

Attachment

Montara Inquiry – Request for submission

Background

The Victorian Department of Primary Industries (the DPI) was requested to provide information and examples of how the DPI as the DA would normally undertake to approve the suspension of an offshore oil and/or gas production well.

This attachment serve as the response to that request by the Commission of Inquiry as contained in the letter dated 16 February 2010 to the DPI. Examples of DPI processes are appended to this attachment.

General Information DPI Processes

The process for approval of suspension or abandonment of a production well

The relevant legislation and regulations governing such activities are:

- Offshore Petroleum and Greenhouse Gas Storage Act 2006
- Petroleum (Submerged Lands) (Management of Well Operations) Regulations 2004
- Petroleum (Submerged Lands) (Management of Environment) Regulations 1999
- Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production 1995
- Offshore Petroleum (Safety) Regulations 2009
- Petroleum (Submerged Lands) (Data Management) Regulations 2004

The appropriate regulatory requirements for suspension or abandonment are in accordance with:

- Petroleum (Submerged Lands) (Management of Well Operations) Regulations 2004
- Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production 1995 (where applicable or used as guide)

The basis of the process and tasks are as summarized below:

1. Suspension or abandonment of a production well is part of the well life cycle of design, construction, completion, suspension, well intervention and abandonment.
2. Suspension or abandonment of a production well requires separate approval from the DA. That means, suspension or abandonment of a production well should be in accordance with Regulation 17 of the Petroleum (Submerged Lands) (Management of Well Operations) Regulations 2004. The Well

Operations Regulations are one of a number of regulations under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (the Act).

3. Suspension or abandonment of a production well must comply with the DA accepted Well Operations Management Plan (WOMP) for the design, construction, completion, suspension/abandonment and well intervention of wells by the titleholder/s of the production licence.
4. The implementation of the suspension or abandonment must comply with the suspension or abandonment programme drawn up or designed in accordance with the accepted WOMP as well as fulfilling any requirements under the accepted Environment Plan* and Safety Case* and in accordance with good oil field practice (petroleum industry best practice).
5. The titleholder requests an approval for this activity together with all the necessary information as stated in the Well Operations Regulations. DPI uses the Schedule of Specifics Requirements as the guide for minimum standards for suspension or abandonment of production wells although a number of the relevant clauses have been revoked.
6. The request (or application) is assessed using criteria that have been set in the accepted WOMP, checking with the minimum standards as per the Schedule of Specific Requirements and normally the company's standards or procedural manuals which are usually listed in the accepted WOMP.
7. An approval letter is then prepared and signed by the Delegate of the DA and sent to the titleholder. A pdf copy of the signed letter may be sent by email and the original letter posted by regular mail.

See attachments for example of the various guides, assessments and charts showing regulatory requirements. These attachments include the process flow chart (file title: Manage OP – approval process chart)

***Consideration of Well Operation through the EP and Safety Case process.**

Both the EP and Safety Case (SC) are risk based acceptance processes carried out by the DA and NOPSA respectively. Under the Environment Regulations an EP is required for all petroleum activities, whereas SC only applies to facilities as defined under Schedule 3 of the Act (OPGGSA 2006).

For the drilling of a well an EP applies and all risks assessed including the risk to the integrity of the well prior to the acceptance of the EP. However, in practice it is assumed that the risk to well integrity is assessed by the DA through the Well Operations Regulations. There is only verbal communication between the DA EP assessor and Well Operations assessor on the well integrity risk prior to the acceptance of the EP.

For SC a well is only considered to be a facility when it is "attached to a vessel for the recovery of petroleum" (OPGGSA 2006 Schedule 3, Clause 4, in particular Clause 4 (1) and Clause 4 (4)). However, like the EP assessment by the DA under the Environment Regulations, it is understood NOPSA chooses not to assess the well integrity risk during the SC assessment. Communication of acceptance of WOMP from DPI to NOPSA is required by the MOU between the parties.

When the Well Operations Regulations came into force in 2005, DPI voluntarily referred the WOMP to NOPSA for comment. However, NOPSA chose not to comment and the practice ceased.

The majority of well operations in the Victorian DA jurisdiction are for the recovery of petroleum. In this situation NOPSA has the power to assess well integrity risk under safety case assessment.

Specific Information DPI Processes

- a. *The type and volume (including level of detail) of information the DPI requires an operator to produce to the DPI in seeking approval to vary an approved drilling program in relation to any major change to that drilling program (including, the suspension or abandonment of a production well), including whether the DPI requires the operator to provide documentary evidence of for example:*
- i. *Any risk assessment or analysis undertaken by the operator in relation to the proposed variation;*
 - ii. *Any change control process required by the operator in question; and/or*
 - iii. *Any objective well construction standards of the operator against which the proposed variation has been measured, prior to the DPI granting the approval;*

The basic information required for suspension or abandonment or for any major change of program includes (but not necessarily limited to) the following:

- Well name and the well summary – depth, casings, reservoirs, drilling problems encountered
- A brief description of the proposed activity – suspension or abandonment or major change including reason/s and evidence
- A well configuration or schematic including the proposed plugs or well control devices (*barriers*)
- Activity schedule
- Risk assessments particularly if this was not a regular change or an activity that was regularly conducted
- Contact person or person responsible for the request.

The request would be assessed using the Schedule of Specific Requirements if for suspension or abandonment and cross checked with the accepted WOMP and relevant regulations. Regulations 6 and 25 of the WOMP Regulations may be relevant.

Suspension or abandonment of a production well or a well that might be completed later for production depend on the type or nature of the suspension. The three basic types of suspension are given with examples:

1. A completed well that is ready to produce but there is a delay in tying-back to the facilities including pipelines – This is regarded as a

temporary suspension that may be a few months (e.g. Longtom-4). The well was drilled in 2008 and completed with all the appropriate tubing, valves and well head. The suspension was necessary due to a delay for the pipeline connection. The well had all the necessary well control that include the cemented production casing, tubing, valves and well head. The well therefore could be suspended until all the connections and tie-backs are in place prior to the well being brought online as a producer.

2. A well drilled but is not completed and is waiting for equipment or a facility – this is also regarded as a temporary suspension for a few days to 3 weeks (e.g. West Kingfish-26a – the well was drilled in 2009 but needed to wait for completion equipment. The well was not perforated, it had cemented production casing and was capped for well control with the ability to be monitored. The well was suspended for two weeks and could be directly monitored as it was located on a manned platform.
3. A well that is drilled and logged but not completed and may be completed at a later date for production – this is regarded as a long term suspension or temporary abandonment. (e.g. West Seahorse-3). The well was drilled in 2008 and was not completed. As there was uncertainty as to when the well would be re-entered or completed, the suspension was treated as a temporary abandonment basis with plug across the reservoir, a cement plug across the lowest casing shoe, a top plug below the sea floor level and the well capped with a cap to protect the mudline suspension system (MLS) including the casings that were cut at the sea floor level.)

Examples of abandoned wells are:

- Wells that are permanently abandoned – that means the well will not be used for production anymore (West Kingfish 8A and Somerset-1). These wells were drilled in 2009 without the expected reservoirs being encountered and were plugged and abandoned).

The requirements for the above suspensions and abandonment were based on Clauses 514 and 515 (*now revoked*) of the Schedule of Specific requirements which were taken as guides and appropriate steps taken to ensure the wells were secured and well control was in place at all times.

Based on the Well Operations Regulations, in particular Regulations 10, 17 and 25, title holder can only carry out a significant change if the WOMP and its associated documents (drilling or completion programs or procedures or manuals or standards are as listed) and the company has undertaken risk assessment and has obtained approval from the DA for such change. In certain situations, the company may only need to provide notification of such change provided it has conducted hazards identification and risks assessment. Such notifications normally have been agreed before hand and usually specified in the WOMP or in its associated documents. Otherwise, the company may provide a proposed change order plus its risks assessment

including reasons behind the change and how the company intended to do the change. A typical example was when Esso Australia decided to change its sub-surface safety valve (SSSV) to a "Storm Choke" – a different type of SSSV. This is a valve that controls the flow of produced fluids from the reservoir to the surface in the well (Kingfish B-18a). Attached are the documents for this well change over. These documents are commercially confidential to Esso Australia and may not be published without its approval or consent.

- b. *The process by which the DPI addresses urgent requests for approval for any major change to an approved drilling program (including to suspend or abandon a production well), including:*
- i. *How preliminary approvals are effected (ie. By telephone and/or email);*
 - ii. *The average turn-around time for such approvals; and*
 - iii. *The type and volume (including level of detail) of information required by the DPI prior to granting preliminary approval;*

All requests for approval or consents are governed by the regulations and where appropriate by the Schedule of Specific Requirements, particularly with abandonment of production wells as there are no Resource Regulations in place. The requests are in accordance with the accepted WOMP and where relevant the accepted EP for the approved drilling, completion or production programs.

These requests for approvals are processed and assessed as for any request, whether urgent or routine. The DPI requires a 24 hour turnaround for urgent requests. However, if the request requires immediate response, DPI has after hours and week ends duty roster. The duty officer would discuss the request and the information provided with the company (title holder) and the Delegate to the DA on the assessment or review. In this case a verbal consent or "no issue" with the request is given and the company can commence the activity. Normally an email is sent immediately following the telephone conversation followed by a formal approval letter that would be sent the following working day.

The basic information provided for the DPI to make such a decision would be the same as any request for approval, guided by the Regulations, the accepted WOMP, the approved programs and the Schedule of Specific Requirements. The list would be as above in answers to question a.

A typical example of the "urgent" request for suspension was the request by 3D Oil for the suspension of the West Seahorse-3 (mentioned earlier) which was dealt with within a few hours on the day (out of office hours) of the request. The documents are as attached for question a. Attached are examples of email "approvals" and formal approval letters when dealing with Esso Australia which has 19 production licences with 21 platforms and 364 active production wells (as at 2009) in Bass Strait . However, the DPI has always discouraged companies from requesting urgent approval. Most of urgent requests need at least 24 hours to a few days notice. DPI has made arrangements with Esso Australia to request for approval for any major change to be submitted at no less than 24 hours in advance and on a business day.

- c. *Whether the DPI assesses any applications for approval to suspend or abandon production wells against any national or international objective well construction standards, and if so:*
- i. *What those standards are; and*
 - ii. *Whether the DPI considers those standards to be representative of 'good oilfield practice'; and*

Most, if not all of our assessment of request for suspension and abandonment are based on using the guide as per Clause 514 and 515 (now revoked) of the Schedule of Specific Requirements as well as best practices of the petroleum industry (good oilfield practice) and in accordance with the Regulations and accepted WOMP and approved programs and including review through EP requirements. The usual standards are those of API (American Petroleum Institute) or the Norwegian and UK standards. The producing companies in offshore Gippsland and Otway such as Esso Australia, Nexus, Santos and Woodside have their own operational standards or manuals as described or listed in the respective accepted WOMP.

Attached are an API standards, the Norwegian standards for well integrity and a copy of Exxon Mobil manual for suspension and abandonment of wells. The Exxon Mobil document is confidential as DPI has not obtained permission for it to be published or to be provided to third parties other than the DA and JA (Joint Authority).

- d. *Whether the DPI assesses and approves applications relating to production wells against any established departmental or branch-specific procedure (for example, whether the DPI has a checklist against which to assess applications) and if so, what the procedure involves.*

DPI has put in place process charts for all offshore operations and also guides and assessment templates. These templates include assessment of WOMP and EP, assessment for infill drilling, completion/perforation, the abandonment of producing zones (well activities) and for other approvals.

Some assessments are handwritten on the actual program as each assessor reviews the program. The DPI requires both an electronic version of drilling and completion programs and two hard copies – one for document control and the other for the assessor to work on. Attached are examples of the templates.

List of Documents

Main examples

1. Esso Australia Bass Strait Well Operations Management Plan
2. WOMP Requirements Checklist & Assessment – Somerset-1 (Woodside)
3. WOMP Requirements Checklist & Assessment – Trefoil-2 & Rockhopper-1 (Origin Energy))
4. Review and assessment of Origin Energy – Outloine Drilling Program – Rockhopper-1
5. Email assessment– Trefoil-2 Actual Depths
6. Email assessment - Application to Drill - Montara H1 ST1 RW1
7. DPI Comments on PTTEP Montara H1 ST1 RW-1 Drilling Program

Question A

1. Change Management – Installation of Ambient Pressure Subsurface Safety Valve Notification
2. ADA management Control Procedure – Hazard identification and Risk Management Guideline
3. Nexus application for approval to suspend Longtom-1 well
4. Esso application for West Kingfish W8A approval to abandon well
5. Esso email to DPI providing explanation on suspension of West Kingfish W26a
6. Review and assessment of Esso Australia well abandonment approval request for West Kingfish W8A
7. DPI email on Esso Australia West Kingfish temporary suspension approval W26a
8. DPI email on Esso Australia West Kingfish W8A abandonment
9. Esso email on West Kingfish W8A abandonment
10. ADA email on West Seahorse-3 suspension
11. DPI email on West Seahorse-3 suspension dated 6 May 2008
12. DPI email on West Seahorse-3 suspension dated 7 May 2008
13. DPI email to MRT on Somerset-1 well application to abandon
14. DPI email to MRT on T/34P Somerset-1 P&A
15. DPI email to MRT on Somerset-1 well application to abandon
16. DPI email to Esso Australia on West Kingfish temporary suspension approval W26a
17. Seadrill – Nexus SC Campaign Hazid data sheets (drilling, completiojs and well testing)
18. DPI letter to Esso Australia on WKF Drilling – W26A development well suspension
19. DPI letter to Nexus approval to suspend Longtom-4 well in Licence Vic L29
20. DPI letter to 3D Oil Approval to suspend West Seahorse-3 well in permit Vic/P57
21. DPI letter to Esso Australia West Kingfish w8A abandonment approval
22. Actual Longtom-4 Recompletion Schematic
23. Seadrill – Nexus SC Seadrill Rig Organisation Chart
24. 3D Oil Suspension Program West Seahorse-3
25. W26a Proposed Suspension Schematic – 21 Dec 2009
26. Esso letter WKF Drilling – W26A Development Well Suspension Approval

Question B

1. DPI email to Esso Australia Cobia A21A completion approval
2. DPI email to Esso Australia DPI approval requests – Bream A16, A20A, A22Ast1, West Kingfish W18A, W28
3. Esso Australia letter Cobia A21A Completion Approval
4. Esso Australia letter West Kingfish W18A Perforation Interval Approval
5. DPI letter Cobia A21A Completion Approval
6. DPI letter West Kingfish W18A Approval – Additional Completion (Perforations) and Isolation Pugging

Question C

1. API Environmental Guidance Document: Well Abandonment and Inactive Well Practices for US Exploration and Production Operations
2. NORSOK Standard D-010 Well Integrity in Drilling and Well Operations
3. ExxonMobil Well Suspension and Abandonment
- 4.

Question D

1. Content of an Environment Plan Checklist
2. DPI MPD Process Diagram Assessment of Plans
3. Offshore Petroleum Exploration and Production (Objective-based regulations)
4. Possible contents of a well operations management plan (WOMP)
5. Review and assessment of ...*major change* (template)
6. WOMP Requirements Checklist – template
7. WOMP basic audit checking items

Note

Electronic version of these documents are in the disc (CD)