

# **Risk Management for Process and Oil and Gas Industry**

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## Why Shoud attend this training ?

• To understand the Risk concept as basic of Risk assessment and evaluation.

• To understand and implement the individual risk, societal risk and ALARP concepts.

• To understand and Implement the Risk Management concept and its different steps such as hazard identification, risk assessment, risk evaluation and risk mitigation.

• To understand and implement he qualitative Risk Analysis methods such as HAZOP, HAZID, PHA, FMEA, RBI

• To understand and implement the quantitative Risk Analysis methods such as FTA, ETA, SIL, LOPA, Bow Tie, QRA

• To understand and implement the Risk analysis methods applied to environment license.

• To understand and implement the Risk Management concept as basic of safe integrity asset performance achievement.

• To understand and implement the consequence and effect analysis

#### Who Shoud attend this training ?

Reliability Managers, Reliability Engineers, Safety Engineer, Asset Managers, Maintenance Managers, Maintenance Engineers.

#### Day 1:

- Module 1: Introduction.
- Module 2: Risk Management concept and Risk criteria.
- Module 3: ISO 31000, 2009 and Seveso Directive concepts .
- Module 4: Preliminary Hazard Analysis (PHA).
- Module 5: Preliminary Hazard Analysis (PHA) cases.
- Module 6: Hazard and Operability Analysis (HAZOP).
- Module 7: Hazard and Operability Analysis (HAZOP) cases
- Module 8: Failure Mode and Effect and Criticality Analysis (FMEA).
- Module 9: Failure Mode and Effect and Criticality Analysis (FMEA) cases.

Training Outline:

## Day 2:

- Module 10: Risk Based Inspection (RBI).
- Module 10: Risk Based Inspection (RBI) cases.
- Module 12: Safety Integrity Level Analysis (SIL).
- Module 13: Safety Integrity Level Analysis (SIL) cases.
- Module 14: Fault Tree Analysis (FTA), Event Tree Analysis (ETA), Layer of Protection Analysis (LOPA) & BTA.
- Module 15: Fault Tree Analysis (FTA), Event Tree Analysis (ETA), Layer of Protection Analysis (LOPA) & BTA cases.
- Module 16: Consequence and effec Analysis.
- Module 17: Consequence and effect Analysis Cases.



# Trainer : Dr Eduardo Calixto, CRP, CFSE.,

He's Reliability and Safety Engineer Expert with over 18years experiences in Oil & Gas, Railway, Aerospace and Mining Industries. He has Doctoral Degree in Energy and Environmental, Master in safety System Management, Bachelor in Industrial Engineering. Author of the best seller Book Gas and Oil Reliability Engineering: Modeling and Analysis (material content of this training).







