Safety Culture in the Offshore Oil and Gas Industry - A Shell View

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VP Health, Safety and Environment (HSE) - Deepwater
Shell’s Safety Culture starts with our HSSE Control Framework ...

**Aim**

- The Shell Group’s HSSE&SP Control Framework provides a source for the Group’s expectations covering health, safety, security, the environment and social performance.

**Approach**

- The Shell Group’s HSSE & SP Control Framework
  - Each Shell Business is required to implement the HSSE&SP Control Framework
  - Applies to contractors/subcontractors also
  - Includes Mandatory requirements
  - Also includes guidance/reference information
Our Control Framework has 35 Manuals on HSE related activities...

HSSE Management System Manual
- Competence manual section and specification
- Emergency Response
- Incident Investigation and Learning
- Impact Assessment
- Joint Venture HSSE Requirements
- Leadership and Commitment
- Management of Change
- Management Review
- Managing Risk
- Organisation, Responsibilities and Resources
- Performance Monitoring and Reporting manual section and specification
- Permit to Work
- Planning and Procedures
- Policy and Objectives
- Risk Assessment Matrix

Personal Safety Manual
- Confined Space Work
- Electrical Safety
- Hotwork
- Ionising Radiation
- Working at Height

Transport Manual
- Driver Safety and Professional Driver Safety

Environment Manual
- Ozone Depleting Substances
- Waste

Process Safety

Health Manual
- Asbestos
- Exposure to Acute Toxic Substances
- Fitness to Work
- Food and Drinking Water Safety
- Health Risk Assessment
- Hearing Conservation
- Legionella
- Malaria

Contractor HSSE Manual

Security Manual
Our Safety Culture is based on our three Golden Rules …

“Our House”

Golden Rules

Comply

Intervene

Respect

Goal Zero is a Mindset
An Example of our HEROS Program for Stop Work Authority....

- HEROS formalizes EPW Wells “Stop Work” expectations by clearly establishing and communicating:
  - Stop Work Intervention Policy
  - Roles and Responsibilities
  - Intervention Protocols
  - Reporting
  - Follow-up
  - Recognition
  - Training

Helping
Every
Rig
Operate
Safely
We grow our Safety Culture with a mindset of care ...

Safety is a Value

Goal Zero is a Mindset – No harm to people. No leaks.

Chronic Unease is a product of our behaviours.

Personal Safety

Process Safety

“Our House”

Comply

Intervene

Respect

Goal Zero
Where we focus our Safety Leadership attention ...

- Sr. Leadership F2F engagements with office and field staff to demonstrate leadership values.
- Develop an effective methodology to share appropriate incident learnings to prevent repeat incidents.
- Better utilize existing HSE metrics to proactively understand key exposure areas.
- Sr level contractor engagements to ensure ownership and commitment to Goal Zero mindset.
We consider a good training program essential to a strong Safety Culture...

Shell Robert & Kenai Training Centers

- HUET Training
- Super Safety, Life Saving Rules
- Fire Fighting, Crane Operations
- Defensive Driving
- Deepwater Drilling/Completion Operations
- Open Water Rescue
- Major Emergency Management
- Behavioral Based Safety Management (BBSM)
- Cultural Awareness
As is learning from our and others past incidents...

- We encourage the reporting of all incidents and failures.

- We recognize individuals who intervene and stop potentially unsafe work.

- We proactively share learnings and encourage local self assessment.

- We look for the causal relationship between culture and performance.
A key ingredient of our Safety Culture is a robust Assurance Process ... 

- Should have multiple levels of assurance;
  - Corporate level – audits against company stds/policies, reports to Corporate Business Assurance Committee (BAC)
  - Business level - audits against local stds/policies, including regulatory reqts
  - Local level - self-assessment against local stds/work procedures
  - External – third party audits: Process Safety, SEMS, Asset Integrity Assurance

Basic Reqs for all Audit Processes

- **Familiarisation**
  - Terms of Reference – Standards & Risk areas
  - Group HSSE Assurance Methodology

- **Review & Testing**
  - Study Documentation
  - Interviews
  - Site visit
  - Test findings

- **Reporting**
  - Drafting Audit working papers
  - Editing
  - Findings finalised
  - Agree findings
  - Present Findings
In summary, what are attributes of a great Safety Culture...

- Safety is part of everything we do
- Consistent leadership behaviours/engagement
- Great teams/teamwork
- Open and honest communication
- Common goals
- We are professional and learning is valued
- Standardized practices/procedures
- Consistent rules which apply to all parties
- Training and competency assurance
- Standardized metrics
- Rigorous assurance processes

We strive to create an environment where these attributes are used each and every day.
Back Up Slides
Safety measures in place for offshore drilling...

- **Control & Barriers**
  - Keep within Control Limits
  - Reduce Likelihood
    - Tech. Standards & Procedures
    - Equipment testing, certification
    - BOP, etc.
    - Competent staff
    - Rig Safety Case
    - Robust multiple barriers

- **Incident**

- **Response & Recovery**
  - Mitigate Consequences
  - Plan for Recovery
  - Re-Instate
    - Well Control Incident Plan
    - Oil Spill Response Plan
    - Oil Spill Containment System (JIP)
    - Technical Expertise
Safety measures in place for offshore drilling ...

- Multi-layered well control minimizes risk
- All existing Shell deepwater wells can be capped
- Shell-owned capping stack, covers Shell’s global portfolio of deepwater wells
- Alaska-specific cap & containment system

- Subsea Well Response Project – Operator; enhances industry’s ability to respond to major subsea well control incidents globally.
- Marine Well Containment Company - founding and permanent Board Member; enhancing cap & containment capability for the Gulf of Mexico.
Safety measures in place for offshore drilling ...

Single Ram Capping Stack
- Able to cap a well up to 10,000 ft water depth, dual barrier – ram and cap

Hydraulic Accumulator
- Accompanied by a subsea hydraulic accumulator skid that is used to actuate all hydraulic requirements
**Our Life-Saving Rules show our commitment to people ...**

<table>
<thead>
<tr>
<th>Rule Description</th>
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<tbody>
<tr>
<td>Work with a valid work permit when required</td>
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<td>Protect yourself against a fall when working at height</td>
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<tr>
<td>Conduct gas tests when required</td>
<td>![gasicon]</td>
<td>Obtain authorization before entering a confined space</td>
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<tr>
<td>Verify isolation before work begins and use the specified life protecting equipment</td>
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<td>Do not walk under a suspended load</td>
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<td>Do not smoke outside designated smoking areas</td>
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<td>Do not smoke outside designated smoking areas</td>
<td>![smokeicon]</td>
<td>No alcohol or drugs while working or driving</td>
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<td>While driving, do not use your phone and do not exceed speed limits</td>
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<td>While driving, do not use your phone and do not exceed speed limits</td>
<td>![driveicon]</td>
<td>Wear your seat belt</td>
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<td>![seatbelticon]</td>
<td>Follow prescribed Journey Management Plan</td>
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As do our Process Safety Basic Requirements (PSBRs) ...

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<td>ESD VALVES ON PLATFORM RISERS</td>
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<td>3.</td>
<td>TEMPORARY REFUGES</td>
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<td>4.</td>
<td>PERMIT TO WORK</td>
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<td>AVOID LIQUID RELEASE TO ATMOSPHERE</td>
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<td>7.</td>
<td>AVOID TANK OVERFILL FOLLOWED BY VAPOR CLOUD RELEASE</td>
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<td>8.</td>
<td>AVOID BRITTLE FRACTURE OF METALLIC MTLS</td>
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<td>9.</td>
<td>ALARM MANAGEMENT</td>
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<td>10.</td>
<td>SOUR GAS (H2S)</td>
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<td>11.</td>
<td>DEEPWATER WELL DESIGN AND CONSTRUCTION</td>
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As are measurable Safety Metrics ...

- Management should review asset integrity and process safety performance metrics on a regular basis
  - Sr/Executive Management – Quarterly
  - Operations/Line Management – Weekly/Monthly
  - Field Supervision – Daily/Weekly

- Performance metrics should contain a good mix of leading and lagging indicators
  - Leading: alarm rates, PM/CM schedule compliance, overdue MoCs, Near Misses
  - Lagging: HC spills, OSHA Recordables, fires
And we have verified our HSE MS equals all the reqts of SEMS ...

**Shell's HSE MS – 8 Elements**

**Safety & Environmental Management System (SEMS) - 13 Elements**

- General Management Program Principles
- Safety and Environmental Information
- Hazards Analysis
- Management of Change
- Operating Procedures
- Safe Work Practices
- Training
- Quality Assurance/Mechanical Integrity
- Pre-Startup Review
- Emergency Response and Control
- Incident Investigation
- SEMS Element Audit
- Documentation and Recordkeeping