Well Integrity Regulation

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• NOPSEMA
• Regulatory Framework
• Well Operations Management Plan
  - Safety case for Wells
• A ‘General Duties’ regime for offshore petroleum & greenhouse gas storage operations
• Performance-based, but with some prescriptive elements
• A duty holder’s management plan, accepted by NOPSEMA is a legally binding permissioning document:
  – Well Operations Management Plan
  – Safety case
  – Environment plan
Legislation administered by NOPSEMA

Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006*

Schedule 3 – OHS law

Safety regulations

Wells via resource mgmt regulations

Environment regulations
Assessment
- Independent, sampled evaluation of a duty-holder’s submission against the regulations
- Challenge duty-holders: ALARP demonstration - “Have you done enough?”

Inspection
- Independent, sampled inspection of the petroleum activity against the accepted permissioning document and regulations
- Challenge duty-holders: “Are you doing what you said you would do?”

Investigation
- Independent investigation to determine what went wrong and determine whether enforcement/prosecution is required
- Challenge duty-holders: “What wasn’t done? What can we learn?”

Enforcement
- Take action within powers under the Act and regulations to secure compliance
• NOPSEMA has General, Remedial and Significant Incident direction-giving powers

• Significant Incident Directions enable NOPSEMA to direct a titleholder, in the event of a significant offshore petroleum incident that has caused or might cause an escape of petroleum, to:
  – take action (prevent, eliminate, mitigate, manage or remediate) or not to take an action, and
  – may be unconditional or subject to conditions
  – the direction may apply either within or outside the titleholder’s title area
• Performance-based regime that requires the titleholder to control well integrity hazards or risks where integrity means:
  – under control in accordance with an accepted WOMP
  – able to contain reservoir fluids
  – subject only to risks that have been reduced to a level that is as low as reasonably practicable

• Risks managed in accordance with sound engineering principles, standards, specifications and good oil field practice
• NOPSEMA replaced the State Regulator as the regulator for wells in Commonwealth waters (April 2011)

• NOPSEMA decides:
  – WOMP acceptance/rejection
  – individual well activities approval / rejection

• Integrity definition includes that the well is subject only to risks have been reduced to a level that is as low as reasonably practicable
• **WOMP is a permissioning document**
  – Owned by titleholder;
  – Legally binding commitment by titleholder
  – Regulator role is assessment (acceptance/rejection decision) and subsequent compliance monitoring through inspection.

• **WOMP must:**
  – be appropriate to the wells and well activities contemplated
  – be a stand-alone document that is sufficient to meet the contents & level of detail requirements of the regulations without need to refer to other documents external to the WOMP.
WOMP - Core Concepts

• WOMP to provide for:
  – Identification of hazards and assessment of risks;
  – Implementation of measures to eliminate the hazards or otherwise control the risks to ALARP;
  – A comprehensive and integrated system for management of the hazards and risks; and
  – Monitoring, audit and review
• Adopted control measures for any particular identified risk must be shown to collectively eliminate, or reduce that risk to a level that is as low as is reasonably practicable.
  – by reasoned and supported arguments, that there are no other practical measures that could reasonably be taken to reduce risks further.

• The ALARP argument will be underpinned by the adoption of appropriate performance standards, sound engineering principles, specifications, good oilfield practice and the implementation of a management system which supports and maintains them.
• Be appropriate

• Explain philosophy and criteria; company policies and processes that are the basis of the design, construction operation and management of the wells

• Identify risks & controls - demonstrate well integrity risks are reduced to ALARP

• Include performance objectives, standards & associated measurement criteria

• Explain how a well integrity hazard or increase in risk will be managed => contingency planning.
Changing Circumstances - Blind operations

• Where those conducting operations are unaware of the actual situations they are in
  – Tendency to interpret events in context of previous experience despite evidence to the contrary (Mind-set Factor)
  – Management failure to ensure that members of the workforce have the ability to identify, diagnose and respond to abnormal events (Competence Factor)

• One of the final barrier failures in the unfolding of large scale accidents
Mind-set

- Organise in such a way that you are better able to notice the unexpected in the making and halt its development

- Use the WOMP
  - Clear performance standards & measurement criteria
  - Clear MOC triggers & risk assessment methodology
Example - Abandonment

- Reduce HS&E risk to ALARP:
  - **Technical Objectives:** Isolation & Separation of permeable zones from surface and each other.
  - **Pre-requisites:** Identification of hydrocarbon / aquifer formations
  - **Definition of Barrier Elements:** Nature, Design & Construction
  - **Verification Criteria:** Measurable & Definitive
  - **ALARP basis:** Engineering principles, industry standards, good practice.
Thank You