

# Human Reliability Analysis:

*How to avoid the impact of human factor  
in system performance and safety*

## WHY SHOULD ATTEND THIS TRAINING:

- To understand the human reliability concepts.
- To understand the human performance factors concept.
- To understand and apply different human reliability analysis methods.
- To understand human error impact caused by operation or maintenance on asset performance
- To understand human error impact on safety
- To understand human factor integrated to Risk analysis methods such as FMEA, PHA, FTA and Bow tie

## WHO SHOULD ATTEND THIS TRAINING:

The following selected participants should attend this course:

- Asset Managers, Maintenance Managers, Production Managers, HSE Managers, Project managers.
- Safety Engineers, Reliability Engineer/Maintenance Engineer/ Supervisor, Risk management specialist
- Rotating Engineer/ Static Engineer/Supervisor
- Design Engineer/Production Engineer/
- Everybody who wants to broaden knowledge and interest in this topics

## TRAINING MATERIAL OUTLINE

### Human reliability concepts (2 h)

- Human reliability introduction
- Human error concept
- Human reliability performance factors
- Human Error Probability
- Human reliability applied to risk analysis
- Human reliability applied to reliability analysis

### Human reliability analysis methods (10h)

- Technique for Human Error Rate Prediction (THERP)
- Operator Action Tree (OAT)
- Accident Sequence Evaluation Program (ASEP)
- Human Error Assessment Reduction Technique (HEART)
- Sociotechnical Analysis of Human Reliability (STAH-R)
- Success likelihood index methodology implemented Through multi-attribute utility decomposition (SLIM-MAUD)
- Systematic Human Error Reduction And Prediction Approach (SHERPA)
- SPAR-H (Standardized Plant Risk and Human Reliability analysis)
- Bayesian Network

### Human reliability application (4 h)

- Human reliability analysis applications case studies in group



**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.

