaptive organizational learning
- Routine dynamics
- The Decision-Making Grid (DMG) model
- A framework for analyzing near-misses and failures
- High severity with low frequency versus high severity with high frequency