

# Risk Management:

*hazard identification & risk assessment, evaluation and mitigation.*

## WHY SHOULD ATTEND THIS TRAINING:

- To understand the Risk concept as basic of Risk assessment and evaluation.
- To understand the Risk Management concept and its different steps such as hazard identification, risk assessment, risk evaluation and risk mitigation.
- To understand the qualitative Risk Analysis methods such as HAZOP, HAZID, PHA, FMEA, RBI
- To understand the quantitative Risk Analysis methods such as FTA, ETA, SIL, LOPA, Bow Tie, QRA
- To understand the Risk analysis methods applied to environment licence.
- To understand the emergency response concept.
- To understand the Risk Management concept as basic of safe integrity asset performance achievement.
- To understand the human factor integrated to Risk analysis.

## WHO SHOULD ATTEND THIS TRAINING:

The following selected participants should attend this course:

- Asset Integrity Managers, Maintenance Managers, Production Managers, HSE Managers.
- Safety Engineers, Reliability Engineer/Maintenance Engineer/ Supervisor
- Safety professional
- Design Engineer/Production Engineer
- Everybody who wants to broaden knowledge and interest in this topics

## TRAINING MATERIAL OUTLINE

### Risk Management (2 h)

- Risk Management concepts
- Risk Concept
- Emergency response

### Qualitative Risk Analysis (6 h)

- Hazard and operability analysis (HAZOP)
- Hazard identification (HAZID)
- Preliminary Hazard Analysis (PHA)
- What if
- Failure Mode Analysis (FMEA)
- Risk Based Inspection (RBI)
- Emergency response

### Quantitative Risk Analysis (6 h)

- Fault Tree Analysis (FTA)
- Event Tree Analysis (ETA)
- Layer of protection Analysis (LOPA)
- Safety Integrity Level analysis (SIL)
- Bow Tie analysis (BTA)
- Quantitative Risk Analysis (QRA)

### Risk Management application (2 h)

- Risk Management model: refinery case study
- Risk Management as based for Asset Integrity: Subsea case study



**Dr Eduardo Calixto**

Doctorate in Energy and Environment focus on risk management, Master Degree in Safety Management, Bachelor in Industrial Engineer and a wide range of reliability, risk analysis and safety techniques across a range of industries like Oil and Gas (including onshore, offshore, subsea, utilities and drill facilities), Metallurgic, Aerospace & Defense and Railway Industry. Dr. Eduardo Calixto is Certified Reliability Professional (CRP) by Reliasoft Corporation US and Certified Functional Safety Expert (CFSE) by Exida US.

Key experiences include 17 years dedicating to reliability engineer studies and Risk management assessment. A total of 12 years dedicating to Oil and gas working 8 years by Petrobras S.A in Brazil , 2 year by Reliasoft Corporation as Reliability Consultant mostly dedicated to Kuwait Oil Company projects and 2 years by Genesis Oil and Gas consultant Company in London, as Principal Reliability Engineer, which support different major Oil and Gas company projects all over the world. In addition, Dr. Eduardo had 2 years dedicated to Metallurgic Industry by Vale in Brazil, 1 year dedicated to Aerospace project in Germany and 2 year dedicated to the transportation industry in projects in Germany, Austria and UK by Bombardier Transportation and Molinari Railway as RAMS expert.

