

“Capacity Building and Strengthening Institutional Arrangement”

Workshop: Quantitative risk assessment of oil and gas plants

Working Group n°. 3

**“Define quantitative risk assessment for a oil
and gas industrial unit ”**

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Objective

Taking into account a specific oil and gas plant of your knowledge, as an example, carry out a major hazard quantitative risk assessment in a oil/gas industrial unit.

Activities

1st phase: Establish criteria to define an incident as a major hazard (i.e. max incident frequency and minimal consequence OUTSIDE the plant limits)

- Perform a preliminary analysis of a chosen plant unit (critical points as process equipment, storage of dangerous substances, control loops, piping fittings, etc.)
- Incident(s) identification by a proper methodology (most normally utilised is the HAZOP – HAZard OPerability analysis).
- For each identified incident, calculation of frequency (outcomes/year) by utilising historical data-bases or/and fault tree analysis
- For each identified incident, calculation of distance for minimal established consequence outside the plant limits (if any) and related probability
- Risk calculation for each identified major hazard (individual or social (frequency vs consequence probability))

2nd phase: Define a general draft for a safety report compilation
Final presentation and discussion about Working Group activities.