NOPSEMA | Australia's offshore energy regulator

Third Party Integration in the field. What can and does happen

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DrillSafe

3 June 2020

A779569

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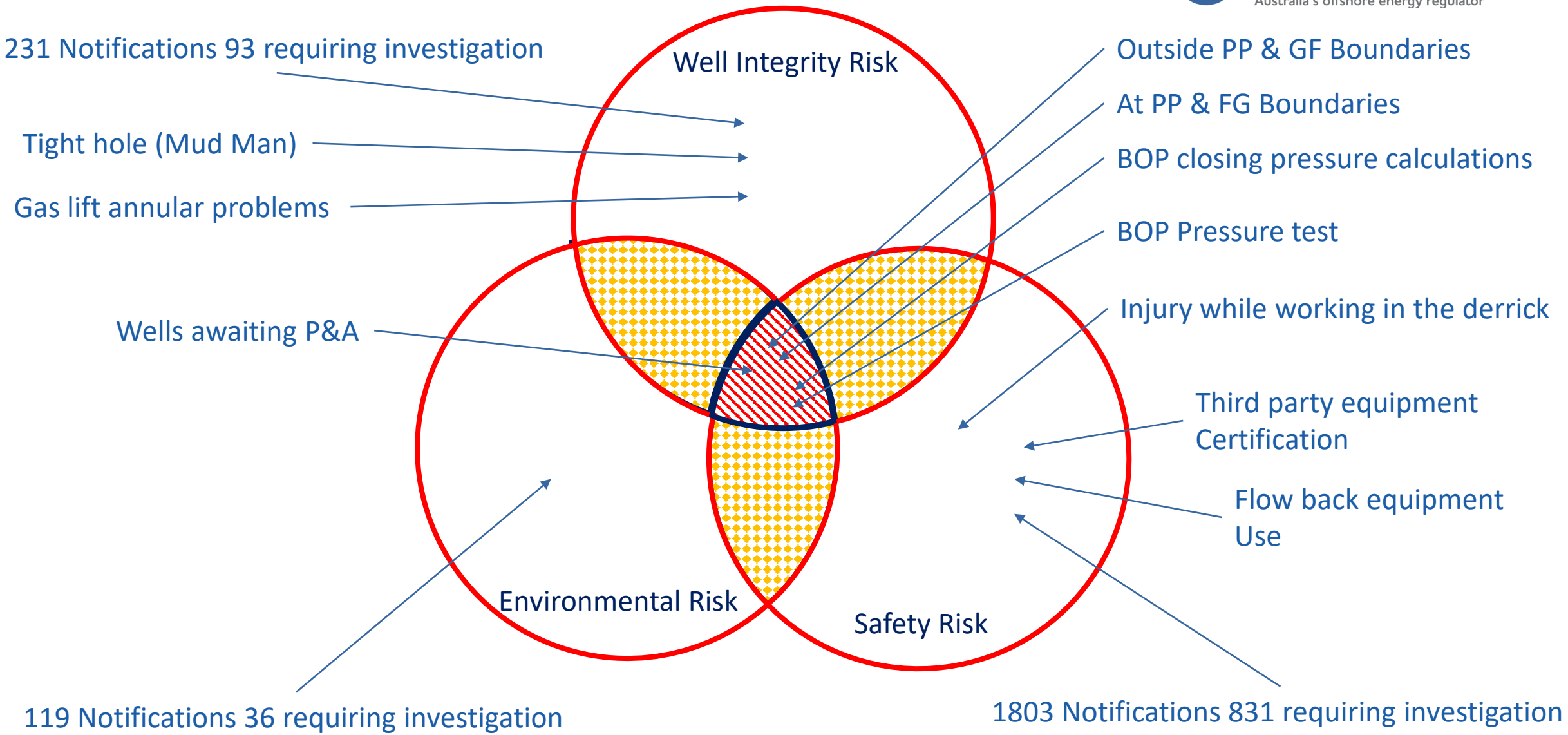
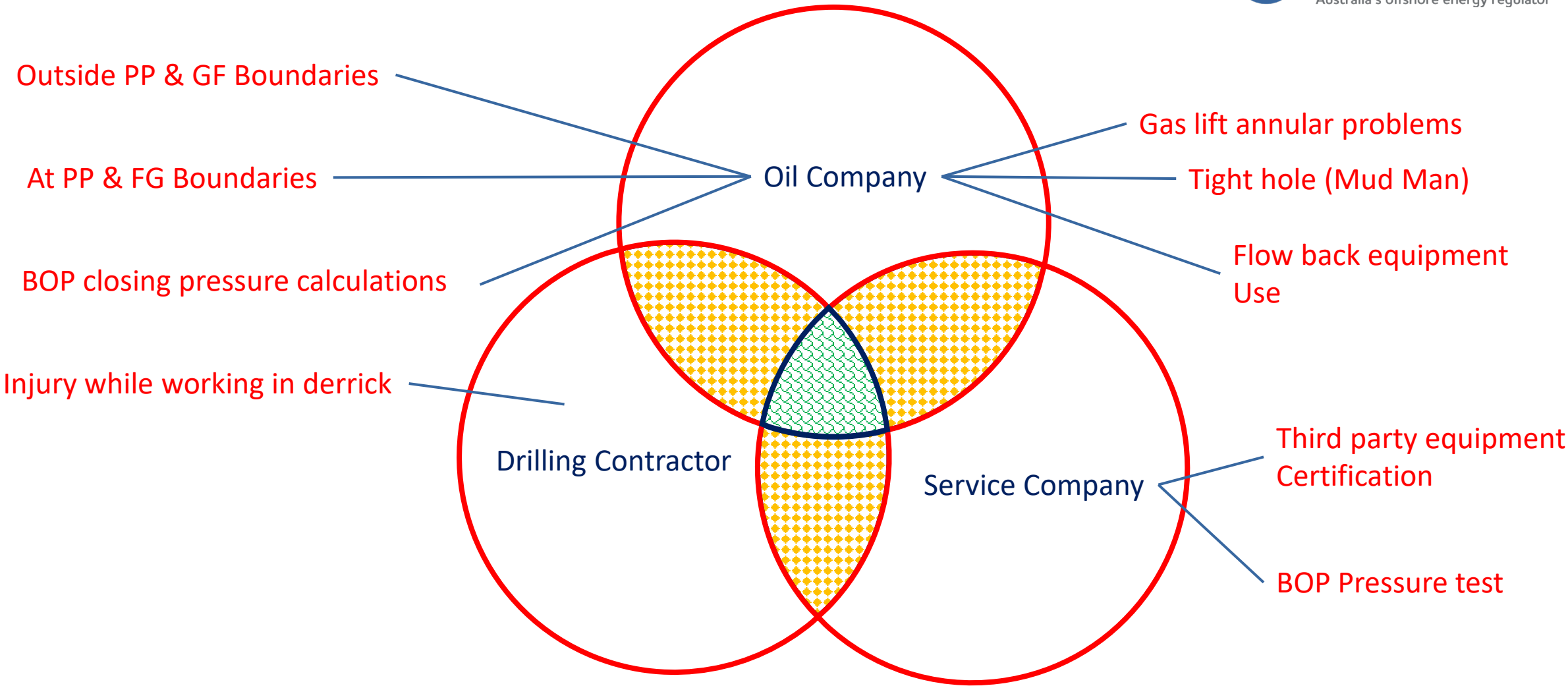
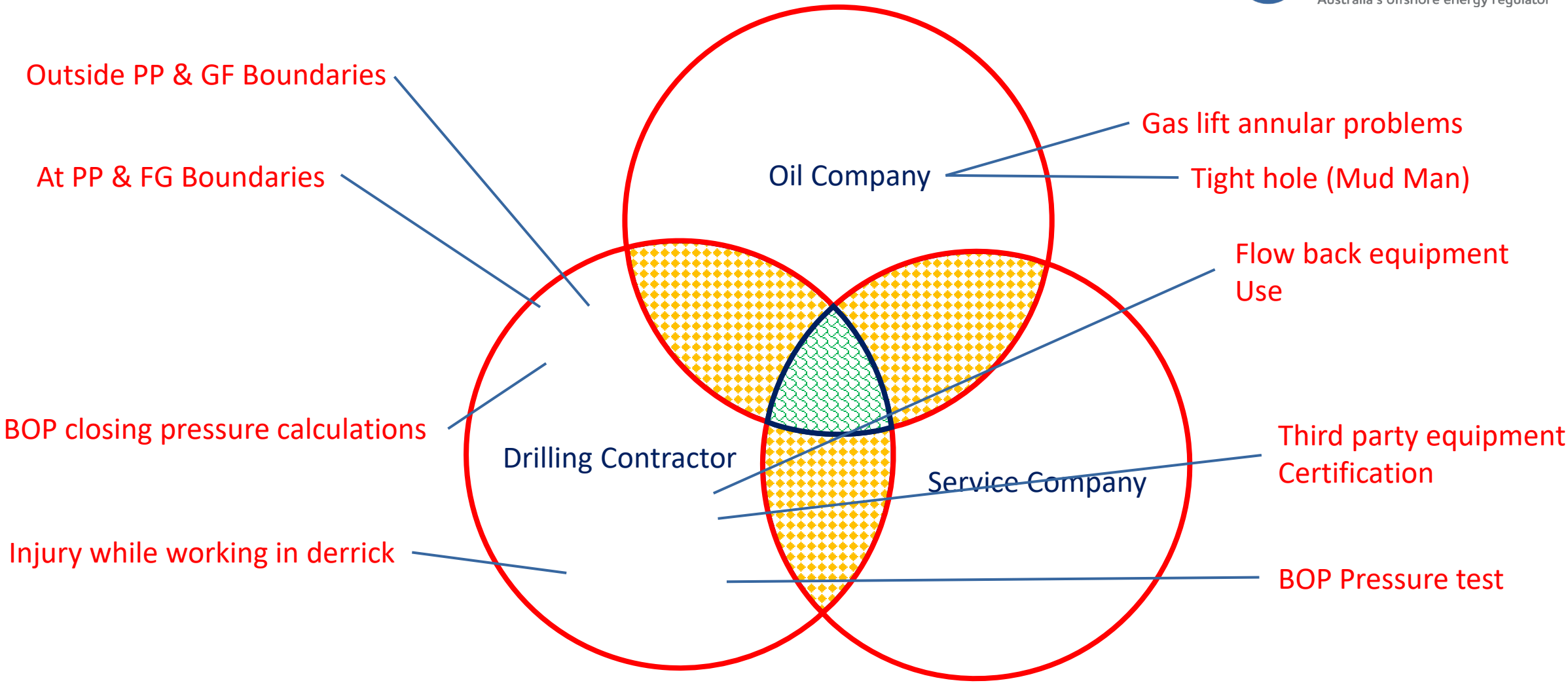
NOPSEMA World of Risk



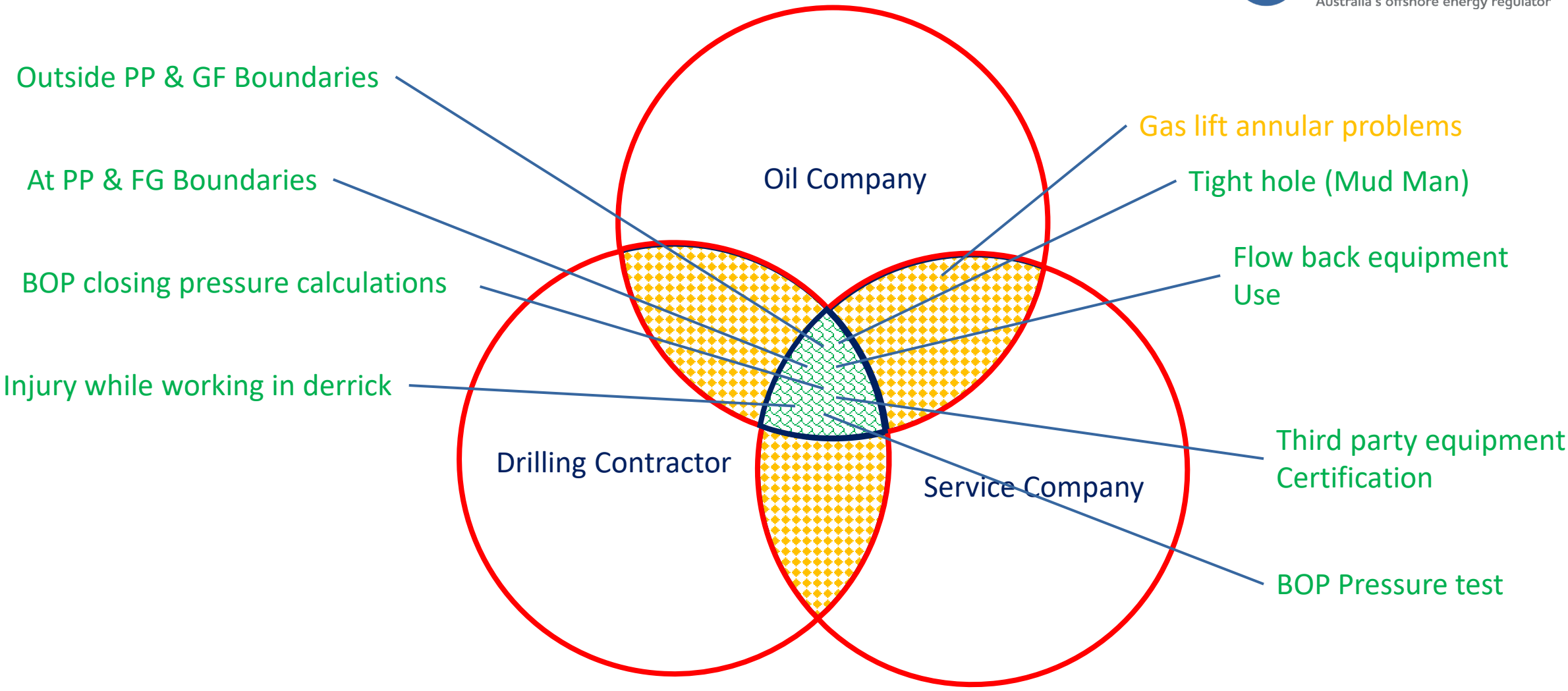
Who controls the risk now?



Who is responsible for the consequences?



Integrated management reducing risk

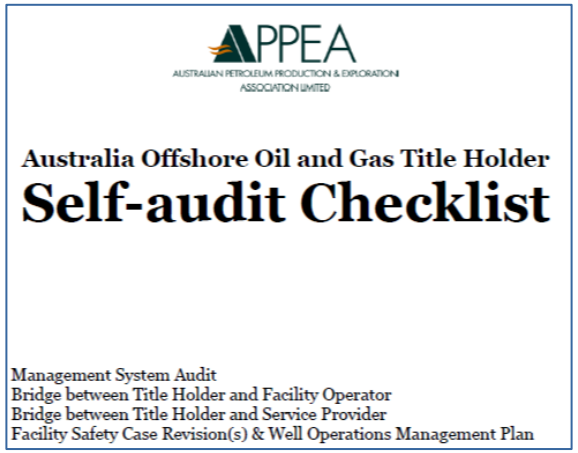


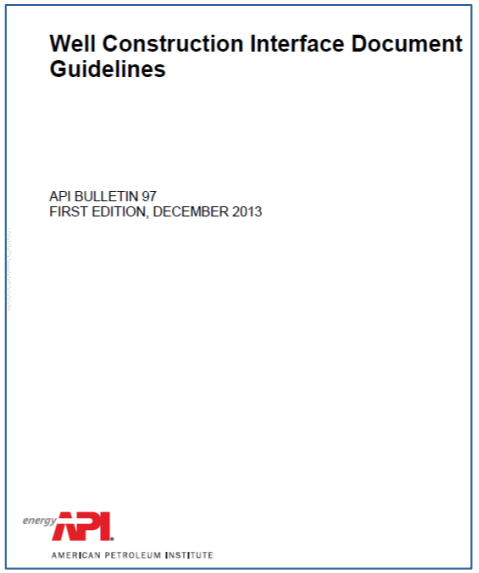
Opportunity for increased assurance from each other

Technical Partners

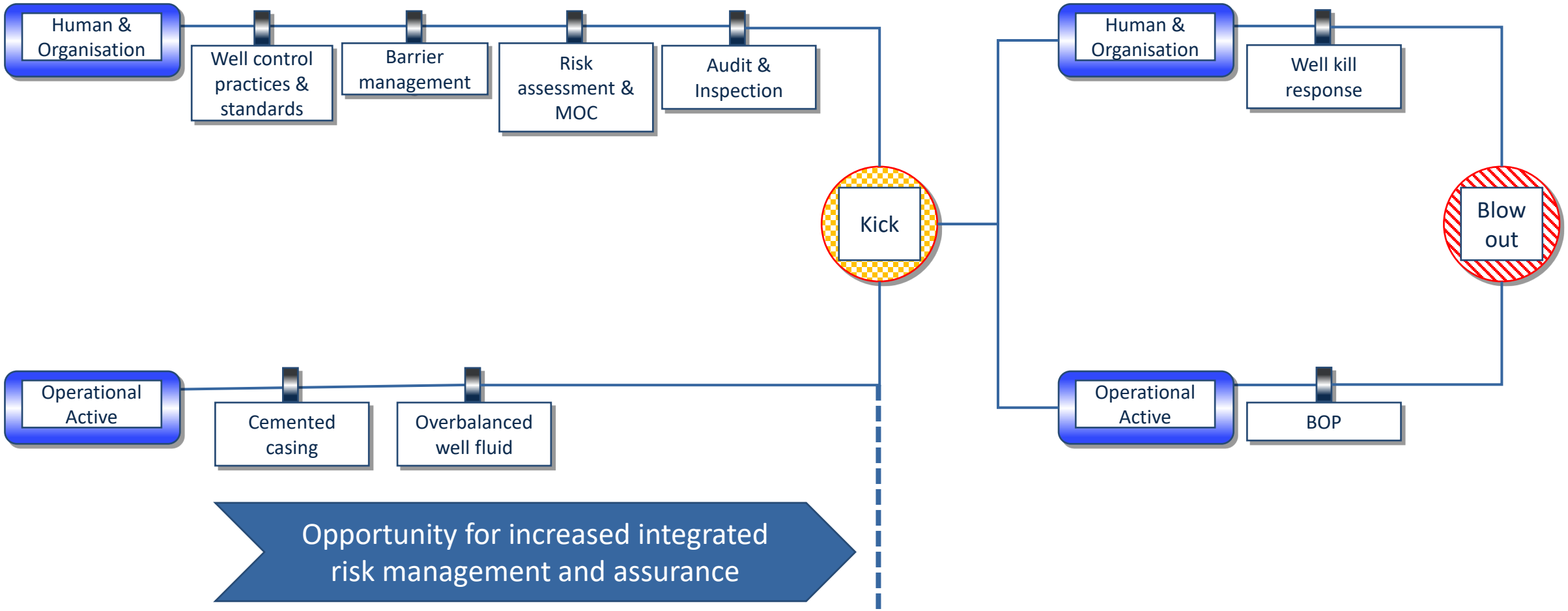
"Given the events of the past three years, drilling contractors should begin to act more like aircraft pilots than limousine drivers. Operators in turn should begin to treat contractors more like technical partners concerning world design, construction, risk management and management of change"

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



IRF - Well Control Problem Statement

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Problem statement:

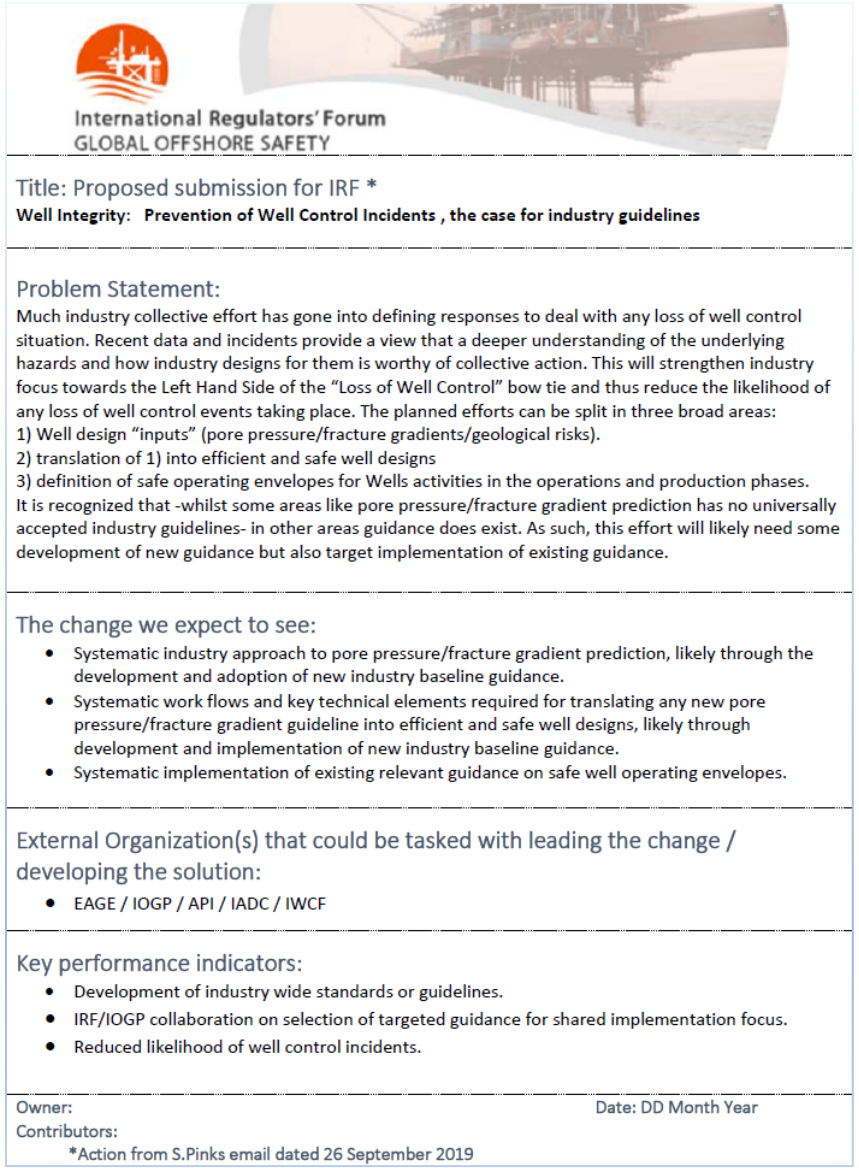
Greater emphasis is needed on the left-hand side of the "Loss of Well Control" bow tie, particularly on pore pressure & fracture gradient prediction (PPFG) and its application to well design and construction.

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



International Regulators' Forum
GLOBAL OFFSHORE SAFETY

Title: Proposed submission for IRF *
Well Integrity: Prevention of Well Control Incidents , the case for industry guidelines

Problem Statement:
Much industry collective effort has gone into defining responses to deal with any loss of well control situation. Recent data and incidents provide a view that a deeper understanding of the underlying hazards and how industry designs for them is worthy of collective action. This will strengthen industry focus towards the Left Hand Side of the "Loss of Well Control" bow tie and thus reduce the likelihood of any loss of well control events taking place. The planned efforts can be split in three broad areas:
1) Well design "inputs" (pore pressure/fracture gradients/geological risks).
2) translation of 1) into efficient and safe well designs
3) definition of safe operating envelopes for Wells activities in the operations and production phases.
It is recognized that -whilst some areas like pore pressure/fracture gradient prediction has no universally accepted industry guidelines- in other areas guidance does exist. As such, this effort will likely need some development of new guidance but also target implementation of existing guidance.

The change we expect to see:
- Systematic industry approach to pore pressure/fracture gradient prediction, likely through the development and adoption of new industry baseline guidance.
- Systematic work flows and key technical elements required for translating any new pore pressure/fracture gradient guideline into efficient and safe well designs, likely through development and implementation of new industry baseline guidance.
- Systematic implementation of existing relevant guidance on safe well operating envelopes.

External Organization(s) that could be tasked with leading the change / developing the solution:
- EAGE / IOGP / API / IADC / IWCF

Key performance indicators:
- Development of industry wide standards or guidelines.
- IRF/IOGP collaboration on selection of targeted guidance for shared implementation focus.
- Reduced likelihood of well control incidents.

Owner: Date: DD Month Year
Contributors:
*Action from S.Pinks email dated 26 September 2019


Questions?

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