Standard Approach to Risk Management for Offshore Operations

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Offshore Operations Involve Many Operational Risks

- Drilling
- Logistics
- Construction
- Aviation
- Production
- Personnel Safety
- Well Integrity
- Facility Integrity
- Security

Taking on the world’s toughest energy challenges.
“the road to safety excellence must be built on an integrated comprehensive safety management system – operating within a supportive culture – and driven by strong leadership.”

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Management System Relies on Multiple “Barriers” to Manage Risks

OIMS

Initiating Events

Equipment

Processes

People

Design Standards
- Equipment Strategies
- Facilities Surveillance
- Facility Integrity
- Well Integrity

Operating Procedures
- Work Management
- Hazard ID (HAZOP/Security)
- Change Management

Risk Assessment & Risk Management

Leadership
- Communication
- Personal Accountability
- Competency and Training
- Enabling People to Act

Undesired Consequences
Risk Assessment & Management System

Purpose:
• Facilitate the identification, evaluation, understanding, and management of risks in a structured and prudent manner.

Risk Management System Objectives:
• Hazards are discovered, a key step
• Risk assessments are performed by qualified, experienced personnel.
• Common process used to assess risk:
  • For all risks – process safety, security, aviation, health, etc.
  • Consistent around the world.
• Best options to eliminate or mitigate the risk are determined.
• Appropriate level of management decides on the timely course of action.
• Action plan is developed and tracked to closure.
• Risk and associated action plan is communicated to those affected.
• Risk is eliminated or reduced to an acceptable level.
• Learnings are shared across the organization.
Assessing Operational Risk

• A defined, structured process
  – Based on global standards
  – Same for offshore & onshore

• Assessment chartered by a “line owner”
  – Qualified team leader
  – Multi-disciplined team – operations, engineering, subject matter experts

• Hazard identification
  – Planned – HAZOP, HAZID, Checklists
  – Triggered – Facility / Well surveillance, inspection results, observations

• Risk Screening
  • Determine if hazard is potentially significant

• Scenario Based Risk Assessments useful for most decisions
  – Qualitative process
  – Event trees describe the scenario
  – Probabilities based on experience and data
  – Risk assessed on matrix

• Transparent process
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*Risk Assessment Matrix from U.S. Army Field Manual (FM 5-19)
Goal: Risks Reduced to an Acceptable Level

• Risk Assessments provides information for decision-making to prevent or mitigate the undesirable consequences of potential incidents.
  – Line management makes the decision
  – Higher the risk – the “higher-up” the decision maker
  – Priority on higher risks

• Decision maker determines acceptable risk level – based on
  – Company and industry standards
  – Effectiveness and reliability of multiple barriers
  – Judgment