Three Party Integration in the field: What can and does happen

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NOPSEMA World of Risk

231 Notifications 93 requiring investigation
Tight hole - communications
Gas lift annular problems
Wells awaiting P&A

119 Notifications 36 requiring investigation

1803 Notifications 831 requiring investigation

Well Integrity Risk
Outside PP & FG Boundaries
At PP & FG Boundaries
BOP closing pressure calculations
BOP Pressure test

Environmental Risk
Injury while working in the derrick
Third party equipment certification

Safety Risk
Use of flow back equipment
Who controls the risk now?

Outside PP & FG Boundaries
At PP & FG Boundaries
BOP closing pressure calculations

Gas lift annular problems
Tight hole - communications
Use of flow back equipment

Injury while working in derrick

Third party equipment Certification
BOP Pressure test

Oil Company
Drilling Contractor
Service Company
Who is responsible for the consequences?

Outside PP & FG Boundaries

At PP & FG Boundaries

BOP closing pressure calculations

Injury while working in derrick

Oil Company

Drilling Contractor

Service Company

Gas lift annular problems

Tight hole - communications

Use of flow back equipment

Third party equipment certification

BOP Pressure test

ICoTA (A789990)
Integrated management reducing risk

- Outside PP & FG Boundaries
- At PP & FG Boundaries
- BOP closing pressure calculations
- Injury while working in derrick

Opportunity for increased assurance from each other

- Gas lift annular problems
- Tight hole - communications
- Use of flow back equipment
- Third party equipment certification
- BOP Pressure test
Technical Partners.....

“Given the events of the past three years, drilling contractors should begin to act more like aircraft pilots than limousine drivers. Operators in turn should begin to treat contractors more like technical partners concerning well design, construction, risk management and management of change”

Integrating barriers, bridging documents and SEMs using the Bow-Tie system. Scott Randall et al OTC 23692 May 2012
Focus on left of Bow Ties - Example
Focus on left of Bow Ties - Example

Human & Organisation
- Well control practices & standards
- Barrier management
- Risk assessment & MOC
- Audit & Inspection

Operational Active
- Cemented casing
- Overbalanced well fluid

Present Status?
- Human & Organisation
  - Well kill response
  - Blow out
- Operational Active
  - BOP

Opportunity for increased integrated risk management and assurance
IRF - Well Control Problem Statement

Problem statement:
Greater emphasis is needed on the left-hand side of the “Loss of Well Control” bow tie, particularly on pore pressure & fracture gradient prediction (PPFG) and its application to well design and construction.

Expected outcomes:
- Systematic approach to PPFG prediction
- Systematic workflows for translating PPFG data into well design
- Systematic implementation of existing guidance on well operating envelopes

Deliverables/KPIs:
- Publish PPFG industry guidance – target by Q1, 2022
- Joint IRF/IOGP/IADC implementation
- Reduced risk of well control incidents
Questions?
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