

Notes from the

SPE WA / Curtin Oil and Gas Innovation Centre

Decommissioning / P&A Masterclass

6th December 2017

Programme

Chairs: **Claus Otto (Curtin University)**
Rodney Silberstein (ARV Offshore)

First Session Decommissioning (chair: **Rodney Silberstein**)

- WPL/UWA: “Pipeline Decommissioning: Fish Habitat Studies”, **Nick Boyle**
- DMIRS: “New guidelines, future use” **Jeff Haworth**
- UWA: “Decommissioning Law, Policy and Governance: Lessons and considerations for Australia”, **Professor Erika J Techera**
- Deloitte: “Decommissioning: The next Australian Oil and Gas Boom?”
Rowan Fenn

Lunch

Second Session P&A (chair: **Claus Otto**)

- Shell: “D&R Lessons from the North Sea”, **Ian Keith**
- Lloyd’s Register: “P&A Malaysian Activities”, **Jess Dubcak**
- Elemental Group: “Offshore Well Abandonment, Addressing the Challenges”, **Rolf Spieker**

Summary: **Claus Otto**

“Rules of engagement” / Outcomes

- The masterclass is designed to participate in and share research and educational learning and to understand the local WA industry challenges.
 - A summary note will document and review the technical challenges presented and discussed at the event.
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SUMMARY NOTES – SESSION 1

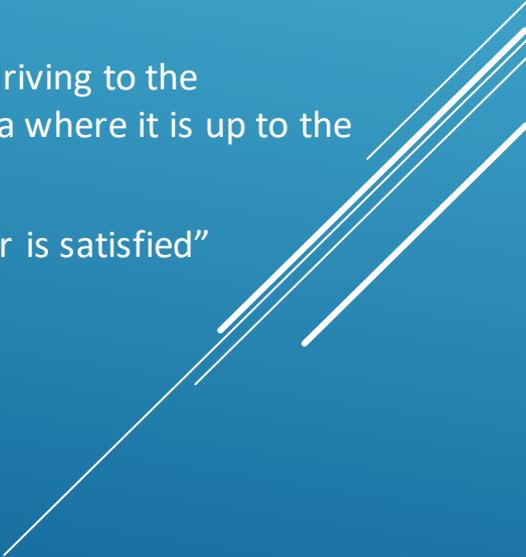
Pipeline Decommissioning: Fish Habitat Studies”, Nick Boyle - Woodside and Dianne McLean, Todd Bond – UWA

- Woodside uses APPEA decision making guidelines for decommissioning decisions but anchored to environmental plan development
- Echo Yodel end of life 2012, wells suspended 2012, pipeline removal 2016– flushed and cleaned (pigging)
- UWA studied section pipeline (WD 170m)left in place: outcomes for Echo Yodel demonstrate “positive” outcomes for pipeline: abundance and richness of fish species compared with offshore baseline
- High-value species of commercial importance thrive near pipelines
- Comment: So what is the criteria to determine changes/improvements to marine species which allow to leave pipelines in place?
- Q&A
 - Has UWA investigated commercial fishing value for greater depth (+400m)? UWA have investigated well heads at water depths to 800m. Indications (?) are deep infrastructure have little commercial fishing value, value to commercial fishing is in the 70/100 – 200m water depth range.
 - How do you fish for these highly valuable fish, how do you access given in-situ structure? Line fishers, fish traps all possible with the exception of trawling. Comment by DMIRS that exclusion zone is lifted after removal – also for partial removal?

“New guidelines, future use” **Jeff Haworth – DMIRS**

- DMIRS released new Decommissioning Guidelines - <http://www.dmp.wa.gov.au/News/New-Petroleum-Decommissioning-23181.aspx>
- Current cost and revenue pressure, might indicate nothing is happening but over last couple of years there has been intense onshore decom activity in WA, especially well P&A
- Future use is very important issue for State Govt, especially in regard to gas storage with many examples in WA (Tubridgi & Griffin onshore gas plant)
- State Govt acts/regulations/guidelines: all “subject to satisfaction of minister” for final decom approval; guidelines important for the interpretation of minister’s satisfaction.
- Licence handback to Govt is the formal transfer of liability to the State Govt. So key milestone for both operator and State Govt
- Looking forward (DMIRS perspective)
 - Templates for decommissioning plan (through APPEA) DMIRS?
 - Science and evidence based assessment ongoing – CRC would have helped
 - Liability, room to move
- Q&A
 - Are templates (State Govt) and NOPSEMA reference cases for decommissioning sufficient to for use/working on coastal water decommissioning projects? (A bit confusing as to who is working on what, state Govt, APPEA, NOPSEMA ... sounds like they are all working on the same things?) NO real answer tabled, this conversation moved to the next question below.

Cont.' Q&A

- Residual liabilities, key issue preventing robust and meaningful discussion between industry / Govt ? Reform legislation is planned, discussion paper on “financial assurance” has been written discussing the various approaches which could be taken. Mine rehabilitation fund is a current mechanism which could be used for oil & gas (e.g. Diamond mine which through a legal loop hole managed to avoid its decommissioning obligations). Suggested way forward is to setup “an instrument”, funded by industry, to act as an insurance fund.
 - Statement: “Check lists are not a good idea” – where is the opportunity for those to try & succeed with new ideas, not what has been done previously
 - In the UK it is clear who is in control, there is a clear strategy in place driving to the outcomes required for Govt / industry / society as opposed to Australia where it is up to the individual.
 - Exclusion zones, can they be removed? Can be removed once “minister is satisfied”
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“Decommissioning Law, Policy and Governance: Lessons and considerations for Australia”, **Professor Erika J Techera – UWA**

- Harmonising law & policy frameworks across regions & jurisdictions
- Law moves at glacial speed
- UWA performing a global review of governance associated with decommissioning, governance is just not the law but incorporates process/procedures/guidelines : drivers
- Decommissioning law spans many disciplines, multi issue, not just one perspective
- Refer to slides for summary of all relevant conventions and rules e.g. Law of the Sea, IMO, Geneva Convention 1958, Dumping Convention, Federal and State Laws
- International laws can play a standard setting mode, best practise
- UK OSPAR can be used as example of a country “dealing with” all the above conventions and rules
- Model
 - There is a spectrum of decom models ranging from “prove your case” (flexible) to “prescriptive” (US based). Should Australia adopt a hybrid of both? Case by case with template? Australia needs to meet its international legal obligations
 - Model that Australia should adopt? - Goal is certainty for society and operator
- Liability (residual) – goal is operator certainty and public confidence
- Current field of research – “holistic governance”, new framework – approval regimes

“Decommissioning: The next Australian Oil and Gas Boom?” **Rowan Fenn – Deloitte**

- Change in the Wind: Decommissioning wave forming for Australia and Asia Pac, expert (niche) opportunities – decom is too big to ignore, Australia ranks bottom on global efforts
- Facilities reaching end of their producing life, liabilities estimated at US \$21bn+
- Global expenditure estimated US \$210bln (2010-40)
- Asia Pac 1700 offshore installations, 50% > 20yrs old; 600 fields to cease production in the next 10 yrs
- Different approaches to offshore decommissioning: complete removal, relocation, re-use, disruption, augmentation
- Optimal decommissioning solution depends on what is technically feasible and what is desirable from an environmental, economic and societal perspective and what is legally permissible
- Leverage global best practices and collaborate with other regions
- Australia can become a leader in end of life cycle asset management > skills and experience can be exported

Q&A

- Opportunity for innovation in Australia compared with GOM, how to refine this for very small volumes? The key point is in the Australian context the decommissioning annual volumes will be too small to support the development of a new decom industry (2 projects/year) as opposed to the GOM (50/60 platforms/year) where the demand has supported the development of tooling/expertise to efficiently & effectively service the need. Deloitte were suggesting the market would need to be expanded to incorporate SE Asia and the Australian based expertise should focus on re-use & re-purpose. They then cited the Great Australian Bight example.

Cont.' Q&A

- Subcon is a good example of a company which is creating an opportunity for a unique solution combining offshore decommissioned infrastructure enhanced with artificial reef enhancing substructures offshore Exmouth. NERA funded project kicking off next week.
- General comment: view there are many projects/research activities ongoing without what appears a coordinated approach. CRC was that vehicle but that opportunity has passed
- How do we start/continue this communication, something needs “setting-up” in lieu of the CRC to engage industry/ Govt / research?
- Stakeholder collaboration is key to success, cost reduction is incredibly difficult, need a corporate champion within each organisation to push this forward? As a state Govt regulator, we receive multiple enquires from external parties and international practitioners to collaborate with the govt. CVX / Inpex have conducted workshops. Need to use SE Asia as a means to “get things up & running”, to build a portfolio.

SUMMARY NOTES – SESSION 2

“D&R Lessons from the North Sea”, **Ian Keith – Shell Australia**

- Cost distribution, 25% only attributed to prep and removal of topsides, 47% attributed to well P&A. Owners costs at 19% is high, Operators are not experts in the area of decom, so management costs are excessive and need to be reduced.
- Range of examples provided to illustrate where cost savings can be made: large topsides, sub-sea tie-back, jacket spanning North Sea and GOM
- Success factors
 - Mind set, demolition not reverse engineering
 - Learning from other countries
 - Clear fit for purpose D&R requirements
- Supply chain innovation: Volumes, campaign/bundling
- Share good practice: decom not competitive (i.e. not HC finding), more tax minimisation
- More pragmatic solutions, more innovation, more collaboration
- Risk-based approach based on science
- Clear-decision processes; residual liabilities back to the government

Q&A

- What level of infrastructure prepared/supplied quayside for 24,000 MT Brent? Just the reverse of a topsides load out – none.

“P&A Malaysian Activities”, **Jess Dubcak – Lloyd’s Register**

- Need heavy lift boats in the Malaysian regions, need to be mobilised from US, Europe \$US2.5M!
- It is what it is, that’s reality at the moment
- Everything has changed since Macondo
- Petronas ramping up using GOM techniques
- Resins replacing cement; operators need to join up to reduce costs

Q&A

- Everything has changed from Macondo, what has changed? Operators have changed methodology; multiple scenarios, more planning ...
 - Comment from Jess: Limitations of Australian resources, why aren’t lift boats being utilised?
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“Offshore Well Abandonment, Addressing the Challenges”, Rolf Spieker – Elemental

- The decommissioning market is immature and current contract models are adversarial, putting either the operator or the contractor at undue risk
 - Asia-Pac region has great diversity in the types of offshore structures installed
 - It is estimated that 91 offshore installations have been removed in the region since 1975, just 5.2% of the structures ever installed.
 - There are 206 active installations in the region that are older than 30 years and still require decommissioning
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- Technology Challenges
 - Plugging Materials: What works, Best practices, Alternatives to cement and verification of same.
 - Waste Management/Disposal
 - Well abandonment planning tool
 - Alternative rig design: Small, fast moving
 - Alternative Milling, cutting, perforating techniques
 - Primary Cement Verification
 - Gauge cable removal techniques
 - Develop Reliable & Repeatable Abandonment Techniques
 - Need to Abandonment R&D
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CHAIR – SUMMARY OBSERVATIONS

- There is demonstrable engagement of the WA oil & gas industry with local researchers to establish “leave in place” impact to marine environment. These activities appear to be a good start and should be the basis for future engagement with Government, community and commercial fishers to support scientific evidenced based decommissioning decisions.
- While offshore decommissioning activity appears to have been low; onshore decommissioning activity has been high within Western Australia. Onshore Operators and the Dept. of Mines, Industry Regulation and Safety (DMIRS) have been working through many of the decommissioning related issues and this recent dialogue could be levered for offshore; especially in relation to future use decisions.
- Recently DMIR published “Petroleum Decommissioning Guideline” is a good step to clarifying the decom approval criteria = “subject to satisfaction of Minister”; it offers derogation decisions to be based in part on scientific research. However, residual liability still remains a key issue and new legislation discussion pertaining to financial insurance and instruments need to be followed closely.
- We have a “conscious decision to make” in terms of the Australian decommissioning model adopted: prove your case, prescriptive or somewhere in between? Hopefully the decommissioning law, policy and governance work by Erika can guide which path we should follow in Australia.
- Is the decommissioning market too small in Australia to support the development of a new industry? It would appear so, we must also focus on the Asia Pacific region and maybe on novel re-use / re-purpose methods.
- Decommissioning lessons from the North Sea provide guidance as to cost breakdowns, inefficiencies and importantly opportunities. We must lever these insights.
- Well P&A is estimated to be the highest single liability contribution, it needs to be a focus of research activity moving forward, especially in the Australian context.

CONTACTS

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