Risk Management in Production Operations

- Companies engaged in production activities recognize the critical need to keep such operations running effectively and efficiently.
- To do so requires full and complete knowledge of the factors that can impact the ability to manage such production operations. Implementing a systematic assessment of the risks involved and the way the risks are currently managed is widely recognised as the key to success.
- The business environment in the Middle East is developing faster than in almost any other part of the world, and as a result the risks are changing rapidly.
- This course aims to provide you with the tools and techniques to optimize your risk assessment process and measure the value delivered.

Who Should Attend?

Any executive or manager tasked with developing, implementing or facilitating risk analysis within production operations.

This 4-day course will enable participants to:

- Enhance understanding of risks and exposures faced
- Measure and quantify risks effectively
- Assess all key production risks in depth
- Understand the wide variety of risks involved
- Evaluate complex scenarios and emerging risks using HAZOP, fault tree and other analyses
- Determine appropriate risk measurement techniques
- Decide on the best method to record the risks and their relationships
- Experience risk evaluation using your own risks
Course Outline

Day 1  The need to manage production risk

- What is risk?
- Why is it necessary to understand production risks
- Why health and safety is only the tip of the risk iceberg
- Why senior management often lack a full understanding of the threats
- Definition of business risk and its nuances
- Designing risk strategies and systems to suit your organisation
- Why production risk management is receiving such publicity
- High profile failures and public embarrassments
- Explanation of the AS/NZS 4360 standard – the internationally recognised risk management standard
- Other legislation and regulation
- Understanding the organisation’s risk appetite regarding production operations
- Categories of Risk
- The Risk management framework
- *Syndicate Exercise – analysing a production disaster*

Risk Identification and Evaluation

- How to establish a formalised risk assessment process
- How to measure risk
- Establishing risk workshops
- The use of diagnostic questions and thought-provokers
- How to identify, sift and group the risks
- Measuring the consequences and the likelihood of occurrence of each risk
- *Team Exercise – Risk taking in action*
- The use of risk matrices to prioritise the risks.
- Agreeing a common risk language
- Developing a production risk policy for your organisation
- Selling the benefits to management
- Risk workshops – the do’s & don’ts
- HAZOP (Hazard Identification and analysis techniques)
- Quantified Risk Assessments (QRA)
  - Event tree analysis
  - Fault tree analysis
  - Monte Carlo Simulations
  - Bayesian Networks

Interactive Risk Workshop

- *An actual production risk workshop – with your own risks*
- *Enabling you to appreciate all elements covered in a live situation*
Day 2 - Evaluation of production risk mitigation strategies,

Assessment of Risk Mitigation

- Managing risk – the options
- Management evaluation of mitigation controls
- How to assess risk mitigation
- Identification of risk exposures
- Critical evaluation of exposures
- Dealing with the exposures (the 4 Ts)
  - Tolerate
    - Fully accept
    - Monitor
    - Cost of risk V benefits
  - Transfer
    - Outsourcing
    - Partnering
    - Insurance
  - Terminate
    - Cease activity
    - Remove item from production
    - Reduce scale
    - Divest
  - Treat
    - Enhance design
    - Better security
    - Contingency
    - Tolerance levels
    - Fall back arrangements
    - Remove unnecessary controls
- Establishment of action plans.
- Risk registers – the need to coordinate and link the output
- Flagging interdependencies – if one risk treatment is changed the other party or parties impacted need to be notified.
- Risk treatment analysis – how to determine the cost/benefits of dealing with exposures/exploiting opportunities

Interactive workshop – part 2

- Risk mitigation and dealing with the exposures in practice – a full evaluation of the production risks identified yesterday

Day 3 Managing the Risks

Each activity will be examined in depth and the associated risks and controls examined

Operations

- Operational Efficiency
- Cost Management
• Inventory Management
• Interruption to production
• Unplanned shutdown
• Production Cycles
• Design Failure
• Reliability
• Maintenance
• Interfaces with other processes
• Product quality
• Productivity
• Capacity planning
• Logistics
• Technology failure
• Obsolescence
• Lack of innovation
• Lack of investment
• Availability of alternative products
• Raw material availability
• Spares
• Research and Development
• Fire and Explosion
• Leaks
• Sabotage
• Production costs
• Forecasting

**Systems and Technology**

• Compatibility
• Contingency planning
• System Integration
• Information availability
• IT failure
• Security breach
• Lack of information integrity
• Lack of reliability
• Fraud

**People**

• Strikes
• Loss of key personnel
• Inability to attract new staff
• Skill shortages
• Communication
• Trust
• Performance and Reward
• Workload
• Stress
• Resistance
• Morale
• Staff turnover
• Decision making
Health and Safety

- Personal injury
- Accidents
- Damage
- Contamination
- Disease
- Catastrophic event
- Regulatory non-compliance
- Emissions
- Noise
- Equipment failure

Day 4 Developing an Integrated Approach

- Linking risks identified into production planning, resource allocation and budgeting
- Risk owners – how to determine such personnel and enforce ownership
- Developing risk tracking
- Scenario Planning
- Software available to use – pros and cons of different solutions will be shared
- Using the risk register as a decision skeleton
- Half yearly evaluation of key risks to ensure new risks identified and included
- Reports for Management
- Making risk management second nature
- Keeping up the momentum
- How to deal with crises
- Identifying changes in the risk profiles
- How to ensure full awareness of new hazards
- Integrating incident management
- Business Continuity planning
- Measuring the benefits

- **Exercise -Measuring the benefits**

Cascading the process

- Sharing risk assessments with partners
- Evaluating risks within these relationships
- Integrating with supply chain management
- Workshops for other management levels
- How to measure the benefits
- Risk awareness for staff
- Quality Auditing the Risk Management programme
- How to Identify and reduce excessive controls
- Coordinating the whole process
- Useful web sites and reference books