Process Safety and Performance Standards

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• Introduction
• Safety Cases and Process Safety
• Performance Standards
• Inspection findings
• Lessons for industry
**Background and history**

- 2008: Triennial review of NOPSA operational effectiveness *(Mar 2008)*
- 2009: Productivity Commission review of upstream sector regulatory burden *(Apr 2009)*
  - Offshore Petroleum Safety Regulation Inquiry and report *(Jun 2009)*
- 2010: Montara Commission of Inquiry and report *(Jun 2010)*
  - Regulation of well integrity commenced *(Apr 2011)*
  - Second triennial review of NOPSA operational effectiveness *(Nov 2011)*
- 2012: National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) established *(Jan 2012)*
- 2013: Strategic Assessment under the EPBC Act
- 2014: Financial Assurance
Vision and Mission

Vision
A safe and environmentally responsible Australian offshore petroleum and greenhouse gas storage industries.

Mission
To independently and professionally regulate offshore safety, well integrity and environmental management.
Regulatory functions

- Monitor and Enforce
- Investigate
- Complyance

- Promote
- Advise
- Improvement

- Co-operate
- Report
- Governance
Jurisdiction

NOPSEMA

Relevant State/NT Minister or
NOPSEMA where functions conferred
Legislation administered by NOPSEMA

Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006*

Schedule 3 – OHS

Safety Regulations
Commonwealth *Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009*

Wells Regulations
Part 5 of the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage (Resources Management and Administration) Regulations 2011*

Environment Regulations
Commonwealth *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*

Commonwealth Attorney-General’s website: comlaw.gov.au
• A ‘general duties’ regime
• Performance-based, but with prescriptive elements
• An independent regulator (NOPSEMA)
• A facility operator’s safety case is used as a ‘permissioning document’
  – must be accepted by NOPSEMA before commencing activities.
Regulatory approach

• Assessment – *permission to operate*
• Inspection – *monitor compliance*
• Investigation – *identify non-compliance*
• Enforcement – *expedite return to compliance*
Safety Case

Facility Description
- Activities and Operating Parameters
- General Description (the layout of the facility)
- Machinery and Equipment

Formal Safety Assessment Description
- HAZID

Safety Management System Description
- Scope (Activities)
- Comprehensive and Integrated

Description of Technical Controls including:
- Safety Measures
- Emergencies

Description of Procedural Controls including:
- OHS Risk Management
- Maintenance
- Communication
- Safety Measures
- Emergencies

Monitor, Audit and Review
- Implementation and Improvement of the SMS

Implementation and Functional?

Corrective & Preventative action

Implemented & Functional?
• An event connected with a facility, including a natural event, having the potential to cause multiple fatalities of persons at or near the facility.

Source: OPGGS(S) Regulation 1
In the Australian Offshore Petroleum legislation a *Performance Standard* means a standard, established by the operator, of the performance required of a system, item of equipment, person or procedure which is used as a basis for managing the risk of a major accident event.

Source: *OPGGS(S) Regulation 1*
Major accident event focus

**Facility Description**
- Activities and Operating Parameters
- General Description (the layout of the facility)
- Machinery and Equipment

**Formal Safety Assessment Description**
- HAZID (Identifies all hazards having the potential to cause a MAE)
- Risk Assessment (Likelihood and consequence of each potential MAE)
- Emergencies (Evacuation, Escape and Rescue Analysis, Fire and Explosion Analysis)
- Identification of Control Measures (Necessary to reduce the level of risk to ALARP)

**Safety Management System Description**
- Scope (Activities)
- Comprehensive and Integrated
- Description of Procedural Controls including:
  - OHS Risk Management
  - Maintenance
  - Communication
  - Safety Measures
  - Emergencies
- Performance Standards (specify the performance standards that apply)

**Monitor, Audit and Review**
- Implemented & Functional?
- Implementation and Improvement of the SMS

**Implementation and Improvement of the SMS**
- Corrective & Preventative action
- Implemented & Functional?
The interface

Formal Safety Assessment
Establish MAE Control Measures

Performance Standards

Ongoing Operations & Risk Management
Sustain Integrity of MAE Control Measures
Performance standards lifecycle

Formal Safety Assessment
- Establish MAE Control Measures
- Identify hazards with MAE potential
- Identify OHS hazards

Ongoing Operations and Risk Management
- Maintain and Monitor
- Manage Change
- Verify performance
- Inspect and Test Audit and Review
- Investigate performance deviations

Define
- Performance Standards

Change of circumstances?
- Yes
- No

Start Cycle

Risk Assessment
- Emergencies (EERA & FERA)
• Are the control measures implemented?

• Are the control measures functional?

• Are the control measures maintained?

• Are the control measures audited?

• Is the workforce competent?
Findings – poor definitions

Formal Safety Assessment
- Risk Assessment
- Identify hazards with MAE potential
- Establish MAE Control Measures
- Identify OHS hazards

Ongoing Operations and Risk Management
- Define
- Verify compliance
- Performance Standards
- Inspect and Test Audit and Review
- Investigate performance deviations
- Manage Change
- Maintain and Monitor
- Change of circumstances?

Start Cycle
Findings – missing linkage

Formal Safety Assessment
- Establish MAE Control Measures
  - Identify hazards with MAE potential
  - Identify OHS hazards

Define
- Performance Standards
  - Identify Control Measures

Ongoing Operations and Risk Management
- Sustain Integrity of MAE Control Measures
  - Inspect and Test Audit and Review
  - Investigate performance deviations
  - Manage Change
  - Maintain and Monitor

Yes
- Change of circumstances?
No

Start Cycle
Findings – failure to follow-up

Formal Safety Assessment

- Risk Assessment
- Establish MAE Control Measures
- Identify hazards with MAE potential
- Identify OHS hazards

Ongoing Operations and Risk Management

- Define
- Verify compliance
- Performance Standards
- Inspect and Test Audit and Review
- Investigate performance deviations
- Manage Change
- Maintain and Monitor

Yes

Change of circumstances?

Start Cycle

No
Findings – poor change management

Formal Safety Assessment

1. Emergencies (EERA & FERA)
2. Risk Assessment
3. Establish MAE Control Measures
4. Identify hazards with MAE potential
5. Identify OHS hazards

Ongoing Operations and Risk Management

1. Inspect and Test Audit and Review
2. Investigate performance deviations
3. Manage Change
4. Maintain and Monitor
5. Sustain Integrity of MAE Control Measures
6. Define
7. Verify compliance
8. Performance Standards
9. Change of circumstances?

Start Cycle
Findings – lacking personnel knowledge
• Visibility of MAE Controls

• Well defined, SMART Performance Standards

• Facility Personnel knowledge and understanding
Thank you