

Senate Environment & Communications References Committee
ANSWERS TO QUESTIONS ON NOTICE
Department of Industry, Innovation and Science
Public hearing, Canberra
14 February 2018

AGENCY/DEPARTMENT: DEPARTMENT OF INDUSTRY, INNOVATION AND SCIENCE

TOPIC: Offshore decommissioning

REFERENCE: Written Question – p.12.

QUESTION No.: 1

Senator REYNOLDS: When they cap a well, is it subject to inspections after that to make sure that it's not leaking or anything else? Or is it capped and off you go?

Mrs Schofield: As I said, each of these decommissioning activities would be subject to an environmental plan that would need to be approved by NOPSEMA before the activity could happen. I might have to take on notice the detail of how many fall into each category. Because we understand there's been a lot of plugging and abandonment activity across the globe, and we've got a lot of wells in the Australian jurisdiction that have been plugged and abandoned, I think that there is an understanding that there are some that would not require ongoing monitoring and maintenance, because there's enough confidence that, once it's plugged, it's done, particularly if you've got dry wells. If there's nothing in there, then there isn't anything that would be leaking out. So, with the post-decommissioning, my sense is that there wouldn't be very many that would be subject to ongoing monitoring.

Senator REYNOLDS: Would you take that on notice, because my assumption would be that part of the plans would be that it wouldn't just stop at remediation action but that there would be some afteraction or checking? But sometimes you can make these assumptions and they're not always valid. If you wouldn't mind taking that on notice, that would be great, just so we can see what the process is.

CHAIR: In fact, given that there are, as you said, actually only a limited number that have been rehabilitated, would you be able to take on notice to articulate how many and what the projects are that have been closed and rehabilitated in Australian waters?

Mrs Schofield: Sure.

ANSWER

Well permanent abandonment

The plugging and abandonment of wells is managed in accordance with a Well Operations Management Plan (WOMP), which is a requirement of Part 5 of the *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011*.

In accordance with these Regulations, prior to undertaking this process titleholders must submit and have a WOMP for the activity accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). The WOMP not only includes a description of how, during the process of abandoning the well, risks to well integrity will be reduced to as low as reasonably practicable (ALARP), but also describes how the actions taken during this process will ensure that the integrity of the well is maintained while the well is abandoned. The plugging and abandonment process must then be undertaken in a manner consistent with the accepted WOMP.

The permanent abandonment of any well is a complex technical process that requires appropriate expertise and the application of specialist knowledge. Over the lifetime of the offshore oil and gas industry, techniques for well abandonment have been progressively improved resulting in the development of international standards and guidelines for the plugging and abandonment process. These are considered by NOPSEMA in its assessment of WOMPs.

In Commonwealth waters, in order for a well to be considered permanently abandoned, a titleholder must put in place at least two tested barriers that ensure that any hydrocarbon bearing geological formation is permanently isolated from any flow path that may have been created through the drilling of the well.

A titleholder must put in place both a primary barrier to isolate hydrocarbons as well as a secondary barrier to provide further assurance that any possibility of leakage from the well is mitigated.

These barriers are made of cementitious materials that are placed down the well across hydrocarbon bearing formations to achieve permanent isolation.

Following the placement of permanent barriers to isolate geological formations, the barriers must be tested (including pressure testing) and monitored to verify their integrity and to ensure that isolation of the hydrocarbon bearing formations has been achieved. International standards and guidelines provide relevant considerations for the placement, height and verification of barriers.

Once barriers have been comprehensively verified, the titleholder must provide a written report to NOPSEMA on the process by which permanent abandonment was carried out for each well and the outcome of that abandonment process, including relevant technical details about the process.

The report also includes the following details for the primary, secondary and any additional barriers:

- a) How the barrier was set, providing actual depths of formation tops and casing depths, tops of cement and depths of permeable zones known; and
- b) Verification methods used to assure the integrity for the barriers set.

Dedicated well integrity experts within NOPSEMA undertake an assessment of this report against relevant legislative and regulatory requirements as well as taking into account appropriate international standards and guidelines applied in abandonment of the well.

Where NOPSEMA determines that it is reasonably satisfied that the process of abandoning the well, including testing, monitoring and verifying barriers, has been undertaken in accordance with the WOMP, NOPSEMA will notify the titleholder of this outcome. Once reports for all wells to which the WOMP relates are accepted by NOPSEMA, the WOMP ends, meaning it is no longer in force and the titleholder cannot continue to conduct well activities under that WOMP.

In accordance with its published compliance strategy, NOPSEMA undertakes compliance monitoring inspections of titleholders' well related activities. This includes monitoring compliance with the requirements of the legislation relevant to the drilling and abandonment of wells and the taking of appropriate enforcement action where compliance is unable to be demonstrated.

Decommissioning and closed projects

Decommissioning is a normal activity in the lifetime of an offshore petroleum project. Its purpose is to remove or otherwise satisfactorily deal with, in a safe and environmentally responsible manner,

infrastructure previously used to support operations. This includes plugging and abandoning wells, rehabilitating the site and carrying out any necessary monitoring. This occurs at the end of a project, as well as incrementally throughout the project life, when the infrastructure is no longer needed.

Decommissioning activities are the responsibility of the registered holder of the title under which the activities take place. This includes timely and effective planning, obtaining necessary approvals, and executing the activities in compliance with the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act), the associated regulations (including accepted permissioning documents) and other applicable domestic and international laws.

The complete removal of infrastructure is the default decommissioning requirement under the OPGGS Act. This is consistent with Australia's international obligations, primarily under the United Nations Convention on the Law of the Sea (UNCLOS) and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) and associated Protocol, to remove disused installations and structures and to preserve and protect the marine environment. This requirement is however subject to other provisions of the OPGGS Act and regulations, directions given by NOPSEMA or the responsible Commonwealth Minister, and other applicable laws.

This means options other than complete removal may be considered (such as in-situ decommissioning), however the titleholder must demonstrate that the alternative decommissioning approach delivers equal or better environmental outcomes compared to complete removal, and that the approach complies with all other legislative and regulatory requirements – including requirements under other Commonwealth laws. Titleholders can demonstrate these matters through the submission of permissioning documents to NOPSEMA under the OPGGS regulations.

Decommissioning activities, including removing or otherwise dealing with property and remediating the title area, are petroleum activities for the purposes of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. The titleholder undertaking the activities will therefore need to submit and receive acceptance for an environment plan (or receive acceptance for a revision of an existing plan, if appropriate) before the relevant activities may commence.

Environment plans for decommissioning should address the titleholder's proposals for:

- the complete removal of all property to which the plan relates, or alternative arrangements for that property (e.g. partial or complete decommissioning in-situ);
- the protection and conservation of natural resources (as they relate to environmental management) in the area to which the environment plan relates; and
- any measures necessary to make good any damage to the seabed or subsoil in the title area.

In assessing an environment plan, NOPSEMA will consider whether the titleholder has identified all risks associated with the activity, and demonstrated how those risks will be managed to ALARP and acceptable levels. Titleholders must also undertake all activities in a manner consistent with their accepted environment plan.

To date, a number of smaller projects have been decommissioned under the current regulatory regime. However, the regime is yet to be fully tested for larger development projects.

Details of decommissioning environment plans assessed or under assessment by NOPSEMA are provided below.

Environment Plan	Titleholder	Activities
Puffin Wells Abandonment Environment Plan AC/L6	Sinopec Oil and Gas Australia (Puffin) Pty Ltd	Plugging and Abandonment of 7 wells and a subsea infrastructure survey
Jabiru and Challis Fields (Decommissioned State)	PTTEP Australasia (Ashmore Cartier) Pty Ltd	In situ decommissioning of subsea infrastructure
Julimar seabed remediation	Apache Julimar Pty Ltd	Removal of drill cuttings and remediation of seabed
NCC Buoy Removal	Apache Oil Australia Pty Ltd	Removal of a Navigation, Communication and Control Buoy
Puffin Field Abandonment Activities	Sinopec Oil and Gas Australia (Puffin) Pty Ltd	Complete removal of subsea infrastructure
Wellhead Removal	Shell Australia Pty Ltd	Removal of 7 subsea wellheads
Vesta 1 and 2 wellhead abandonment	ENI Australia Pty Ltd	In-situ decommissioning of 2 wellheads
Addendum to Hyde-1 exploration drilling	Quadrant Northwest Pty Ltd	In-situ decommissioning of subsea infrastructure
Argus 2 wellhead	Woodside Browse Pty Ltd	In-situ decommissioning of 1 wellhead
WA-34-L exploration wellheads (under assessment)	Woodside Burrup Pty Ltd	In-situ decommissioning of 3 wellheads

In order to keep stakeholders up to date on the assessment processes, NOPSEMA publishes information on its website regarding the status of Environment Plan submissions and decisions. Specifically, this information is available here: <https://www.nopsema.gov.au/environmental-management/activity-status-and-summaries/>

Legislative and regulatory requirements and policy expectations for decommissioning offshore petroleum infrastructure are also outlined in the *Commonwealth Offshore Petroleum Decommissioning Guideline*, which can be accessed here: <http://www.nopta.gov.au/guidelines-and-factsheets/offshore-petroleum-guidelines.html>