

**REVIEW OF THE CIRCUMSTANCES THAT LED
TO THE ADMINISTRATION OF THE NORTHERN
OIL AND GAS AUSTRALIA (NOGA) GROUP OF
COMPANIES**

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IN-CONFIDENCE



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Executive Summary

On 20 September 2019 the Northern Oil and Gas Australia Pty Ltd (NOGA) group of companies went into voluntary administration and subsequently, on 7 February 2020, into liquidation. One of the companies in the group, Timor Sea Oil & Gas Australia Pty Ltd (TSOGA), was the petroleum titleholder for the Laminaria and Corallina (LamCor) oil fields situated approximately 550 km offshore of Darwin, and owned the associated Northern Endeavour floating production storage and offtake facility (FPSO).

As a consequence of NOGA's liquidation, the Commonwealth Government set up the Northern Endeavour Temporary Operations program, taking control of the Northern Endeavour until a longer-term solution could be agreed. During the drafting of this Review, the Northern Endeavour was no longer producing hydrocarbons and remained in lighthouse mode under the management of a small crew.

On 23 March 2020, the Minister for Resources, Water and Northern Australia, the Hon Keith Pitt MP, appointed me to conduct a Review into the circumstances that led to this situation. He asked me to examine the roles, responsibilities and behaviours of the key stakeholders: the NOGA group, the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), and the National Offshore Petroleum Titles Administrator (NOPTA) and Joint Authorities (JAs). My remit was also to provide advice to the Government on possible areas for reform of the offshore oil and gas regulatory regime.

The Northern Endeavour and the LamCor fields

The LamCor fields lie within two Petroleum Production license areas, AC/L5 and WA-18-L. The Northern Endeavour and associated wells are within AC/L5. Production of both fields commenced in 1999, with peak production of 180,000 bbl/day. By 2015, the titleholder for AC/L5 was a joint venture of Woodside Energy Ltd (Woodside) and Talisman Oil & Gas Pty Ltd (Talisman), with Woodside owning and operating the Northern Endeavour. Talisman was the sole titleholder of WA-18-L.

Based upon its own commercial and technical analysis, Woodside announced its intention to cease production from the Northern Endeavour in the second half of 2016 and move to decommissioning the fields soon afterwards.

NOGA was incorporated in August 2015, with a sole company director. The director felt that the region had potential for further oil and gas development, and believed that the LamCor fields could continue producing commercially. In September 2015 NOGA entered into a sales agreement (the LamCor Agreement) with then titleholders Woodside and Talisman which resulted in NOGA acquiring Talisman, and Talisman acquiring both the Northern Endeavour and Woodside's interest in the AC/L5 title. This facilitated NOGA's acquisition of 100 per cent of the assets and titles of AC/L5 and WA-18-L through its ownership of Talisman, which subsequently changed its name to TSOGA.

TSOGA intended to extend the life of the LamCor asset through a combination of operational efficiencies and incremental increases in production by in-fill drilling and future developments in the area. Upstream Production Solutions Pty Ltd (UPS) was contracted to be the operator and safety case holder for the Northern Endeavour.

A number of events over the next three years disrupted production, including malfunctioning subsea valves, hydrate formation, and the temporary closure of the helideck. The

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NOPSEMA's early assessment of how TSOGA and UPS were complying with their environmental and safety statutory requirements identified concerns about TSOGA's capability and capacity to respond to an oil spill, an obvious and fundamental titleholder responsibility. This led to formal enforcement three days after TSOGA became titleholder. Soon after, NOPSEMA undertook its first offshore UPS inspection to assess the appropriateness of its safety management systems. Corrosion risks were a focus of the inspections, acknowledging Woodside's expectations that the facility was coming to the end of its production life and the extensive corrosion present on the facility. UPS was unable to convince NOPSEMA that it had identified the baseline of the corrosion hazards on the facility, nor undertaken subsequent assessment, prioritisation and planning to address those risks. This was another fundamental matter.

There was a gradual ratcheting up of NOPSEMA inspection frequency and enforcement actions as NOPSEMA's concerns grew, specifically with regard to the quality of responses to inspectors' findings, missed deadlines for improvements, doubts about the availability of financial resources, and the consequences of the contractual relationships between TSOGA and UPS. In a little over three years NOPSEMA used the full breadth of its regulatory powers, with two Prohibition Notices, three Improvement Notices¹, four General Directions and four requests to revise permissioning documents. Numerous, less formal recommendations were raised and tracked at each inspection. NOPSEMA gradually lost confidence in the ability of the titleholder and the operator to fulfil their statutory obligations and resolve the identified concerns over the adequate safety and environmental management of the ageing Northern Endeavour facility.

NOPSEMA's concerns about the cumulative impact of all its individual concerns came to a head in 2019. An environmental inspection identified that TSOGA could not demonstrate sufficient financial assurance to cover its liabilities in the case of an oil spill, and this required prompt enforcement to resolve. There was concern about how the interface between TSOGA and UPS was working to collectively deliver the necessary safety standards on the Northern Endeavour. There were continuing issues with corrosion management which still had not been fully resolved since they were first raised in 2016, and two dangerous occurrences arising from corrosion occurred on the Northern Endeavour at the beginning of July.

As a result, NOPSEMA issued a Prohibition Notice on UPS on 10 July 2019 and a General Direction on TSOGA on 18 July 2020, enforcing the cessation of production on the Northern Endeavour until a range of long-standing, serious issues were resolved, particularly related to corrosion. NOPSEMA held meetings with UPS and TSOGA to fully explain the requirements of the Prohibition Notice and General Direction, and the work needed to consider them closed.

The loss of production until the Prohibition Notice and General Direction were resolved had serious implications for TSOGA's cash flows. The NOGA group was loss making and had not generated a net profit after tax for the past four consecutive financial years. NOGA had received a substantial injection of funding from Castleton Commodities Merchant Asia Co Pte Ltd (CCMA) in 2017, secured against the Northern Endeavour, the production licences and the oil inventories, but by July 2019 the funds from the CCMA revolving credit facility had been fully utilised. CCMA provided NOGA/TSOGA with a further finance facility in

¹ Two of these Improvement Notices were subsequently reviewed by the Fair Work Commission.

August 2019 to facilitate the costs of the necessary repairs required by NOPSEMA's enforcement actions.

NOPSEMA made a follow-up inspection of the Northern Endeavour over 10-13 September 2019. Although considerable progress had been made, there were still significant requirements to be completed, relating to both the Prohibition Notice and General Direction. The possibility of resuming production was at least 6 weeks off. On 18 September 2019, NOPSEMA endorsed the inspectors' recommendations not to lift either the Prohibition Notice or the General Direction for the time being. With that clear NOPSEMA decision, and with CCMA's additional funding having been fully utilised, TSOGA/NOGA went into voluntary administration two days later.

The NOGA group of companies had been significantly undercapitalised, and in the end had insufficient funds to meet its liabilities. However, the situation was more complex and reflects the fragility of NOGA's business model. It had taken over an ageing FPSO and with the LamCor fields approaching their end of life. The NOGA group had limited background in the offshore industry, and with no other income generating assets was significantly reliant on day-to-day production for cash flows. Ultimately, TSOGA lost the confidence of the regulator, NOPSEMA, who witnessed an increasing number of examples where the necessary high standards of maintaining an ageing asset such as the Northern Endeavour were not being reached. After NOPSEMA required production to cease until long-standing issues were dealt with, the NOGA group did not have sufficient financial reserves to resolve the accumulated issues before funding ran out.

NOPSEMA

My Review concluded that NOPSEMA is a robust, professional and independent regulator that had significant concerns right from the start of the change of operator/titleholder for the Northern Endeavour. As fears about the cumulative impact of the individual concerns increased, the decisions on the appropriate course of action to take were well informed.

My Review has identified some opportunities for improvement, though. NOPSEMA could benefit from more strategic planning of interventions at the facility and/or dutyholder level, whereby the priorities for the scope/type of inspection activities are regularly assessed and incorporated into a long-term plan. Different facilities and dutyholders ought to require different strategies for inspection. Consideration with regard to dutyholders' previous performance, the type and condition of facility, and company-related factors need to be identified in developing such plans. Strategic plans could provide an improved approach to help focus priorities, clarify objectives and manage resources. Such an approach may have helped NOPSEMA to bring its concerns over the Northern Endeavour to a conclusion somewhat earlier.

Another opportunity relates to NOPSEMA's practice around recommendations arising from inspections. While raising and tracking recommendations is an indication of a robust regulator, the sheer number and types of recommendations present the potential for the regulator, and not the operator/titleholder, to take over the agenda of the safety and environmental management. My discussions with industry tended to support my perception here. I recommend that NOPSEMA seeks wider stakeholder views on how it can best encourage strong titleholder/operator ownership and continuous improvement of this agenda. I also recommend that NOPSEMA review its inspection practices to identify the root causes of non-compliance, and not just the symptoms, and monitor dutyholders' corporate culture and compliance processes.

NOPTA

NOPTA had a number of opportunities during 2015-2019 to influence the change of titleholder to TSOGA, including responding to the LamCor agreement, advising the JA on the AC/L5 production licence renewal in 2018, registering dealings associated with the LamCor fields, and day-to-day monitoring of the Northern Endeavour facility performance. What NOPTA did, NOPTA did thoroughly. However, it was having to work under a number of legislative limitations which it considered prevented it from being able to fully consider, and influence, the ramifications of the change of titleholder. These limitations allowed TSOGA to become the titleholder for LamCor without, in my opinion, being subject to adequate scrutiny.

The experience of the Northern Endeavour has demonstrated that titleholder governance is a crucial issue worthy of NOPTA and JAs' oversight. Issues such as having an effective Board, clear division of responsibilities at the top of the company, appropriate involvement of non-executive Directors, rigorous business risk management, and transparency are all key issues against which companies should be benchmarked before approval of a transfer of title. Any uncertainty over NOPTA's powers to obtain financial, technical capacity and governance information about the titleholder throughout the life cycle of the title should also be resolved.

Decommissioning Liability

Australia's offshore petroleum regime has a number of checks and balances to ensure that titleholders decommission their assets at the end of field life and restore the environment. The events at the Northern Endeavour has shown, though, that the current situation is vulnerable. None of the regulatory controls anticipates the circumstances of a titleholder liquidation. This is a serious concern, as such events could be repeated as Australia's offshore industry matures and late-life assets are likely to be passed from established major oil companies to smaller, less-substantial titleholders.

My discussions indicated the adoption of "trailing liability", whereby a titleholder would be continually liable for the decommissioning and removal of its offshore assets even after selling its interests in a title, was receiving growing acceptance. It is a concept which could provide a final backstop for decommissioning liability and has been used in different jurisdictions. I therefore recommend that the DISER Decommissioning Framework Review consider such trailing liability provisions.

Trailing liability is only a backstop, though. In my opinion it is essential that current titleholders continue to have prime liability for decommissioning. Financial assurance of titleholders is required by S571 of the OPGGSA but the *de facto* interpretation limits this to extraordinary costs and liabilities arising from events such as a significant oil spill. This is regulated by NOPSEMA and works well. However, the issue of decommissioning liabilities is different. Decommissioning is an inevitable activity and will be planned years in advance. I do not consider that S571 of the OPGGSA, as currently drafted, is appropriate to regulate financing for decommissioning. I suggest NOPTA and the JAs are more appropriate to regulate this, rather than NOPSEMA. I recommend a stronger role for NOPTA and the JAs in assessing decommissioning plans and their funding, coupled with a new ability to require financial surety for decommissioning costs should NOPTA have concerns. I encourage such proposals to be further explored as part of the DISER Decommissioning Review.

Overlapping responsibilities of titleholders and operators.

When TSOGA took over as titleholder for the LamCor assets, it contracted UPS to be the operator and safety case holder for the Northern Endeavour. The normal practice in Australia is different, with titleholders (or other companies within the same group) becoming operators and safety case holders for their own facilities.

Under the OPGGSA and related regulations, titleholders and operators have different responsibilities for the health, safety and environmental control of a facility. Titleholders are responsible for detailed environmental protection and response requirements whereas the facility operator has the overarching duties to take “all reasonably practicable steps” to ensure the facility and all work carried on it are safe and without risk to health, and to work to an accepted Safety Case. My Review identified a number of issues where the split of responsibilities between TSOGA and UPS did not work well enough to ensure adequate standards on the facility and concludes that there is a gap in the legislation. To address this, one option would be to put a duty on a titleholder to ensure that, where it appoints a separate operator, that operator is capable of carrying out its duties under the OPGGSA. This would ensure, for instance, that contractual arrangements would provide sufficient financial and other resources for the operator to deliver its Safety Case commitments. A further duty on the titleholder could then be to take reasonable steps to ensure that its operator actually fulfils its OPGGSA duties, “linking” the titleholder to the performance of its operator and ensuring that the titleholder has to take an active role and interest in compliance on its facility. The current DISER Offshore Oil and Gas Safety Review provides an opportunity to consider this further.

Recommendations

Recommendation 1: *The DISER Decommissioning Framework Review should consider recommending trailing liability, whereby a titleholder would be continually liable for the decommissioning and removal of its offshore assets, even after selling its interests in a title on to a different titleholder. Further consideration should be given on whether such changes could be retrospective or only for new title changes, and whether the ability to claim PRRT credits for any decommissioning work in such circumstances is clear.*

Recommendation 2: *The DISER Decommissioning Framework Review should explore legislative changes or clarifications to enable NOPTA and the Joint Authorities to require titleholders to provide financial surety for their decommissioning liabilities, should NOPTA have concerns that the titleholder will not be in a position to meet such costs. Such sureties should be in a form that would be available to the Government in the case of the titleholder going into liquidation.*

Recommendation 3: *Regulatory concerns over the adequacy of legislation to allow NOPTA to have oversight of titleholder company level transactions, and to allow NOPTA to assess financial resource and technical qualification considerations before a title is transferred to an existing titleholder, should be resolved.*

Recommendation 4: *NOPTA's powers should be clarified (with changes to S699 of the OPGGSA if necessary) so that NOPTA can obtain financial and technical capacity information about the titleholder, and thus monitor titleholder financial performance and technical capacity, throughout the tenure of the title, including decommissioning. Titleholders should be made aware of any changes to NOPTA's current practises and expectations on this.*

Recommendation 5: *Consideration should be given to extending NOPTA's oversight to include the adequacy of titleholder corporate governance arrangements. In the meantime, NOPTA should consider updating the Offshore Petroleum Guideline: Transfer and Dealings Relating to Petroleum Titles to include an expanded section on titleholders' technical capacity and governance expectations.*

Recommendation 6: *NOPSEMA should consider developing its inspection planning processes to incorporate more formal, longer term planning of interventions at the facility and/or dutyholder level. Developing such plans could provide a more strategic approach to focus priorities, clarify objectives and manage resources.*

Recommendation 7: *NOPSEMA should review its inspection practices to ensure that sufficient focus is paid to identifying root causes of non-compliance and to monitoring dutyholders' corporate culture and compliance processes.*

Recommendation 8: *NOPSEMA should seek the views of offshore employer and employee representatives and other stakeholders over the effectiveness or otherwise of its current practices with respect to raising inspection recommendations in encouraging strong titleholder and operator ownership of the health, safety and environmental standards offshore and their continuous improvement.*

Recommendation 9: *The DISER Offshore Oil and Gas Safety Review should consider the benefits of creating legal duties on titleholders to ensure that, where a titleholder appoints a separate operator, that operator is capable of carrying out its duties under the OPGGSA, with*

a further requirement for the titleholder to then take reasonable steps to ensure that its operator actually fulfils its OPGGSA duties.

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1. Introduction

On 7 February 2020 the Australian Government was advised that the Northern Oil and Gas Australia (NOGA) group of companies had been placed into liquidation. One of the companies in the group, Timor Sea Oil & Gas Australia Pty Ltd (TSOGA), was the petroleum titleholder for the Laminaria and Corallina oil fields which are situated approximately 550 km offshore of Darwin. TSOGA owned the Northern Endeavour floating production storage and offtake facility (FPSO), which was operated by TSOGA's contractor Upstream Production Solutions Pty Ltd (UPS) to produce oil from the fields.

The Minister for Resources, Water and Northern Australia, the Hon Keith Pitt MP, described this as an unprecedented event in the offshore oil and gas industry in Australia. He pledged that the Government would do everything it needed to do to protect the safety and security of the Northern Endeavour FPSO to protect the environment and keep workers safe. The Commonwealth Government has taken control of the Northern Endeavour until a longer-term solution, which could include decommissioning, is agreed. During the drafting of this Review the Northern Endeavour was no longer producing hydrocarbons and remained in lighthouse mode under the management of a small crew.

Minister Pitt appointed me on 23 March 2020 to conduct a Review into the circumstances that led to this situation. He asked me to examine the roles and responsibilities and behaviours of the key stakeholders (the NOGA group, the National Offshore Petroleum Safety and Environmental Management Authority and the National Offshore Petroleum Titles Administrator and Joint Authorities) and to provide advice to the Government on possible areas for reform of the offshore oil and gas regulatory regime. The full terms of reference of my Review are at **Annex 1**.

In undertaking my Review, I have consulted widely. I thank all those who have contributed, both in discussions and in providing me with information. I appreciated their time and candour. My work was undertaken during the peak of the COVID 19 pandemic, with the inevitable limitations on face-to-face meetings, but nevertheless I feel that the "virtual" meeting arrangements were an adequate substitute.

I was ably supported in my work by a small taskforce from the Department of Industry, Science, Energy and Resources. Their work in supporting me has been invaluable and highly professional. However, I must stress that the views and analysis in this independent report are mine and mine alone.

2. Role, responsibilities and behaviour of the NOGA group of companies

This section examines the circumstances which caused the NOGA group of companies to collapse, and in particular the behaviour of the companies in the lead up to its entry into administration, answering the *Role, responsibilities and behaviour of NOGA* section of the terms of reference.

2.1 The NOGA group of companies

Northern Oil & Gas Australia Pty Ltd (NOGA) was incorporated as a company on 13 August 2015 and entered into voluntary administration on 20 September 2019. The structure of the NOGA group of companies at that time is outlined in Figure 1.

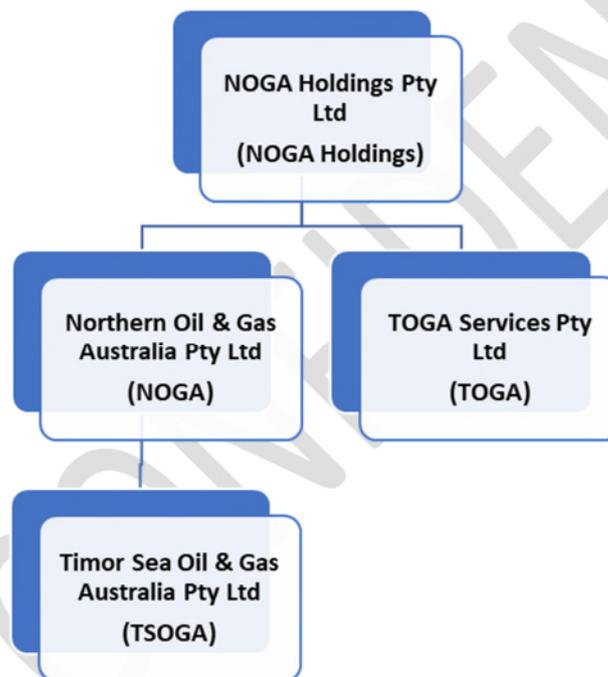


Figure 1: NOGA Group of companies

Source: Voluntary Administrators' report: Second creditor's meeting. KPMG. 23 January 2020, p6

Although NOGA Holdings is the parent company within the NOGA group it was not placed into voluntary administration. NOGA Holdings is a private company, and it is understood to have a sole directorship. There was a single sole director for each of the other three companies in the group, with NOGA being the employing entity (22 employees at the time of administration), TSOGA the title and asset holder, and TOGA being set up in 2018 in anticipation of taking over as operator on the Northern Endeavour FPSO (which subsequently did not take place). All three companies are now in liquidation.

2.2 The Laminaria and Corallina oil fields

NOGA's sole business was associated with the Laminaria and Corallina oil fields (LamCor), which are situated approximately 550 km offshore of Darwin. The fields lie within two Petroleum Production Licence areas, AC/L5 and WA-18-L in the Bonaparte Basin, and were discovered by Woodside Energy Ltd (Woodside) in 1994 and 1995.

The original production titleholders were Woodside/Shell/BHP for AC/L5 and BHP for WA-18-L². Production from both fields commenced on 7 November 1999, with Woodside operating the Northern Endeavour Floating Production, Storage and Offtake (FPSO) facility, coupled to wells via subsea infrastructure situated in the AC/L5 area³. The LamCor fields were originally estimated to contain 317 million standard barrels of oil (MMbbl), and peak production was 180,000 bbl/day. The Northern Endeavour had a storage capacity of 1.4 MMbbl.

Production reduced as the reservoirs were depleted, down to around 2 per cent of peak production rates by 2015. Woodside explained to me that it routinely completed reviews of the commercial life of the LamCor fields, analysing factors such as the anticipated continuing oil production from the reservoirs, forward oil price forecasting and an estimation of future costs of lifting the oil; especially large periodic costs as the facility aged, such as the class recertification for the Northern Endeavour and underwater/subsea inspections. These reviews also looked at extending the life of the fields, for instance by well workovers and drilling a new well in Laminaria South area. However, economically none of the options were supported by its analyses.

Based upon seismic data analysis Woodside considered that there were no further viable exploration opportunities in the AC/L5 licence area. Any potential prospects were either too small, too deep, or likely to be gas rather than oil (and therefore unsuitable for the Northern Endeavour). From these reviews, Woodside considered that the field would be uneconomical by the end of 2016 and planned for the end of field life accordingly. Woodside's annual report to NOPTA⁴ in March 2016 considered that the remaining proven and probable (2P) recoverable oil reserves from LamCor were 0.8 MMbbl, compared to the actual production of 1.5 MMbbl the previous year. The same report also gave a figure of 18.4 MMbbl of additional contingent recovery (2C) from LamCor, noting 2C figures are only estimates of reserves which, although considered *potentially* recoverable, are not considered *commercially* recoverable. As there is an inherent uncertainty in the estimation of subsurface volumes of oil and gas, 2C figures are acknowledged to be on the speculative end of the reservoir estimate spectrum.

In July 2015, Woodside commenced the formal decommissioning phase for LamCor, announcing that it was seeking environmental approval from NOPSEMA for its decommissioning proposals. Production had significantly reduced by this time to around 4,000 bbl/day, and Woodside intended to cease production in the second half of 2016 with the departure of the Northern Endeavour soon after.

NOGA was incorporated in 2015, with a sole company director with previous interests in onshore gas production. NOGA told me⁵ that it felt the Bonaparte Basin of the Timor Sea area still had significant underdeveloped resources and its strategy was to identify an underperforming asset and add value to extract the maximum economic return from the project. It commenced discussions with Woodside about acquiring the LamCor assets⁶.

² "Shell" refers to Shell Development (Australia) Proprietary Ltd, and "BHP" to BHP Petroleum (North West Shelf) Pty Ltd.

³ Three sub-sea drill centres with eight production wells and one gas injection well. By 2016 only four wells were producing.

⁴ "AC/L5 Annual Title Assessment Report 2016" - Woodside March 2016.

⁵ At its request, my discussions with NOGA/TSOGA were on a without prejudice basis.

⁶ Woodside explained that it progressed both the sale and decommissioning planning in parallel for over a year, until the sale was finalised. It felt it was prudent to continue progressing the decommissioning work

Although NOGA noted that Woodside considered there were no commercial reserves left, it believed this was incorrect: it felt that it could continue to commercially produce from the existing wells (3,000-4,000 bbl/day), by reinstating the Laminaria 5 well⁷ currently shut in (1,500 bbl/day) and by developing the Laminaria South prospect with another well (up to 20,000 bbl/day). NOGA also had longer-term ideas for utilising the Northern Endeavour FPSO as a regional hub for fields in neighbouring Timor-Leste waters such as the Kitan, Kuda Tash and Jahal fields. NOGA undertook a period of due diligence, including economic analysis, risk analysis, work by other subject matter experts, and two inspection visits to look at the physical conditions on the Northern Endeavour.

By September 2015, following several commercial title transactions over the years, the title interest in AC/L5 was shared by Woodside (66.7 per cent) and Talisman Oil & Gas Pty Ltd (Talisman) (33.3 per cent), with Talisman having a 100 per cent interest in WA-18-L. These parties developed the Laminaria–Corallina Sale agreement (the LamCor Agreement) which was executed on 29 September 2015 and subsequently approved by NOPTA (see *Section 4: Role, responsibilities and performance of NOPTA and Joint Authorities*). Under the terms of the LamCor Agreement:

- NOGA acquired Talisman (which was a subsidiary of REPSOL) by a 100 per cent share purchase.
- Talisman acquired Woodside's interest in the AC/L5 title and the related Unit Operating Agreement
- Talisman acquired the Northern Endeavour FPSO from Woodside.

This meant that NOGA acquired 100 per cent of the assets and titles of AC/L5 and WA-18-L through its ownership of Talisman, which subsequently changed its name to Timor Sea Oil & Gas Australia Pty Ltd (TSOGA) early in 2016.

Neither NOGA nor Woodside would divulge details of the financial arrangements of the LamCor sales agreement. In relation to decommissioning liabilities, Woodside confirmed that no specific payment was made, although the purchase price would have taken those liabilities into account. Woodside said that it had disclosed its own estimate of decommissioning costs to NOGA as part of the negotiation process. Woodside explained that it was typical in such agreements for the procuring company to acquire all of the seller's assets and liabilities for the ongoing operation (including the decommissioning liabilities), and for legal indemnity to be provided to the seller in respect of those.

Despite its change of ownership, Talisman retained its A\$326 million in Petroleum Resource Rent Tax (PRRT) credits which were attached to the company and asset. This is very significant, as PRRT credits can be claimed back against the costs of eventual decommissioning of facilities at the end of field life.

2.3 The condition of the Northern Endeavour and related subsea infrastructure facility in 2016.

In 2016, the Northern Endeavour could have been considered as a late-life asset. Its notional design life was 20 years, and by 2016 it had been on the LamCor field for 17 years.

whilst the sale negotiations were ongoing as there was always a level of uncertainty as to whether the transaction would be completed. Woodside noted that it was required to start the regulatory process with NOPSEMA to get the decommissioning approvals in motion, and also needed to publicly announce its potential plans regarding decommissioning for stakeholder transparency.

⁷ Lam 5 had been shut in by Woodside in 2012 after an unsuccessful well intervention to repair the well left a stuck wireline tool string.

Design life can be misleading, though, and just because an item of equipment is old, it does not necessarily mean that it is significantly deteriorating and unsafe. Take the analogy of a vintage car, lovingly maintained by an enthusiast in fully serviceable condition well past any date that the manufacturer could have anticipated. Such wonderful cars can still be safely driven, but their upkeep is time consuming, spare parts difficult and expensive to source, braking performance and emissions probably not meeting current standards, and different driving skills to modern cars are needed. An ageing offshore facility is similar:

“Ageing is not about how old your equipment is; it is about its condition, and how that is changing over time. Ageing is the effect whereby a component suffers some form of material deterioration and damage (usually, but not necessarily, associated with time in service) with an increasing likelihood of failure over the lifetime.”⁸

The ageing challenges for the Northern Endeavour appeared to be not so much on the topside specialist process equipment or the hull integrity, but more on corrosion issues associated with structural carbon steel interfaces, non-process plant and general fabric. Galvanic corrosion was highlighted. Woodside explained that it manages maintenance and planning activities to ensure safe operations at all stages of an asset’s life cycle, and in relation to the Northern Endeavour maintenance activities were still undertaken to meet regulatory obligations. However, this was being done in the context of an ageing asset that was being prepared for end of field life and decommissioning. Woodside made the point that it adopts a risk-based approach, to balance out how much to invest at that stage. Put another way, the amount of maintenance and investment would sensibly focus on what is essential for the asset to arrive at the cut-off decommissioning date in a legal, safe and effective condition, but not overinvest in an asset that was nearing the end of its economic life. The subsequent U-turn by TSOGA to life extend an ageing asset which had been preparing for end of economic life and decommissioning had significant implications.

2.4 The transition to TSOGA

As the sale of the LamCor assets progressed, NOGA contracted Upstream Production Solutions Pty Ltd (UPS) to be the facility operator. UPS had experience of operating another FPSO in Australian waters, as well as maintenance and operational support contracts onshore. This arrangement—of having a completely separate titleholder and operator—is very uncommon in Australia as historically the titleholder either chooses to be the registered operator of the asset itself (as was previously the case for the Northern Endeavour) or appoints the operator from within its own group of companies⁹. In this case, UPS was to become the Safety Case holder for the Northern Endeavour under a 3-year operations and maintenance contract, and UPS had its Safety Case for the Northern Endeavour accepted by NOPSEMA on 19 April 2016.

TSOGA became the formal titleholder for the LamCor on 16 May 2016, with a transitional service agreement with Woodside. However, NOPSEMA identified early evidence of concerns. As titleholder, TSOGA had specific responsibilities relating to environmental protection and oil spill response under the facility Environment Plan (EP)¹⁰, however TSOGA intended to simply rebadge the arrangements in the Woodside EP rather than developing its own version. Shortly after taking over as titleholder, TSOGA was directed by NOPSEMA to revise its EP, as NOPSEMA had indications that TSOGA lacked the resources, capability

⁸ RR823 “Managing Ageing Plant – A summary guide”. Health & Safety Executive UK.

⁹ There is only one other offshore production facility in Australia where the titleholder and the registered operator are different and unrelated in a corporate structure.

¹⁰ Part 2, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009

and capacity to manage the oil spill risks associated with the FPSO in the same manner as Woodside. A subsequent NOPSEMA environmental inspection in June 2016 identified further concerns: the transition agreement for Woodside to continue delivering the oil spill response arrangements for the Northern Endeavour was shortly due to lapse without TSOGA having equivalent oil spill arrangements in place. It is my understanding that the resultant reduction in response capability was driven in part by cost considerations. NOPSEMA resorted to issuing TSOGA with Direction 619 and Environment Prohibition Notice 620, requiring it to continue with the Woodside transitional arrangements. The Direction and Prohibition Notice were only resolved when TSOGA developed its own EP, which was approved by NOPSEMA nearly 6 months later.

Whilst the issues surrounding the EP were being resolved, UPS and Woodside were working together as part of the operator transition. UPS reported that this went well, with defined management of change processes and transition planning, although there were some technical difficulties in transferring Woodside's asset management data to UPS as the companies used different computerised asset management systems. After Woodside formally de-registered as the Northern Endeavour operator on 12 September 2016, there was a period of tandem working until UPS became the standalone operator in November 2016.

2.5 2017 onwards

The UPS contract with TSOGA for operations and maintenance on the Northern Endeavour was for a period of three years, and that included developing and implementing the facility Safety Case. As the holder of the Safety Case, UPS became responsible for delivering the full range of commitments in that Safety Case. However, it was not in control of the maintenance budgets and was operating in an environment which was strongly production oriented, seeking to reduce overall operating costs on an ageing asset.

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UPS stated that its contract morphed multiple times and with different approaches to the contractual relationship with TSOGA. For a time, this was along collaborative lines with an integrated UPS/TSOGA team developing and agreeing the engineering budgets for the facility. However, from 2018 onwards, the arrangements returned to a classic client–contractor relationship, where UPS would submit budgets under a Cost–Time–Resources (CTR) process for approval. Based on my discussions with UPS, it routinely received significantly less funding than was required to conduct the necessary work, in addition to delays for budget approval. s47G

UPS eventually developed a workaround s47G with Lloyd's Register, the classification society for the Northern Endeavour, however this was at the expense of considerable concern from NOPSEMA who issued two Improvement Notices¹².

Due to the regular staff turnover at TSOGA, UPS experienced difficulties establishing good working relationships and made mention of high level micro-management of day-to-day operational decisions. UPS expressed the view that TSOGA appeared to be insufficiently

¹¹ s47G

¹² UPS sought a review of these Improvement Notices 731 & 733 by the Fair Work Commission, and an amended tank inspection schedule was subsequently agreed between UPS and NOPSEMA.

capitalised to develop the asset and that production expenditure took precedence over fabric maintenance. Conversely, NOGA stated that it considered that UPS “massively overcharged” via the CTR system, and alleged that it did not have sufficient expertise to run the asset in a way that was needed to make a profit.

One key event appears to have soured relationships between TSOGA and UPS in late 2017. A visual inspection under UPS’s structural monitoring regime identified concerns about corrosion on an inaccessible part of the main structural beams supporting the helideck. The level of corrosion looked concerning to UPS, and in the absence of data relating to its condition during the previous structural inspection under Woodside, UPS was not able to establish an adequate benchmark to judge how significant this deterioration was. UPS took the precautionary decision to take the helideck out of use until this could be ascertained. Subsequently the beam was repaired and braced and the helideck recertified, and NOPSEMA supported UPS’s actions. However, this inevitably caused disruption to production on the FPSO, and NOGA was very critical of UPS’s decision. **s47G**

and TSOGA began to develop its plans to transition the Safety Case from UPS to TOGA (see *Section 3: Role, responsibilities and performance of NOPSEMA*).

There is little experience in Australia of the arrangement whereby an offshore titleholder contracts another completely separate party to be the facility operator and safety case holder. The differing responsibilities of those two entities require complex and effective interactions. For instance, TSOGA’s environmental stewardship responsibilities depending heavily on the UPS control of operations, and UPS’s obligations under the safety case relying on adequate funding and direction from the facility owner. The number of unimpressive examples of this interaction of responsibilities to achieve accepted levels of safety and environmental risk was surprising. For example:

- Only rudimentary KPI and audit information being used by TSOGA to monitor the major hazard and integrity achievements of its contractor UPS;
- Lack of information flows, with examples where TSOGA was seemingly unaware of some of the NOPSEMA enforcement and inspection findings for UPS, and UPS unsighted on maintenance budget discussions and how decisions were made; and
- Lack of coordination of maintenance work: TSOGA had its own maintenance contractors on board the Northern Endeavour, such as welding and painting crews, performing work outside UPS control and standards

With the limited time available for this Review I realise that I was only able to obtain a snapshot of the asset stewardship, but I saw more evidence of just a client–contractor production-oriented relationship rather than an integrated jointly held responsibility. Section 5 (*Examination of possible areas for reform of the offshore oil and gas regulatory regime*) expands on whether Australia’s legislation is fully adequate for such arrangements.

2.6 The business plan for LamCor fields

NOGA intended to extend the life of the LamCor asset **s47G**

¹³ Annual Title Assessment Report WA-18-L 2016

TSOGA and UPS did drive down costs, although there were a number of events over the next three years which disrupted production, including hydrate formation, issues with malfunctioning subsea valves, and the temporary closure of the helideck. However, by 2018 the asset was described to me as “humming”, with the TSOGA annual report to NOPTA (see *Section 4*) acknowledging a marked improvement in production operations, with throughput remaining roughly at the same levels as Woodside. The next improvement was to be the reinstatement of the Laminaria 5 well (Lam 5), which had been shut in since 2012 after an unsuccessful well intervention by Woodside some years previously. TSOGA had been planning this since 2017, as it considered that Lam 5 had the potential to increase the daily production by up to 40 per cent, but for a variety of reasons this work was deferred from 2018 to 2019 and was never actually realised.

Over and above this, the NOGA group was actively pursuing other, longer term developmental plans for the asset. s47G

However, such entrepreneurial ideas were, of course, dependent on appropriate funding.

2.7 Governance and regulatory compliance

The NOGA group of companies (NOGA/TSOGA/TOGA) had a single sole director. There was no independent Board of Directors for the NOGA group companies. I was advised that there was an advisory board of subject matter experts (tax, legal, and technical). The previous business venture had been onshore gas rather than offshore oil. Taking over an ageing offshore facility, with late-life fields previously deemed to be no longer economically viable, and adopting what for Australia is an uncommon production model of a contracted operator, would have been a challenging task.

TSOGA had clear regulatory obligations under environmental protection legislation administered by NOPSEMA, and in relation to its petroleum resource management title obligations administered by NOPTA. Sections 3 and 4 provide more information of TSOGA's interactions with the regulators. Unfortunately, immediately upon becoming the sole titleholder for AC/L5, TSOGA failed its first opportunity to reassure NOPSEMA that it was giving appropriate attention and resources to one of its key environmental responsibilities: oil spill response. NOPSEMA's initial environmental inspection identified significant concerns about TSOGA's capability and capacity to respond to an oil spill, and as such, NOPSEMA ended up taking enforcement action, issuing the Environment Prohibition Notice 620 and General Direction 619.

NOPSEMA's concerns with the facility continued to escalate, both with TSOGA as the titleholder and UPS as the operator, with fundamental doubts about whether the integrity and environmental aspects of the Northern Endeavour were being managed, or even appreciated. The regulator became aware of budgetary constraints on UPS which were influencing the safety and environmental compliance of the asset. A gradual loss of confidence by NOPSEMA in the ability of the TSOGA as titleholder and UPS as operator to manage the Northern Endeavour facility within its legal envelope was apparent. In addition, concern was evident about the cumulative consequences of the range and number of issues which NOPSEMA's inspectors were picking up at every inspection. This led to the final enforcement actions in July 2019 and the loss of production which exposed TSOGA's finances. In consultations, TSOGA was still questioning the exact circumstances of the

dropped object which was perceived as the final trigger for that enforcement. TSOGA's failure to fully appreciate NOPSEMA's frustration and concern about the lack of resolution of long identified major hazard issues which became the subjects of that final enforcement action was a significant concern.

2.8 Finances

The exact financial details of the sale of the Northern Endeavour FPSO by Woodside and the other commercial transactions in the LamCor agreement were not available to the Review, nor was the initial funding for TSOGA. That financial confidentiality is understandable. s47G

That substantial injection of funding was principally secured against the FPSO and the production licences¹⁵ and was provided in three parts:

1. A term loan for immediate funding
2. Revolving credit facility for working capital (repaid using the oil offtake proceeds)
3. Hedging to cover fluctuations in produced oil price

The NOGA group was continuing to explore additional investment from a number of parties for future asset plans well into 2019.

This Review has relied on the work done by KPMG¹⁶ as administrators and liquidators of the NOGA group of companies in looking at the financial health of TSOGA. The trading revenue obviously relied upon the sale of the produced crude oil, but the consolidated profit and loss statements showed the group was loss making and did not generate a net profit after tax for the past four consecutive financial years to December 2018¹⁷. Although 2018 showed a gross profit, a one-off hedging loss that year of US\$35 million led to a net loss after tax. KPMG identified that the Group's consolidated accounts recorded a negative working capital position from at least December 2017. UPS advised through discussions that it was continually accepting concessions on contractual payment terms from 2018 onwards. KPMG concluded that the companies in the NOGA group were significantly undercapitalised.

Analysis by KPMG showed that in 2019, the group had sufficient (but constantly reducing) funds, via the CCMA revolving credit facility to finance its outstanding liabilities until June 2019. KPMG concluded that, at that time, the group's financial position deteriorated due to increasing liabilities and the headroom under the revolving credit being fully utilised. This was exacerbated further after the Prohibition Notice 755 against UPS on 10 July 2019 (subsequently backed up by General Direction 753 against TSOGA on 18 July 2019) caused production to cease until significant remedial work had been completed. KPMG noted that the availability of the revolving credit facility was dependent on the quantity of oil in the cargo tanks and because production had ceased, the headroom under the revolving credit facility was not available after 10 July 2019¹⁸.

On or around 15 August 2019, a further financial facility was extended by CCMA to TSOGA. s47G

¹⁴ Castleton Commodities Merchant Asia Co Pte Ltd

¹⁵ See Section 4 in regards to the registration of these dealings with NOPTA.

¹⁶ Statutory Report by Liquidators 7 May 2020. KPMG's liquidation process continues.

¹⁷ KPMG Voluntary Administrators' Report 23 January 2020 and Statutory Report by Liquidators 7 May 2020. KPMG's liquidation process continues.

¹⁸ KPMG noted an offtake of oil from the Northern Endeavour was subsequently conducted in August 2019 and net proceeds of approximately AU\$50m were applied in reduction of the RCF.

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With the CCMA additional funds being fully utilised the NOGA group of companies was then unable to satisfy its outstanding liabilities, and entered into voluntary administration shortly afterwards.

KPMG is of the opinion that the NOGA group of companies became insolvent from 10 July 2019 (the date Prohibition Notice 755 was issued) and continued to remain insolvent up to its entering voluntary administration on 20 September 2019. It is important to point out that KPMG also clearly states that it believes that the “safe harbour” defence could be relied upon for any potential insolvent trading claim.

2.9 Decommissioning Liabilities

Decommissioning can be a major cost of any offshore oil and gas operation, undertaken at the end of commercial exploitation and with significant environmental implications. TSOGA's decommissioning liability for LamCor and the Northern Endeavour asset is an issue which is relevant to this Review, even though the liquidation of the NOGA group has made it rather academic.

When NOGA took over Talisman and assumed, through the LamCor Agreement, the full title of AC/L5 and WA-18-L, it became liable via TSOGA for the decommissioning liabilities of the asset at the end of the field life. NOGA was aware of Woodside's estimates for the eventual decommissioning. This would involve the FPSO being disconnected and taken off station (for redeployment, sale or break-up), with the expectation from NOPSEMA that the wells would be permanently “plugged and abandoned” (P&A), and all subsea infrastructure such as seabed templates, piping and risers removed¹⁹.

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TSOGA accounts showed an estimate of this non-current financial liability. From the discussions undertaken, there appear to be significant weaknesses in how these liabilities were being addressed by TSOGA. These include: -

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- Significant reliance was placed on the value of the Northern Endeavour FPSO to cover TSOGA's eventual decommissioning costs. TSOGA's accounts show that the initial valuation of the FPSO in 2016 was significantly increased in 2017 following a new base valuation. However, such “going concern” valuations must be treated with

¹⁹ A titleholder may propose decommissioning options other than the complete removal of infrastructure, such as leaving some infrastructure which can then act as an artificial reef to benefit marine life, but the proposed option must deliver equal or better well integrity and environmental outcomes.

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caution if they are being relied on for future decommissioning cover. The Northern Endeavour would continue to age and would be over 30 years old at decommissioning according to some of TSOGA's EOFL scenarios, and the price for FPSOs is very dependent on market environment at the time of disposal (as so evidenced by the current coronavirus turmoil for the offshore industry). The Northern Endeavour was also mortgaged to CCMA.

- Any confidence that the company's future cash position at EOFL would be able to fund decommissioning costs have to be tempered by the cold fact that the group did not make a net profit after tax for the four consecutive financial years to December 2018.
- LamCor was the sole business of the NOGA group, so there were no opportunities for inter-group funding from other more profitable ventures.

It is difficult to see how TSOGA would have been able to meet its liabilities for any decommissioning in the short term, and it would have needed to be in a substantially better financial position to meet them in the longer term.

2.10 Conclusions with regard to the NOGA group

In looking at the circumstances which caused the NOGA group of companies to collapse, the simple answer is that provided by KPMG in its Voluntary Administration and Liquidator reports: *the NOGA group was loss making since it started, was significantly undercapitalised, and in the end had insufficient funds to meet its liabilities.*

However, the factors which were the root cause of the NOGA group administration are more complex and reflect on the fragility of its business model. The Northern Endeavour was an ageing FPSO and had been anticipating decommissioning, and the LamCor fields had been assessed by Woodside as just about at the limits of commercial viability. These assets were then transferred from a well-resourced and experienced offshore energy specialist to a small, privately owned business, with no background in the offshore industry and a wish to adopt different operating models. With no other income generating assets, there was significant reliance on day-to-day production for cash flows. This was always going to be a challenge, even for an energetic company with a belief that it provided a commercial opportunity. Efficiency improvements and cost reductions were made, yet the facility suffered strained contractual relationships and a number of production disruptions for technical, operational and regulatory conformance reasons.

Under Australia's goal setting offshore safety and environmental legislation, ageing assets can be managed well into extended late-life. However, this relies upon the operator and owner having a detailed knowledge of the condition of the whole asset, the consequences of any shortfalls (whether from its actual physical conditions or from other layers of protection such as overdue safety critical maintenance and inspection), a systematic approach to identify remaining risks, and then an effective, rigorous and consistent approach to managing them. As the asset gets older those challenges increase with complex interactions.

In the end, TSOGA lost the confidence of the regulator, NOPSEMA, who was not seeing a demonstration or methodical approach to these issues being adopted on the Northern Endeavour. Instead, NOPSEMA was witnessing an increasing number of examples where the necessary high standards of maintaining an ageing asset such as the Northern Endeavour were not being reached. The NOGA group did not have sufficient financial reserves to resolve these accumulated issues before funding ran out.

3. Role, responsibilities and performance of NOPSEMA

This section examines how NOPSEMA performed its functions and exercised its powers in relation to the NOGA group of companies, the petroleum titles, the Northern Endeavour facility and the Laminaria–Corallina Project. It answers the section titled *Role, responsibilities and performance of NOPSEMA* in the terms of reference.

3.1 NOPSEMA's roles and responsibilities

NOPSEMA is Australia's independent national regulator for health & safety, well integrity and environmental management of offshore petroleum activities. Details of NOPSEMA's functions and governance arrangements are summarised on its website.

3.2 Regulation of the Northern Endeavour 1999 – 2016 (Woodside)

When production started from the LamCor license blocks in 1999, the regulator responsible for the Northern Endeavour was the Northern Territory government. In 2005 that role was passed to NOPSA (NOPSEMA's predecessor) and then in 2012 to NOPSEMA, with an expanded regulatory remit covering both safety and environmental issues.

Woodside was the operator of the Northern Endeavour FPSO and the lead titleholder for AC/L5. Corrosion management of the facility as it aged was, unsurprisingly, essential in maintaining the FPSO's overall integrity for Woodside. It was also a focus for NOPSEMA's inspections. Although NOPSEMA raised issues relating to corrosion on the FPSO, including two focused Prohibition Notices in 2013, it reported that Woodside was responsive to those concerns and acted quickly to resolve them. Corrosion remained an issue as Woodside managed the facility towards the end of field life.

In July 2015, Woodside notified NOPSEMA of its intention to start the decommissioning process for the Northern Endeavour and its infrastructure. Production was expected to cease in the second half of 2016, following which the FPSO would be disconnected and depart, connecting infrastructure flushed of hydrocarbons, and the wells plugged and abandoned at a later date. These activities would require the submission of a Decommissioning Environmental Plan to NOPSEMA, who provided Woodside with advice on the requirements. During the rest of 2015, NOPSEMA's oversight of the facility was on the basis that it was preparing for imminent decommissioning.

3.3 Regulation of the Northern Endeavour 2016-2018 (TSOGA & UPS).

The LamCor Agreement (see Section 2), with its subsequent transfer of titles and ownership of the Northern Endeavour facility to TSOGA instead of cessation of production and decommissioning, was described by NOPSEMA as coming "out of the blue". NOPSEMA was aware that TSOGA's new parent company NOGA had no prior experience in offshore oil and gas.

Normally titleholders are the facility operator themselves, reflecting their obvious financial interest in the facility, or they appoint an operator from the same corporate group. The arrangement whereby an unrelated company, in this case UPS, was contracted to be the formal operator and Safety Case holder of the Northern Endeavour on TSOGA's behalf was very uncommon in Australia²¹. UPS would run the Northern Endeavour facility and be

²¹ There is only one other offshore production facility in Australia where the titleholder and the registered operator are different and are unrelated in a corporate structure.

responsible for delivering the commitments in the Safety Case²² whilst depending on funding from TSOGA to do so.

The LamCor agreement therefore resulted in NOPSEMA regulating two different bodies with respect of the Northern Endeavour, whose respective roles are defined in the OPGGSA:

- i. TSOGA, as titleholder, was responsible for the safe design, construction and operation of the wells, including the preparation of (and compliance with) a suitable Well Operation Management Plan (WOMP) which had to be accepted by NOPSEMA. TSOGA was also responsible for ensuring environmental protection and oil spill response, primarily through the requirement to prepare and follow an appropriate Environmental Plan (EP), again which had to be accepted by NOPSEMA
- ii. UPS, as operator, had the responsibilities to take all reasonably practicable steps to ensure that the facility was safe and without risks to health, and had to prepare a facility Safety Case for acceptance by NOPSEMA and then follow it.

In looking at how NOPSEMA “performed its functions and exercised its powers” during TSOGA’s period as titleholder, the Review has drawn heavily upon the specific NOPSEMA inspection reports and a variety of supporting documents, policies and correspondence, as well as discussions with NOPSEMA, UPS and NOGA/TSOGA.

NOPSEMA’s regulatory activities consist primarily of inspection, investigation, approvals (for instance of Safety Cases and Environment Plans) and enforcement activities. NOPSEMA has a mature range of policies and processes associated with these activities. Although Talisman’s change of ownership (and its subsequent change of name to TSOGA) *per se* did not require a regulatory response by NOPSEMA, its assumption of the full title for AC/L5 and the change of operatorship from Woodside to UPS did. UPS needed an accepted Safety Case in preparation for becoming the operator, and although its initial version was rejected by NOPSEMA (not in itself unusual, as Safety Cases are detailed documents and often require a number of iterations to gain the regulator’s approval), it was eventually accepted by NOPSEMA on 19 April 2016. Woodside remained as the operator, but this Safety Case acceptance enabled UPS to take over from Woodside later in the year.

NOPSEMA’s inspection policy specifies at least two occupational health and safety inspections and one environmental inspection per year for an FPSO like the Northern Endeavour. Although the exact scope of such inspections is left to the relevant NOPSEMA “focal point” inspector, the expectation is that they will be risk based and will sample a range of major hazard event controls over a five-year period²³. Internal operating guidance also provides a number of coordinated “topics” which can be selected in any particular year.

TSOGA formally became the sole titleholder for AC/L5 on 16 May 2017, and a NOPSEMA environmental inspection was carried out shortly afterwards²⁴. This was an obvious priority, as a new titleholder’s ability to respond to an environmental incident is crucial. However, NOPSEMA’s first inspection of TSOGA’s environmental responsibilities identified significant concerns about TSOGA’s capability and capacity to respond to an oil spill. Although TSOGA had previously indicated that it would operate under the existing Woodside Environment Plan (EP), the inspection identified that TSOGA was intending to depart from the terms of that EP. As a result, NOPSEMA took enforcement action by way of General Direction 619

²² The Safety Case identifies the hazards and risks on the facility, explains how those risks are to be controlled, and describes the safety management system which is in place.

²³ Regulation 2.32 of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 requires operators to re-submit their Safety Case to NOPSEMA every five years.

²⁴ This was before Woodside had deregistered as the Northern Endeavour operator.

and Prohibition Notice 620 to ensure that TSOGA continued to operate under the pre-existing EP arrangements until its own plans had been formally accepted by NOPSEMA. This happened on 12 December 2016. Such a failure to properly address this obvious and fundamental titleholder responsibility would have been the first issue which led to NOPSEMA's growing reservations about TSOGA's ability to deliver its obligations.

UPS formally took over as the Northern Endeavour operator on 12 September 2016, and the following month NOPSEMA undertook its first offshore UPS occupational health and safety inspection under that new regime. The scope of the inspection followed a standard format (similar to those previously undertaken when Woodside were operating the facility), namely progressing recommendations which had arisen from previous inspections, consulting with the workforce, following up relevant incidents, and some specific topics. In this case the specific topic was Maintenance Management, chosen from a list in NOPSEMA's Annual operating plan for that year. It was a very appropriate topic to select for this first UPS inspection, given evidence from prior inspections of extensive corrosion at the facility. The goal was to "assess whether the safety management systems with respect to topsides corrosion were appropriate for the risks faced at the facility, to gain an appreciation for the current state of the facility and identify any obvious deficiencies"²⁵.

The inspection noted that extensive corrosion was present throughout the facility, a legacy of the previous Woodside expectations that the facility was coming to the end of its production life. Although there was a Corrosion Management Plan associated with the UPS Safety Case (revising a similar document from Woodside), the amount of detail on fabric related corrosion was small²⁶. The inspectors were not able to identify a report which described the current state of corrosion on the Northern Endeavour in quantifiable terms or which assessed the safety risk associated with that corrosion.

NOPSEMA inspectors use a range of influencing and enforcement options, from verbal warnings (where a breach of legislation is considered minor and can be rectified quickly and easily) right up to issuing a Prohibition Notice (where there is a serious and imminent health and safety risk) or even prosecution (following a serious breach of legislation). As a result of this inspection, NOPSEMA made 16 recommendations to UPS, recommendations being at the low end of NOPSEMA's range of possible enforcement actions. NOPSEMA do not consider that number of recommendations arising from a single inspection as particularly unusual. Eight of the recommendations were directly related to corrosion management issues, and of particular relevance to this report was:

Recommendation 1489-10: UPS to ensure that a risk assessment of corrosion at the facility is completed which:

- *identifies corrosion related hazards at the facility;*
- *assesses those risks (including ranking and prioritisation); and*
- *describes a plan for inspection, monitoring and addressing corrosion hazards in order to reduce corrosion risks to ALARP [as low as reasonably practicable], including outstanding corrective work orders.*

This is a key recommendation, given that UPS and TSOGA had just taken over an ageing asset which had been due for decommissioning and clearly had corrosion problems. UPS was unable to convince the regulator that it had identified the baseline of the corrosion

²⁵ NOPSMA Planned Inspection Report 1489.

²⁶ "For common, generic items (for example walkways), visual examination is carried out routinely with visual examination augmented by wall thickness measurement, as appropriate, if early signs of degradation are found": Section 4.1. Northern Endeavour Corrosion Management Plan No. 26/MN/INT/PL01 (Revision 1)

hazards on the facility it was responsible for, nor undertaken subsequent assessment, prioritisation and planning to address those risks. This was a fundamental matter.

A key part of NOPSEMA's regulatory process is the raising of recommendations with the operator, agreeing completion dates, and then tracking them to completion in subsequent inspections. This first offshore inspection of the Northern Endeavour under UPS inspection also carried forward 21 outstanding recommendations which had been raised during Woodside's operatorship, including:

Recommendation 1489 -24 (previously Woodside 1175-17): Ensure that all sections of damaged main deck aqueous film forming foam (AFFF) piping are permanently repaired and fit for purpose.

This "open" recommendation had a due date for completion of 31 October 2016, but had still not been actioned. Its importance is that it was still outstanding nearly 3 years later.

The follow-up UPS offshore inspection was carried out in April 2017. Over the next three years, there were some 17 further inspections associated with this facility, looking across the range of environmental, health and safety, and well integrity issues, until TSOGA entered administration in 20 September 2019. This Review principally focuses on NOPSEMA's regulation of the maintenance and corrosion challenges of this aging asset. A more detailed inspection narrative, based on NOPSEMA records, is at **Annex 2**.

The scope of NOPSEMA's inspections of UPS on the Northern Endeavour continued to follow the format of progressing previous recommendations, consulting with the workforce, following up relevant incidents, and sampling specific aspects of UPS's major hazard management performance chosen on an annual basis. Relationships with UPS remained constructive, but discussions with NOPSEMA and the various inspection reports showed that NOPSEMA had growing concerns over the asset integrity conditions on the Northern Endeavour. Inspections continued yielding lists of recommendations related to unsatisfactory aspects of compliance. NOPSEMA inspectors considered that the overall condition of this ageing facility was still degrading, with UPS struggling to provide sufficient detailed evidence to show that it was making the necessary detailed improvements in response to the growing number of recommendations relating to its control and management of the major hazard risks on the facility.

A review of UPS's response to closing out Recommendation 1489-10 (see above), requiring assessment of the corrosion hazard risks, is illustrative of why NOPSEMA gradually lost confidence in the ability of UPS and TSOGA to deliver acceptable standards on the Northern Endeavour. This crucial recommendation had originally been agreed for completion by the end of March 2017, but the completion date was then extended by 6 months (to September 2017) as UPS intended that a proposed Northern Endeavour Corrosion Management Plan would meet the recommendation. As that new deadline approached, NOPSEMA was aware of some progress, but UPS requested that the due date be extended by another month (to October 2017). A subsequent meeting on November 2017, though, still showed a lack of conclusion to this recommendation. In January 2018 it was still considered "open", as a fully documented report listing all known corrosion risks with ranking and prioritisation was not available, although the inspectors sighted partial evidence of work having been done. UPS finally provided a "Northern Endeavour Corrosion remediation" report in February 2018, which described the result of the risk identification, assessment and plans to mitigate the corrosion risks to deliver NOPSEMA's recommendation. Yet even this report, some 16 months after this crucial issue was raised, was not considered by NOPSEMA as meeting the full requirements of the original recommendation: it felt the report

was confusing in how it assessed levels of risk (and hence prioritised remedial actions) and did not appear to give rise to clear plans (i.e. scheduling and allocation of resources) to ensure that remediation activities would be completed in a reasonable time frame with adequate resources being allocated. NOPSEMA therefore continued to hold concerns that this crucial part of the maintenance of the integrity of the facility was not being sufficiently or effectively managed to a risk-based plan nor resourced to the level expected for a major hazard environment. That is not to say that UPS had not done anything about the structural and fabric corrosion by this time, as inspectors acknowledged in July 2018 that conditions were improving with general fabric maintenance and multiple instances of corrosion repairs to piping and structures evident. However, Recommendation 1489-10 was still reported as “open” in April 2019.

It is debatable whether NOPSEMA ought to have considered more formal enforcement action over these fundamental corrosion management concerns during 2018. At that time, NOPSMA became aware that there were issues between UPS and TSOGA about the provision of adequate funds for maintenance work (see *Section 2*), and the continuing issues of corrosion assessment and remediation was a key issue which led to the UPS Prohibition Notice 755 in July 2019. However, NOPSEMA was escalating its enforcement profile with both UPS and TSOGA in 2018 in other related areas, with two Improvement Notices on UPS in relation to overdue integrity inspections of the FPSO cargo tanks²⁷ and an Environmental Improvement Notice on TSOGA because of a reduction in the resource capacity to coordinate and manage the response in the event of an oil spill.

By the end of 2018 NOPSEMA’s Compliance Committee²⁸ was also being regularly briefed about UPS/TSOGA, with the safety, integrity and environmental management of the Northern Endeavour becoming a formal Key Compliance Issue (KCI) requiring updates at every meeting.

3.4 Regulation of the Northern Endeavour 2019 (TSOGA & UPS).

NOPSEMA strategically ramped up its inspection activities at the start of 2019 due to its increasing concerns with TSOGA/UPS, with three inspections during Q1 2019 covering different legislative responsibilities.

Informed by its growing concern around TSOGA’s financial capabilities, NOPSEMA undertook an inspection in February 2019 of TSOGA’s maintenance of financial assurance in the event of an oil spill. This is a fundamental responsibility for titleholders, as in the event of a major oil spill they will need to immediately fund their pollution response activities, including securing an array of specialist contractors, and be able to meet potentially substantial liabilities. The conclusion of that inspection was not good: TSOGA was unable to demonstrate that it had sufficient financial arrangements to cover, within the timeframes necessary, the costs, expenses and liabilities of such an event. NOPSEMA resorted to Direction 574 against TSOGA, requiring this to be urgently resolved, and considerable work had to be undertaken by TSOGA before NOPSEMA was satisfied that adequate forms of financial assurance were, in fact, in place. Although this assurance enabled the Direction 574 to be complied with, this was yet another contribution towards NOPSEMA’s growing concerns about the Northern Endeavour’s operations.

²⁷ UPS sought a review of these Improvement Notices 731 & 733 by the Fair Work Commission, and an amended tank inspection schedule was subsequently agreed between UPS and NOPSEMA.

²⁸ The Compliance Committee consists of NOPSEMA’s senior executives, and is an oversight forum where imminent enforcement actions are reviewed and compliance strategies discussed.

NOPSEMA also undertook an inspection in February of how TSOGA, as titleholder/owner of the Northern Endeavour, was managing UPS as its contractor and facility operator. This explored the interface between TSOGA and UPS, and the results of this inspection showed a lack of effective monitoring by TSOGA of UPS's compliance with the Northern Endeavour Safety Case obligations. Although TSOGA was aware of the corrosion issues on the facility, the inspectors concluded that it was not taking a sufficiently active role in addressing them, and the inspection highlighted significant confusion of roles between TSOGA and UPS with respect to corrosion²⁹. This was the first time that NOPSEMA had formally inspected such issues for the Northern Endeavour facility, even though they were arguably central to the continuing concerns there. However, the adequacy of the existing regulatory requirements on titleholders in relation to their facility operators is not certain, which constrained NOPSEMA's regulatory options on this topic. The issue is further discussed in Section 5 (Examination of possible area for reform of the offshore oil and gas regulatory regime).

The third NOPSEMA intervention in Q1 2019 was an offshore inspection in March of the Northern Endeavour, focusing on asset management issues. It had an ambitious scope including verification of commitments to corrosion-related recommendations from previous inspections, ascertaining how safety critical equipment was being inspected, maintained and repaired (IMR), and exploring how UPS benchmarked against industry good practice on managing ageing and life extension (ALE)³⁰. Key findings from this inspection included:

- Although the inspectors found that significant progress had been made towards general fabric maintenance, they still did not find sufficient evidence that UPS had done enough to comply with the long-outstanding Recommendation 1489-10 on corrosion risk identification/assessment/resolution. The inspectors stressed that there was still substantial structural corrosion at the facility.
- The inspection found evidence that UPS's technical integrity assurance of overdue safety-critical IMR tasks was not effective: a backlog report showed that a significant number of these tasks, 118, were past their last allowable completion date, with almost 70 per cent still awaiting a risk assessment of the consequences and an approval of the IMR deferral.
- The inspectors found no proactive strategy for ALE activities, and concluded that there was minimal evidence of planning or preparation for the ageing and life extension of the facility.

Overall, this inspection generated 21 recommendations, with 32 recommendations from previous inspections still outstanding and overdue for closure.

By this time, there was a further significant issue which NOPSEMA had to address. UPS's three-year contract with TSOGA to be the operator and Safety Case holder for the Northern Endeavour would come to an end on 15 May 2019. TSOGA declined to extend the period, and its intention had been to bring the operatorship and Safety Case "in house". TOGA Services Pty Ltd (TOGA), a separate company within the NOGA Group, was established in 2018 and on 15 April submitted its own Safety Case for the Northern Endeavour to allow the transfer to happen. However, NOPSEMA rejected this initial TOGA Safety Case on 30 May 2019 as it was not impressed by the quality of the document overall, and considered it had been hastily put together and was far from acceptable in addressing key issues such as of corrosion management and ageing and life extension. What should have been an

²⁹ See Annex 2 for details of the March 2019 offshore inspection which illustrates how this confusion was manifesting itself in practice.

³⁰ The NOPSEMA inspectors selected the Oil & Gas UK industry guidelines "Guidance on the Management of Ageing and Life Extension for UKCS Oil & Gas Installations: April 2012" as the benchmark.

orderly and measured transfer of operatorship by the titleholder TSOGA was being further destabilised as UPS now had significant financial contractual issues with TSOGA and was liable to shortly terminate its contract and deregister as the Northern Endeavour operator (as was its right). The safety and environmental consequences of the Northern Endeavour being without an effective and legal operator were significant so NOPSEMA had to step in urgently to address this situation by issuing General Direction 741 on the titleholder TSOGA requiring it to, in effect, commit to retaining UPS until a new operator and Safety Case were in place.

It was clear by the spring of 2019³¹ that NOPSEMA's concerns about the safe management of the Northern Endeavour were coming to a head. NOPSEMA's Compliance Committee discussed options for further enforcement, taking into account of the findings of the March 2019 inspection; multiple improvement notices were considered justified using the NOPSEMA Enforcement Management Model. Other issues were also becoming apparent³², and there was a wider consideration about the cumulative impact of all the outstanding issues in this ageing major hazard environment. The uncertainties arising from the deterioration of the working relationships between UPS and TSOGA/NOGA as the UPS contract came to an end, and the apparent lack of resources and commitment to resolve the host of integrity issues, were strong factors.

This culminated in full discussions at the NOPSEMA Compliance Committee on 26 June 2019³³, which considered a range of enforcement options including shutting down production on the Northern Endeavour until substantial improvements had been achieved. It was acknowledged that such action could affect the viability of TSOGA/NOGA and that there was a risk that TSOGA may not have the financial capability for future decommissioning of the infrastructure. Nevertheless, the Committee decided that the way forward was to develop proposals for a combination of Improvement Notices for UPS and a General Direction on NOGA to cease production.

3.5 Prohibition Notice 755 and General Direction 753

However, before those proposals could be fully actioned, NOPSEMA received two separate reports of dangerous occurrences on the Northern Endeavour on 1 and 4 July 2019. The first, more serious, incident involved a substantial pipe support falling 5.9 m to the deck due to severe corrosion, and the second involved a corroded pipe support bracket being dislodged during blasting operations. An immediate onshore NOPSEMA investigation on 8 July 2019³⁴ concluded that these incidents were a result of the current degraded conditions on the facility and, whilst not causing any direct injury or loss of containment themselves, provided evidence of immediate threats to health and safety arising from the corrosion on the facility due to the risk of dropped objects, loss of containment from pipe support failures and wider potential loss of structural integrity.

The inspectors applied NOPSEMA's EMM process and determined that a Prohibition Notice was warranted. After discussion at the NOPSEMA Compliance Committee the following day, Prohibition Notice 755 was issued against UPS on 10 July 2019, requiring the cessation of

³¹ This footnote added by the Department of Industry, Science, Energy and Resources. Mr Walker was undertaking the Review from the Northern Hemisphere and is referring to the period March–June 2019.

³² Including the substantiation, on 13 June, of the majority of anonymous safety concerns from a member of the offshore workforce at the Northern Endeavour alleging “major gaps in core crew training and competencies”.

³³ Discussion Paper: Northern Endeavour Compliance Strategy – Compliance Issue Overview.

³⁴ NOPSEMA OHS Inspection Report 2040

hydrocarbon production on the Northern Endeavour because of an immediate threat to health and safety. To comply, the terms of the Prohibition Notice required UPS to:

- (a) depressurise and eliminate hydrocarbon inventory on the topsides that could lead to a hydrocarbon loss of containment in the event of structural failure; and
- (b) conduct a survey of all topsides structures where a failure could lead to a fatality or a major accident event (MAE) should a structural failure occur. For each defect, an assessment should be completed, using the standards identified in the safety case (i.e. ISO 19901 and 19902), to determine whether the safety risk associated with a structural failure is as low as reasonably practicable (ALARP); and
- (c) for those defects where the safety risk cannot be demonstrated to be ALARP, rectification of the structure shall be completed to ensure that safety risks, associated with structural corrosion, are ALARP; and
- (d) cease all non-essential activities and implement controlled personnel access to areas identified by UPS as having a high risk of injury or a fatality, due to a potential dropped object, until such time as the above assessments and rectifications have been completed to the satisfaction of the safety authority.

Just over a week later, on 18 July, a separate Direction 753 was issued to TSOGA. This was considered as a back-up to the Prohibition Notice on UPS but the scope of this Direction was wider (and also overlapped). It required TSOGA not to restart production at the Northern Endeavour until it had been demonstrated “to NOPSEMA’s satisfaction” that:

- (a) any backlog of technical integrity work orders in the computerised maintenance management system (CMMS) for the facility:
 - (i) at the time of re-introduction of produced hydrocarbons has been either cleared by completing the work orders; or
 - (ii) for items not completed, that they have been deferred though an individually justified risk assessment and associated mitigating actions that will reduce the risk to a level that is As Low As Reasonably Practicable (ALARP); and
- (b) The management systems in use at the facility can be demonstrated to be effective in ensuring that technical integrity work orders are completed prior to the last allowable completion date; and
- (c) The fixed fire suppression system is fit for its function and use and will meet its original design standards in the event of an emergency through the permanent repair of the aqueous film forming foam (AFFF) system; and
- (d) Structural corrosion of the following systems at the facility has been repaired to the standards described in the facility safety case:
 - (i) Central walkway; and
 - (ii) Cargo piping; and
 - (iii) Main pipe rack.

NOPSEMA held meetings with TSOGA and UPS on 24 and 25 July 2019 to fully explain the requirements of the Prohibition Notice and General Direction, and to detail a “roadmap” of actions that would be needed for NOPSEMA to consider them closed³⁵.

NOPSEMA made a follow-up offshore inspection 10-13 September 2019³⁶, two months after the issuing of the Prohibition Notice, to assess progress of work to achieve compliance. Although some remediation work for potential dropped objects was evident, the inspectors considered that UPS had provided “no evidence that the assessment and rectification

³⁵ Northern Endeavour NOGA Facility – Enforcement Verification Plan 25 July 2019 PowerPoint presentation.

³⁶ NOPSEMA OHS Inspection Report 2043

components of the Prohibition Notice had been completed". In coming to this conclusion, the inspectors referenced, amongst other things, the Veritech potential dropped object (PDO) and visual survey report, which contained multiple areas that required further inspection or structural assessment, and the fact that 40 per cent of the identified high or very high risk PDOs had yet to be remedied. In discussions, UPS acknowledged that at the time of this inspection it considered it was still "5-6 weeks away from completing this work".

Regarding the somewhat overlapping requirements of the General Direction, there had been a mixed response. The inspectors were satisfied with the independent audit of the CMMS by DNV-GL as part of the TSOGA's response and they also acknowledged that the cargo header repairs had been completed, the Port/Starboard pipe racks repairs were substantially completed, as was a 20 metre section of the Central Walkway. However, they still had concerns about the quality of those repairs and the work to complete the rest of the Central Walkway, and the completion date of the permanent repairs to the AFFF system was still 6 weeks away. A sample of deferrals within the CMMS (another facet of the Direction) verified the process but again inspectors were unable to accept the deferral assessment of one of the items. Overall, the inspectors could not find sufficient evidence of progress to allow them to close the Direction.

The following week, on 18 September 2019, the NOPSEMA Compliance Committee met to consider the inspectors' recommendations not to lift either Prohibition Notice 755 or General Direction 753. The Committee endorsed those recommendations. With that clear NOPSEMA decision, TSOGA/NOGA went into voluntary administration 2 days later.

3.6 Compliance issues

The fragile nature of TSOGA's finances at the time, and hence its crucial need to start revenue generation as soon as possible, would inevitably have been a considerable influence when deciding on approaches to seek compliance with the Prohibition Notice and General Direction as quickly as possible so as to re-start production. From discussions with TSOGA, UPS and CCMA, their frustration and confusion over the exact amount of work which would be required to comply was evident. I have considered this carefully.

Although there was a potential for confusion because of the overlapping nature of some of the issues covered by both the Prohibition Notice and the General Direction, I consider that NOPSEMA provided both TSOGA and UPS with clear information about the "roadmap" to compliance, and opportunities to discuss and clarify.

The way TSOGA and UPS approached the remedial work on structural corrosion was not ideal. Discussions held as part of the Review revealed that UPS concentrated only on resolving the work to clear its Prohibition Notice and TSOGA brought in its own contractors to concentrate on its General Direction, even though there was significant overlap between the two. There were added strained contractual arrangements at the time, with the partial transitioning towards TOGA operatorship (still not accepted by NOPSEMA) meaning that UPS no longer had control of materials procurement on the Northern Endeavour s47G

TSOGA expected that compliance could be achieved without undertaking any repairs to the AFFF system, even though that work (outstanding since Woodside owned the FPSO) was clearly specified in the General Direction, had been clearly explained in the NOPSEMA "roadmap" and was only scheduled for completion some 6 weeks after the September inspection. This was a naive expectation by TSOGA.

It is doubtful whether there was sufficient appreciation or acceptance that the Prohibition Notice and General Direction were intended to force the rectification of fundamental and significant major hazard risk issues which were long overdue, and were not just a response to a single non-injury dropped object. In my discussion, TSOGA particularly focused on the initial dropped object incident as the basis of the enforcement, and questioned whether there was sufficient evidence that it actually happened. UPS also highlighted that a “worse” dropped object incident on another facility at around the same time only resulted in an Improvement Notice. This lack of acknowledgement of the wider (and historical) reasons for this enforcement may have clouded expectations.

The wording of both the Prohibition Notice and the General Direction required the remedial work to be completed to the “satisfaction” of NOPSEMA before production could recommence. UPS felt it had shown its commitment by undertaking “a huge amount of work” in the two months following Prohibition Notice 755, and sought views from NOPSEMA during the September 2019 inspection about whether the work it was doing, once completed, was likely to meet NOPSEMA’s requirements. UPS wanted some comfort that the methodology it had adopted was likely to provide sufficient improvements and avoid reaching the end of its remedial work package only to be told that the process it had adopted was insufficient. NOPSEMA refused to discuss this issue. Whilst the reluctance of NOPSEMA to be drawn into such conversations for fear of regulatory capture over specific decisions is understandable, I was disappointed that NOPSEMA was not prepared to engage in a more enlightened approach on this occasion, noting:

- the Ministerial Statement of Expectation expects NOPSEMA to exercise its functions and powers in ways which maximise transparency and minimise compliance costs,
- the circumstances of this enforcement, with any assessment and rectifications having to be to “the satisfaction of the safety authority”, and
- the extraordinary consequences of delays in compliance obvious (which NOPSEMA was well aware of).

Such an approach may also have been helpful in defusing any impressions of “mission creep” of NOPSEMA’s requirements which UPS was beginning to sense during the September 2019 inspection. However, this is unlikely to have had a direct effect, given that any completion of the work for both the Prohibition Notice and General Direction was at least 6 weeks off when TSOGA entered administration.

3.7 Conclusions with regard to NOPSEMA

NOPSEMA is a robust, professional and independent regulator, and had significant concerns right from the start of the change of operator/titleholder for the Northern Endeavour asset. From my discussions with NOPSEMA and from analysing its reports, I consider that NOPSEMA took a strategic approach to its interventions with UPS/TSOGA: fundamental environmental concerns were identified and corrected at the earliest opportunities, concerns about corrosion were subject to inspection within a month of UPS taking over as operator and continued right to the end; and there was a gradual ratcheting up of inspection frequency and enforcement actions. It used the full breadth of its regulatory powers over this period.

Escalating senior management oversight was evident, as frustration grew over the quality of the response to inspectors’ findings, missed deadlines for improvements, doubts about the availability of financial resources, and the consequences of the contractual relationships between TSOGA and UPS. There was a gradual loss of confidence by NOPSEMA in the ability of the titleholder and the operator to fulfil their statutory obligations and resolve its

concerns over the adequate safety and environmental management of the ageing Northern Endeavour facility.

Fears about the cumulative impact of all of NOPSEMA's individual concerns increased, and the decisions on the appropriate course of action to take were well informed. Major hazard safety and environmental management relies upon a multi-barrier approach, where the failure of one barrier may not necessarily give rise to immediate risk because there will be back-up barriers, but when more than one of these layers degrade the potential for major incidents significantly increases. It was this holistic approach (rather than a direct response to two dropped object incidents) that led to NOPSEMA enforcing the Northern Endeavour to cease production in July 2019 until a range of long-standing, serious issues were resolved.

The loss of production until Prohibition Notice 755 and General Direction 753 were resolved had serious implications for TSOGA and UPS. Although they both expressed uncertainty over the amount of work that was needed to comply with these two enforcement documents, the requirements of both documents appear clear and NOPSEMA had meetings with each of them at an early stage to fully explain the requirements and describe a roadmap to compliance. TSOGA and UPS had expectations that they had done sufficient work to satisfy the terms of the Prohibition Notice and General Direction by the time of NOPSEMA's follow-up inspection in September 2019, but NOPSEMA did not agree. With the additional CCMA funding by then being fully utilised, TSOGA would have been unable to fund its operations and this led to the NOGA Group entering administration. From discussions it was clear that it would have been another 5-6 weeks at the earliest before TSOGA and UPS could have undertaken sufficient work to comply with the terms of the Prohibition Notice and General Direction.

The Review considered whether NOPSEMA's fundamental concerns over the adequate safety and environmental management of the ageing Northern Endeavour facility could have been brought to a conclusion earlier. Formal enforcement action on corrosion management could have been taken during 2018 but I accept that the NOPSEMA decisions were being made in an informed manner, taking into account other enforcement activities on the Northern Endeavour at the time. However, there are areas of potential improvement of NOPSEMA's strategic approaches, and these are covered in Section 5 of this report.

4. Role, responsibilities and performance of NOPTA and the Joint Authorities

This section examines how NOPTA and the Joint Authorities (JAs) performed their functions and exercised their powers in relation to the NOGA group of companies, the petroleum titles, the Northern Endeavour facility and the Laminaria–Corallina Project. It answers the section titled *Role, responsibilities and performance of NOPTA and the Joint Authorities* in the terms of reference.

4.1 NOPTA’s roles and responsibilities.

NOPTA is Australia’s offshore petroleum and greenhouse gas Titles Administrator, advising on and administering the OPGGSA titles regime. It was established in 2012. Its functions are formally specified in Section 695B of the OPGGSA. Unlike NOPSEMA, which is a separate Authority, NOPTA is a Branch within the Department of Industry, Science, Energy and Resources (DISER) and is headed by a statutory position of Titles Administrator.

Whilst the JAs are the decision-maker for the granting of the main types of petroleum titles for Australia’s petroleum exploration and development (including exploration permits, retention leases and production licenses), NOPTA provides information, advice and recommendations to the JAs in relation to such decisions. NOPTA also has the authority to grant some types of short-term petroleum titles (petroleum access authority and petroleum special prospecting authority) and approves commercial arrangements known as transfers and dealings. In undertaking its role of Titles Administrator, NOPTA is primarily focused on economic issues, seeking to ensure that the recovery of Australia’s petroleum resources is maximised and in accordance with the principles of good oilfield practice³⁷. It has significant data and information stewardship responsibilities, including maintaining the formal registers of petroleum and greenhouse gas storage titles.

4.2 NOPTA’s response to the LamCor agreement.

NOPTA described its engagement with Woodside, when it was the principal titleholder of AC/L5 and operator of the Northern Endeavour, as normal and with no non-compliance issues. NOPTA was aware that the LamCor fields were reaching the end of their life³⁸ and had no concerns from its perspective with Woodside’s public plans to decommission the field. It had no knowledge that Woodside were exploring the selling of the asset in parallel to planning for its decommissioning, but commented that it was not usually party to such commercial agreements or transactions before a formal application for NOPTA approval and registration of such a “dealing”³⁹ is received. That formal application occurred when the LamCor Agreement was lodged as a dealing with NOPTA on 18 December 2015.

The LamCor Agreement between Woodside, NOGA and Paladin Resources Oil & Gas (Australia) Pty Ltd (Paladin; Talisman’s parent company) was executed on 29 September 2015. It started the process by which NOGA eventually acquired control of

³⁷ “Good oilfield practice means all those things that are generally accepted as good and safe in: (a) the carrying on of exploration for petroleum; or (b) petroleum recovery operations”. Section 7 of the OPGGSA.

³⁸ Laminaria and Corallina Field Development Plan Update 2 Rev 3 2001.

³⁹ Dealings are defined in S486 of the OPGGSA, and cover a range of actions associated with creating or assigning rights or interests in existing titles.

AC/L5 and WA-18-L⁴⁰ via its wholly owned subsidiary TSOGA (previously named Talisman). The agreement covered a number of transactions under which NOGA acquired:

1. 100 per cent legal and beneficial ownership of Talisman from Paladin Resources;
2. Woodside's 66.67 per cent interest in AC/L5 and corresponding Joint Operating Agreement (novated to Talisman, later named TSOGA);
3. Woodside's 59.90 per cent interest in the AC/L5 Unit Operating Agreement (novated to Talisman, later named TSOGA); and
4. Woodside's 100 per cent interest in the Northern Endeavour FPSO

Put simply, NOGA became the parent company of Talisman through a corporate transaction and nominated this newly wholly-owned subsidiary as the sole titleholder of AC/L5 (Talisman having previously been the minority titleholder of 33.3 per cent of AC/L5). Talisman still remained as sole titleholder of WA-18-L. NOGA had now acquired 100 per cent of the assets and titles of AC/L5 and WA-18-L through its ownership of Talisman. NOGA submitted the LamCor agreement to NOPTA as a dealing for approval and registration.

NOPTA realised the significance of what was being proposed. Woodside, an ASX listed company with significant assets and upstream experience in Australia and elsewhere, was exiting from the title and therefore from its decommissioning liabilities. Although Talisman remained, its ownership was changing from Paladin Resources, a subsidiary of a large multi-national energy company (Repsol S.A) to the privately owned NOGA, recently created and with no background in offshore petroleum. In particular, NOPTA had concerns over the uncertainty of Talisman and NOGA's financial capacity, and their ability to meet any future decommissioning liabilities⁴¹. Yet, the LamCor Agreement did not introduce a new titleholder, and that fact significantly restricted NOPTA's actions in responding to the dealing under the terms of the OPGGSA. s47G

It was appreciated that this was a weakness in Part 4.3 of the OPGGSA, and the issue is explored further in Section 5.

NOPTA had no reason not to approve the transfer of Woodside's title (and the associated joint and unit operating agreements) so that transfer was approved on 16 May 2016. Because NOGA's acquisitions of both Talisman and the Northern Endeavour FPSO could not be considered as a dealing under the terms of the OPGGSA, those two issues did not need NOPTA approval to go through. Shortly after the approval of the LamCor title transfer, Talisman changed its name to Timor Sea Oil & Gas Australia Pty Ltd (TSOGA)⁴².

NOGA clearly stated that the reason it purchased Talisman was that, as an existing titleholder, Talisman retained A\$326 million in PRRT credits for the asset which was seen as

⁴⁰ WA-18-L is considered to contain 10.15% of the Laminaria field, but all infrastructure is within AC/L5. A Unit Operating Agreement was in place between the respective titleholders for the two blocks to "apportion" the production via the Northern Endeavour accordingly. There was also a Joint Operating Agreement between Woodside and Talisman as the joint venture titleholders for AC/L5

⁴¹ This U-turn, from preparing for end of economic life and decommissioning to life extension of an ageing asset and further field development, also had other significant implications on the maintenance regime of the Northern Endeavour, as discussed in Sections 2 and 3.

⁴² A change of titleholder company name is another activity which needs NOPTA scrutiny prior to updating the Title Register with the new name, although it is rather a formality.

cover for a significant part of the eventual decommissioning liabilities. The Woodside PRRT credits applicable to the LamCor decommissioning could not be transferred in the asset sale.

If there had been a new titleholder, for instance if another company simply wished to acquire the Woodside title interest in its own right, then NOPTA could have required evidence as to its technical and financial capacity to operate (and to undertake the subsequent decommissioning) of the Laminaria and Corallina fields and assets. In the light of such evidence, NOPTA would have had discretion to either approve or refuse the transfer on those grounds. At the time of the LamCor Agreement there was a Commonwealth Department of Industry guideline⁴³ about the sort of supporting documentation to be provided as evidence of the financial resources that are/will be available as well as technical capability, but this guidance was basic. That guideline has been subsequently updated and improved⁴⁴, so since 2016 NOPTA have had a clear and detailed financial capability assessment policy⁴⁵ for assessing the capacity of an applicant “to continue as a going concern and meet its commitments.... including work programs, development and decommissioning obligations.” Had such a financial capability assessment been used in relation to NOGA, the fact that NOGA was a new company (and hence had no financial track record) and whose only assets would have been this particular project, would without doubt have been significant factors to take into account⁴⁶. However, issues remain about the adequacy of the legislative coverage, as the provision of evidence of such financial capability is only relevant for the initial approval to assume title, although I appreciate that there may be ambiguity about a continuing requirement for such financial assurance. Additionally, the legislation makes no mention of corporate governance issues: in other words, evidence that titleholders, who take on the stewardship of some of Australia’s national assets, are suitable companies who can demonstrate recognised standards of company governance in areas such as Board leadership, transparency and accountability. These potential legislative gaps are further explored in Section 5.

Under the current requirements of the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011 (the RMA Regulations), the titleholder prepares a Field Development Plan (FDP) which describes how it will exploit the reservoir⁴⁷. NOPTA’s role is to advise the JAs before they come to their decision about whether the plan is consistent with good oilfield practise and is consistent with optimum long-term petroleum recovery, and hence whether the JAs should allow approval or not. With respect to the LamCor fields, Woodside already had an FDP⁴⁸, created and accepted under the legislative regime prior to NOPTA and still valid under transitional arrangements. TSOGA continued to operate under that FDP. NOPTA did not consider that the reversal of Woodside’s decision to decommission and cease production in 2016 could come within the definition of a “major change” which would have triggered the need for a formal variation of

⁴³ Offshore Petroleum Guideline: Transfer and Dealings Relating to Petroleum Titles: Commonwealth Department of Industry. Version 3: November 2013.

⁴⁴ Currently Version 6.

⁴⁵ NOPTA Internal Policy “Financial Capability Assessment”.

⁴⁶ NOPTA explained to me that its financial assessment for two recent transfers of titles for mid to late life assets took in the region of 8-10 months to complete.

⁴⁷ Regulation 4.07 of the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011 lists the detailed requirements for the content of FDPs.

⁴⁸ Laminaria and Corallina Field Development Plan Update 2 Rev 3 2001. Required under Division 2 of the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011.

the FDP and a new acceptance process⁴⁹. I feel the consequences of this inability to scrutinise the FDP in the light of TSOGA's intention to extend the life of the LamCor asset and defer decommissioning were low, as FDPs concentrate on reservoir specific information rather than titleholder issues of competence, financial assurance or decommissioning proposals.

4.3 Renewal of the AC/L5 Production License

Licence renewal is a decision for the JAs⁵⁰, advised by NOPTA. s47G

I think this was missed opportunity. The system of licence renewal is based on a narrow consideration of factors where the outcome is almost approval by default. For instance, the financial capacity of the titleholder is not considered (a matter which is fundamental for the long term stewardship of an asset and a significant concern for NOPTA in this case) nor wider intelligence of the titleholder's abilities and approaches to manage the significant risks of the operation (such as NOPSEMA's growing concerns on integrity management and its previous enforcement records over environmental response capability). It was clear to me that NOPTA and NOPSEMA had established good formal and informal relationships and liaison, so it was a shame that such intelligence was not being put to best use. However, I note that such fixed-term licenses are no longer used in Australia, with licenses instead being issued for the full field life term, so license renewal is a dwindling activity.

4.4 Production Monitoring

TSOGA was required to provide NOPTA with monthly production reports⁵² to enable it to assess aspects of reservoir, field and facility performance as part of NOPTA's resource oversight⁵³. NOPTA would therefore have been aware of the various outages and

⁴⁹ Similarly, in 2017, NOPTA advised the JA that a TSOGA proposal for an appraisal/development well in the Laminaria South area also did not constitute a "major change" and would not require a variation of the FDP.

⁵⁰ In this case the Territory of Ashmore and Cartier Islands Offshore Petroleum Joint Authority, which comprises just the responsible Commonwealth Minister.

⁵¹ Production license WA-18-L had been granted under slightly different arrangements and was for the life of the field.

⁵² Regulation 3.06 of the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011.

⁵³ Drilling and well workovers also trigger the need for certain reports to be sent to NOPTA (e.g. daily drilling reports).

disruptions on the Northern Endeavour which affected production during the period of TSOGA's title.

TSOGA also complied with its legal requirement to provide annual title assessment reports (ATARs). NOPTA uses ATARs, in conjunction with annual field performance update meetings, as its key mechanism for monitoring compliance against titleholder work programmes and requirements to maximise recovery and demonstrate good oilfield practices.

The various TSOGA ATARs (covering 2016-2018) provided overviews of the yearly asset performance, progress on projects such as the Lam 5 well reinstatement (which was still outstanding by the time NOGA entered into administration in 2019), and information of possible field development resulting from analysis and interpretations of reprocessed 3D seismic data. The ATARs reported on a number of production loss events (including, for example, hydrate blockage and subsea valve malfunctions) although the 2018 ATAR considered that the uptime of the facility had been a marked improvement on the previous two years. The average production of oil was steady, averaging around 3,000 bbl/day which was within the anticipated range. More comprehensive information was provided to NOPTA in a TSOGA presentation at a face-to-face annual performance update meeting on 1 May 2019, highlighting that no further investment funds had been secured at that time for any development of Laminaria South and beyond.

4.5 Titleholder financial capability

None of these statutory reports contained information that would have enabled NOPTA to come to a conclusion about TSOGA's financial capabilities or capacity, and NOPTA's ability to take an interest in titleholder financial affairs is limited. When a transfer of a title is proposed, NOPTA has a clear role under S474 of the OPGGSA in assessing the financial (and technical) capacity of any new titleholder capacity (see Section 4.2 above), but NOPTA stressed that is just a "point in time" assessment of the prospective titleholder's financial resources. After that, NOPTA considers that it does not have any further role in assessing the health of a titleholder's finances, a matter on which it has received advice. The information gathering powers which NOPTA has in Part 4.9 of the OPGGSA, which could be used to obtain financial information, are solely to inform NOPTA during its application handling processes (e.g. dealings, transfers of titles, etc) and are not available for NOPTA to use subsequently. Although S699 of the OPGGSA gives NOPTA general information gathering powers, these again have limitations.

There are financial assurance provisions in S571 of the OPGGSA, as previously discussed in Section 3 when NOPSEMA took enforcement action to require TSOGA to demonstrate financial assurance in relation to its oil spill response activities. However, NOPTA has no role under that part of the legislation, which has been effectively interpreted as requiring titleholders to be able to meet extraordinary costs which could occur at any time and not the ordinary costs of a project such as abandonment and decommissioning⁵⁴. This is discussed further in Section 5.

4.6 Approval of dealings

NOPTA received two other applications for the approval of dealings during the period 2016-2019, relating to mortgages over production licences AC/L5 and WA-18-L. The mortgages were made in favour of (respectively):

⁵⁴ Explanatory Memorandum to the Offshore Petroleum and Greenhouse Gas Storage Amendment (Compliance Measures No. 2) Bill 2013 2

- Castleton Commodities Merchant Asia Co. Pte Ltd (CCMA) in relation to certain loan facilities provided by CCMA to TSOGA (approved on 16 August 2017); and
- Upstream Production Solutions Pty Ltd (UPS) to secure contract payments (approved on 28 October 2019).

Section 487 of the OPGGSA stipulates that such dealings can only come into force when NOPTA has approved the dealing and made an entry in the relevant Register.

However, NOPTA's assessment of such dealings is minimal, limited to checking that the application form has been completed correctly, the appropriate copy of the dealing instrument attached and the fee paid, prior to entering details of the dealing in the relevant Titles Register. There was no oversight of the reason of the mortgages or their possible consequences, as NOPTA explained to me that the purpose of approving dealings is now restricted to enabling transparency by ensuring the Title Registers properly reflect title interests and changes. Prior to the establishment of NOPTA, though, the designated authorities who then administered the petroleum titles system were funded via *ad valorem* charges linked to the value of such dealings (and transfers), which therefore had a higher significance. NOPTA has a different cost recovery model and the transfer and dealings charges were abolished soon after it was established. In my opinion, whilst these two particular dealings would have been a source of financial intelligence for NOPTA (albeit the dealing in respect of UPS was in the period just before the NOGA group administration), their formal approval by NOPTA is not a significant issue.

4.7 Changes of Maritime Boundary

The recent Timor Sea maritime boundary changes affect the two LamCor blocks, as the title areas of both AC/L5 and WA-18-L are reduced as a consequence. However, the existing producing Laminaria and Corallina fields remain in the retained area, and there were no plans for exploration drilling in the areas which had been transferred to Timor-Leste. NOPTA described these changes as fairly inconsequential⁵⁵.

4.8 Decommissioning proposals

Regarding decommissioning of the asset, TSOGA was asked by NOPTA for details of its proposals. The TSOGA annual performance update presentation in May 2019 gave a high-level overview of plans for abandonment and decommissioning, **s47G**

The funding for that decommissioning liability was to come from PRRT credits, the "EOFL [end of field life] cash position", and disposal or redeployment of the FPSO. TSOGA stated that the current base value of the Northern Endeavour was in excess of its cost estimates for abandonment/decommissioning. During discussions, NOPTA highlighted that it considered that there were significant risks as TSOGA was heavily reliant on the extension of the field life to generate cash flow to cover decommissioning, but were unable to take any regulatory action. At the time, NOPTA was not aware that the TSOGA estimates of the costs for decommissioning was in the region of 25 per cent of that estimated by Woodside in 2015.

4.9 Conclusions with respect to NOPTA

Most nations with petroleum reserves have some sort of authority whose role is to safeguard and promote those national assets. This is done to ensure that any commercial exploitation

⁵⁵ Concerns were expressed that these changes disadvantaged TSOGA as titleholder, but from the limited information which was provided to me I was unable to assess the significance, including in relation to the earning of future PRRT credits.

is done competently and efficiently to maximise the economic benefits for the nation whilst ensuring that the stewardship of those assets is performed diligently and effectively, including the eventual decommissioning and permanent treatment of wells and other infrastructure. NOPTA forms part of Australia's framework, principally administering Australia's offshore petroleum titles regime under the OPGGSA. So, how was it possible for the LamCor asset to transfer from one under the control of a substantial, experienced offshore company preparing for orderly abandonment/ decommissioning to one taken over by a small, inexperienced private company which was significantly undercapitalised and whose eventual insolvency led to default on its significant abandonment and decommissioning liabilities?

NOPTA had a number of opportunities during 2015-2019 to influence this change of titleholder, including responding to the LamCor agreement, advising the JA on the AC/L5 production licence renewal, registering dealings associated with the LamCor fields, and day-to-day monitoring of the facility performance. What NOPTA did, NOPTA did thoroughly and it acknowledged that the NOGA group complied with its obligations under the title legislation. What comes across from my Review, however, is that NOPTA was having to work under a number of legislative limitations which it considered prevented it from being able to fully consider, and influence, the ramifications of the change of titleholder. It was these limitations which allowed TSOGA to be the titleholder for LamCor without, in my opinion, being subject to adequate regulatory scrutiny as to its governance and financial and technical capacity. I also think these limitations prevent NOPTA from being able to fully meet the Minister's Statement of Expectations which are focused on "*ensuring late life assets are appropriately managed and decommissioning obligations are met*"⁵⁶. I discuss ways in which this situation can be improved in Section 5.

⁵⁶ National Offshore Petroleum Titles Administrator Statement of Expectations - October 2019

5. Examination of possible areas for reform of the offshore oil and gas regulatory regime

Sections 2-4 have looked back at the performance of the main actors leading up to the NOGA Group's administration. This final section looks forward and considers any improvements which could be made in the legislative and regulatory regimes to address the issues and vulnerabilities which arose. In identifying issues which are worthy of further consideration, active consideration was given to a raft of related issues that were under consideration prior to my Review. This section responds to the part of the terms of reference titled *Examination of possible areas for reform of the offshore oil and gas regulatory regime*.

5.1 Decommissioning liability

Australia's offshore petroleum regime has a number of checks and balances to ensure that orderly and thorough decommissioning programs are put in place at the end of field life. These include:

- Titleholders are required to seek agreement of the JAs via amendments to their FDP if they want to decommission early;
- NOPTA monitors decommissioning intentions and funding proposals via annual ATARs and meetings;
- NOPSEMA permissions decommissioning activities via the Environment Plan, the Well Operations Management Plan and Safety Case regimes;
- NOPTA and the JAs take into account the quality of any such decommissioning (based on information from NOPSEMA⁵⁷) before making title-related decisions where titles are to revert to vacant acreage;
- NOPSEMA has powers of remedial direction under Part 6.4 of the OPGGSA to require titleholders (and some former titleholders⁵⁸) to restore the environment by removal of property, effective plugging of wells and making good any seabed damage; and
- Stakeholder, public and peer group pressure on titleholders to act in an environmentally responsible manner upon cessation of production.

Such a combination appears to have worked in the past. However, the events at the Northern Endeavour has shown that the current situation is entirely vulnerable to a "single point failure" of a titleholder going into administration like TSOGA did. None of the regulatory controls anticipates such an event. It leaves, in effect, no-one with the decommissioning and abandonment liabilities, which by default will have to be assumed by the state (with obvious costs to the taxpayer). Given the maturing nature of Australia's offshore industry, where late-life assets are likely to be passed from established major oil companies to smaller, less-substantial titleholders, this is of concern. The economic impact of the COVID-19 crisis could also further destabilise the industry, again highlighting the potential for company defaults.

APPEA's Decommissioning Sub-Committee is currently developing guidelines to encourage a consistent approach towards company decommissioning programmes, which will help provide clarity of predicted decommissioning costs and activities when titles are transferred. APPEA has also commissioned research from NERA to benchmark decommissioning costs

⁵⁷ NOPSEMA provides advice on matters such as whether all property has been removed or alternative arrangements have been made, if wells have been plugged and abandoned, if the conservation and protection of natural resources in the titles is provided for, and if any damage to the seabed or subsoil has been made good.

⁵⁸ For instance, where a Petroleum Production license has expired, been terminated or wholly or partly revoked/cancelled.

in Australia. This work should encourage better informed and more consistent approaches to decommissioning in the future, and will also help the regulators.

In addition, the Department of Industry, Science, Energy and Resources (DISER) are undertaking an Offshore Oil and Gas Decommissioning Framework Review and have already widely consulted on a discussion paper. DISER are now developing policy options and are due to report to the Minister later this year.

In relation to decommissioning liabilities, the events surrounding the liquidation of the NOGA group have shown that the status quo is not a real option. My discussions showed the adoption of a “trailing liability”⁵⁹ as titles change was receiving growing acceptance from industry, and is a concept which in my opinion could provide a final backstop for decommissioning liability. However, whether such a change could be retrospective or only when there are new title changes is a key issue which ought to be fully examined. Clarity about claiming PRRT credits in such circumstances would also be advisable.

Recommendation 1: The DISER Decommissioning Framework Review should consider recommending trailing liability, whereby a titleholder would be continually liable for the decommissioning and removal of its offshore assets, even after selling its interests in a title on to a different titleholder. Further consideration should be given on whether such changes could be retrospective or only for new title changes, and whether the ability to claim PRRT credits for any decommissioning work in such circumstances is clear.

However, trailing liability is only a backstop, and has its own weakness in that it depends on the circumstances of previous titleholders years after they may have exited a title. In my opinion it is essential that current titleholders continue to have the prime liability for funding the decommissioning of the assets they hold. Financial assurance of titleholders is required by S571 of the OPGGSA but the *de facto* interpretation of those provisions by the regulators (and therefore presumably by the industry) limits this to titleholders being able to cover extraordinary costs, expenses or liabilities, which could arise from highly unlikely events such as a significant oil spill, and not to cover funding for events which are the inevitable part of the day-to-day liabilities of a business. NOPSEMA’s published Policy “Financial Assurance for Petroleum Titles” Document No: N-04730-PL1780 A607991 echoes that such financial assurance is not required to cover ordinary operating or compliance costs. I also note the Explanatory Memorandum to the Offshore Petroleum and Greenhouse Gas Storage Amendment (Compliance Measures No. 2) Bill 2013 (p42) confirms that S571 financial assurance is intended to deal with extraordinary costs, expenses and liabilities that a titleholder might not have the capacity to meet and not ordinary expenses such as the costs of compliance with title conditions.

The effective status quo interpretation of S571 is, in my opinion, sensible. Throughout the duration of a title, titleholders could face a catastrophic event⁶⁰, and S571 requires every titleholder to be able to call on guaranteed finance to cover what could be massive costs and liabilities, even if such events have a very low probability of happening⁶¹. NOPSEMA is in the

⁵⁹ Trailing liability refers to a titleholder being continually liable for the decommissioning and removal of its offshore assets, even after selling its interests in a title on to a different titleholder.

⁶⁰ For example, blow outs during drilling or well workovers, well failure, ship collision, facility fire and explosion, significant damage due to weather, are all examples of incidents which could lead to loss of containment and significant oil spills.

⁶¹It is generally accepted that BP’s liabilities from the Deepwater Horizon/Macondo blowout in the Gulf of Mexico were in the region of \$60bn

best position to regulate this, as it enforces the parallel requirement of Environment Plans: one regulator covering both the titleholder operational response to such an extraordinary event and ensuring that the titleholder will have sufficient funding mechanisms in place (commonly via the insurance market) for the worse-case scenario costs and liabilities. This worked well in the case of TSOGA's oil spill response responsibilities.

However, the issue of decommissioning liabilities is different, and the events of the liquidation of the NOGA group has demonstrated the weakness in the current system. Decommissioning is an inevitable activity for every offshore petroleum project, whereas extraordinary costs arise from events that are, by their very nature, uncertain and may never happen during the lifetime of any particular project. The costing and (normally) timing of decommissioning activities will be known years in advance: they are part of the business cycle of a petroleum project, and as such the effective planning and budgeting for decommissioning is a part of being a "fit and proper" titleholder. I understand that the existing requirements of S571 could be interpreted as also requiring titleholders to maintain financial assurance at all times for all their "costs, expenses and liabilities" associated with carrying on the petroleum activity, including future decommissioning costs right from the commencement of the title. However, I do not consider that S571, as currently drafted, is an appropriate vehicle to regulate titleholders with respect to their decommissioning liabilities. There are already clear requirements for titleholders to decommission appropriately, so the need for financial assurance would be if a titleholder deliberately seeks to avoid its financial obligations or if, in the case of the NOGA group, the company liquidates. I see this as an area where NOPTA and the JAs are the more appropriate regulator, rather than NOPSEMA. I envisage a stronger role for NOPTA in assessing a titleholder's decommissioning plans and their funding, coupled with a new ability to require financial surety for such decommissioning costs should NOPTA have concerns. To protect taxpayers, such financial surety should be in a form that would be available to the Government in the case of the titleholder going into liquidation. I would encourage such proposals to be further explored as part of the DISER Decommissioning Framework Review. I envisage that NOPSEMA would continue with the oversight of financial assurance for extraordinary events, as currently.

Recommendation 2: The DISER Decommissioning Framework Review should explore legislative changes or clarifications to enable NOPTA and the JAs to require titleholders to provide financial surety for their decommissioning liabilities, should NOPTA have concerns that the titleholder will not be in a position to meet such costs. Such sureties should be in a form that would be available to the Government in the case of the titleholder going into liquidation.

5.2 The Role for NOPTA

Section 4 of this Review highlights limitations on NOPTA during its title oversight of the Northern Endeavour facility, due to gaps or lack of clarity in the legislation with respect to transfers and dealings. Without those limitations, NOPTA would have had a stronger regulatory influence over the consequences of the LamCor agreement. NOPTA had already raised details of these regulatory concerns within DISER, relating to:

- a) NOPTA has no oversight of dealings which substantially change the ownership of a titleholder ("company level transactions")
- b) When a transfer of a title is to an existing titleholder, there is no requirement under S474 of the OPGGSA for details of the technical qualifications and financial resources of the transferee to be part of the transfer application

I would merely add that these issues in the legislation on transfers and dealings should be addressed.

Recommendation 3: Regulatory concerns over the adequacy of legislation to allow NOPTA to have oversight of titleholder company level transactions, and to allow NOPTA to assess financial resource and technical qualification considerations before a title is transferred to an existing titleholder, should be resolved.

The OPGGSA offshore petroleum titles regime focuses on economic issues to ensure the resources of Australia's petroleum reserves are maximised. This is echoed in the Minister's Statement of Expectations to NOPTA, which again emphasises the optimum recovery for the benefit of the Australian economy. This is the main focus of NOPTA's responsibilities and activities. There is far less focus, though, on the entity which is actually undertaking that recovery, even though it "rents" the stewardship of the reserves from the state. It is in the interest of full reservoir exploitation that the titleholder is a responsible, efficient company that continues to have the financial capacity to invest and remain solvent throughout its title. Yet NOPTA only has limited powers to assess and monitor whether titleholders can do this, and the circumstances which arose with TSOGA show the need to improve this part of the regime and allow NOPTA to play an enhanced role.

Although NOPTA already regulates titleholder financial and technical capacity, this has been restricted (as shown in Part 4) to the assessment of new titleholders at the point in time of the change. NOPTA considers that it does not have powers to subsequently obtain financial and technical capacity information about the titleholder, and thus its monitoring of titleholder performance and capacity throughout the tenure of the title is limited. Again, this is an issue which NOPTA has already raised internally in DISER.

Recommendation 4: NOPTA's powers should be clarified (with changes to S699 of the OPGGSA if necessary) so that NOPTA can obtain financial and technical capacity information about the titleholder, and thus monitor titleholder financial performance and technical capacity, throughout the tenure of the title, including decommissioning. Titleholders should be made aware of any changes to NOPTA's current practises and expectations on this.

NOPTA's scrutiny of titleholder financial and technical capacity could be strengthened further. I consider the quality of titleholder governance⁶² is also a crucial issue worthy of its oversight, as the experience of the Northern Endeavour has demonstrated some of the vulnerabilities when a small, inexperienced private company takes over a title. Issues such as having an effective Board, clear division of responsibilities at the top of the company, appropriate involvement of non-executive Directors, rigorous business risk management, and transparency are all key issues against which companies could be benchmarked as part of a wider NOPTA assessment before approving a transfer of title and for monitoring thereafter. I suggest that this is given wider consideration as presumably an amendment to legislation would be required, but in the meantime NOPTA could consider updating the Offshore Petroleum Guideline: Transfer and Dealings Relating to Petroleum Titles to include an expanded section on titleholders' technical capacity and governance expectations.

Recommendation 5: Consideration should be given to extending NOPTA's oversight to include the adequacy of titleholder corporate governance arrangements. In the meantime, NOPTA should consider updating the Offshore Petroleum Guideline: Transfer and Dealings Relating to Petroleum Titles to include an expanded section on titleholders' technical capacity and governance expectations.

⁶² For instance, as described in the OECD Principles of Corporate Governance.

Until the above issues are dealt with, including an effective resolution to the decommissioning liability issues, I think that NOPSEA is unable to fully meet the Minister's expectation that "late life assets are appropriately managed and decommissioning obligations are met".

5.3 NOPSEMA's inspection focus

NOPSEMA's inspection policy specifies the minimum periodicity of inspections per facility per year, with the exact scope of such inspections being left to the relevant NOPSEMA "focal point" inspector, informed by annual operating plans and the high-level Corporate Plan. The expectation is that NOPSEMA inspection activity will sample a range of the facility's major hazard event controls over a five-year period to match the five-year periodicity for Safety Case re-submission and approval. However, I was surprised that NOPSEMA does not develop long-term facility or dutyholder-specific intervention plans; different facilities and dutyholders should require different strategies for inspection, depending on their previous performance, the type and condition of the facility, and company-related factors. I consider there could be benefits of more formal planning of interventions at the facility and/or dutyholder level, whereby the priorities for the scope/type of inspection activities are regularly assessed and incorporated into a long-term plan. Developing such plans could provide a better strategic approach to focus priorities, clarify objectives and manage resources, and may also help NOPSEMA to monitor its effectiveness.

For instance, in the case of TSOGA and UPS on the Northern Endeavour, such an approach may have driven the resolution of the corrosion and ageing asset management concerns earlier. Had NOPSEMA drawn up such a long-term intervention plan at the time of TSOGA/UPS taking over, I would have envisaged that an analysis could have identified the following immediate priorities:

- 1) Ensuring that TSOGA, a new inexperienced titleholder, was able to fully meet its responsibilities in relation to oil spill response under a compliant Environment Plan
- 2) Ensuring that UPS and TSOGA were managing the consequences of life extending an ageing asset previously preparing for decommissioning/cessation of production.
- 3) Assessing the effectiveness of the arrangements between the separate titleholder and operator in jointly delivering satisfactory health, safety and environment standards.

Other inspection activities/topics would, of course, have been needed later in the plan, but those three topics were the issues which made the Northern Endeavour particularly vulnerable and a focus for the regulator's resources until they had been resolved. In the event, even without such a long-term plan, NOPSEMA did make early inspections of TSOGA's oil spill response arrangements and UPS's corrosion assessment/remediation activities in 2016. However, whereas the former was quickly and firmly dealt with, the latter remained without being completely resolved to NOPSEMA's satisfaction. The wider aspects of ageing and life extension management, and the effectiveness of titleholder/operator interfaces, only started to receive inspection attention in 2019.

Recommendation 6: NOPSEMA should consider developing its inspection planning processes to incorporate more formal, longer term planning of interventions at the facility and/or dutyholder level. Developing such plans could provide a more strategic approach to focus priorities, clarify objectives and manage resources.

The NOPSEMA recommendations for the Northern Endeavour generally appeared to be about issues which should have already been picked up by titleholder and operator internal safety and environmental monitoring regimes. The NOPSEMA recommendations tended to

focus on symptoms of an underlying health and safety malaise rather than root causes such as contractual issues, financial resourcing, senior management commitment, safety culture, failures of internal company monitoring, auditing and reviews, and titleholder–operator relationships. Focusing the direction of inspections towards those sorts of root cause issues would help increase the effectiveness of NOPSEMA’s role. I realise that my views only arise from the inspection history of one facility⁶³. However, I would recommend NOPSEMA review its current inspection practices in the light of my comments above, possibly in conjunction with work it already has in hand in developing its management capability interventions.

Recommendation 7: NOPSEMA should review its inspection practices to ensure that sufficient focus is paid to identifying root causes of non-compliance and to monitoring dutyholders’ corporate culture and compliance processes.

NOPSEMA has a mature inspection regime, with a system of clear policies and procedures. The process of formally raising “recommendations” at the conclusion of an inspection, and then rigorously tracking progress by the operator to close those recommendations at subsequent inspections, is a fundamental part of that activity. Inspection reports relating the Northern Endeavour showed that inspectors were routinely raising around 20 recommendations at each inspection, in addition to tracking the progress of over 30 “open” recommendations from previous inspections. I understand that such a level of recommendations is not uncommon for other facilities as well. Recommendations are not part of NOPSEMA’s arsenal of formal enforcement measures, but lack of a satisfactory conclusion to recommendations can be escalated through NOPSEMA’s enforcement process.

Raising focused findings from inspections, and rigorously tracking their resolution, is an indication of a robust regulator. However, I have concern that the sheer number and types of recommendations being normally raised by NOPSEMA may have the unwittingly negative effect of reducing an operator’s ownership of safety management on its facility. There seemed to be an almost relentless nature of inspections on the Northern Endeavour. Each inspection resulted in another significant bundle of new recommendations and detailed tracking of progress to resolve previous ones, so much so that I wonder whether the perverse effect is of one where the regulator, and not the operator, begins to take over the agenda and priorities of the safety management on the facility. What gets picked up by an inspection becomes the priority. My discussions with industry tended to support my perception here.

Recommendation 8: NOPSEMA should seek the views of offshore employer and employee representatives and other stakeholders over the effectiveness or otherwise of its current practices with respect to raising inspection recommendations in encouraging strong titleholder and operator ownership of the health, safety and environmental standards offshore and their continuous improvement.

5.4 Overlapping responsibilities of titleholders and operators.

I have considered whether the existing legislative framework is adequate to cope with the different, sometimes overlapping, roles and responsibilities of titleholders and operators. Under the OPGGSA and related regulations, titleholders are responsible for detailed environmental protection and response requirements via the EP and for well integrity and control (including the WOMP). They also have an overarching responsibility under S572 of

⁶³ On the Northern Endeavour, for instance, I received no clear picture of insightful interventions to look at exactly how or why the delivery of the overall corrosion management was failing, and hence what was the best regulatory approach and “target” to effect change to compliance.

the OPGGSA “to maintain in good condition and repair” all structures and equipment in the title area. Conversely, the facility operator has the overarching duties to take “all reasonably practicable steps” to ensure the facility and all work carried on it are safe and without risk to health. The operator also has the duty to have an accepted Safety Case⁶⁴ for the facility, and to comply with its contents.

Parts 2 and 3 of this Review identify a number of issues where the split arrangement between TSOGA and UPS did not work well enough to ensure adequate standards of health, safety and environmental control on the facility: the confusion of roles and responsibilities between TSOGA and UPS in addressing corrosion issues; the lack of effective monitoring by TSOGA of UPS’s compliance with the Northern Endeavour Safety Case obligations; and issues of adequacy of budgets for UPS to undertake necessary integrity work. I consider that there is a gap in the legislation.

The current DISER Offshore Oil and Gas Safety Review provides an opportunity to consider this further. One option would be to put a duty on a titleholder to ensure that, where it appoints a separate operator, that operator is capable of carrying out its duties under the OPGGSA. This would ensure that contractual arrangements provide, for example, appropriate financial resources, sufficient numbers of staff, and technical competencies for the operator to deliver its Safety Case commitments. A further duty on the titleholder could then be to take reasonable steps to ensure that its operator actually fulfils its OPGGSA duties. This would fully “link” the titleholder to the performance of its operator, and ensure that the titleholder has to take an active role and interest in compliance on its facility, including appropriate monitoring, review and direction of its operator. Such approaches have already been adopted in the UK⁶⁵ and in other European states⁶⁶.

Recommendation 9: The DISER Offshore Oil and Gas Safety Review should consider the benefits of creating legal duties on titleholders to ensure that, where a titleholder appoints a separate operator, that operator is capable of carrying out its duties under the OPGGSA, with a further requirement for the titleholder to then take reasonable steps to ensure that its operator actually fulfils its OPGGSA duties.

⁶⁴ Chapter 2 of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 provides that Safety Cases should include such matters as a description of the safety management system, fire and explosion risk analysis, and the evacuation/escape/rescue procedures.

⁶⁵ Regulation 5 of the UK’s Offshore Installations (Offshore Safety Directive) (Safety Cases etc.) Regulations 2015.

⁶⁶ Article 6, EU Directive 2013/30/EU on safety of offshore oil and gas operations

Annex 1: Terms of Reference

Review of the circumstances that led to the administration of the Northern Oil and Gas Australia (NOGA) group of companies

INTRODUCTION

Timor Sea Oil and Gas Australia Pty Ltd (in liquidation) (TOGA) holds two Petroleum Production Licences (AC/L5 and WA-18-L) under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage Act 2006 (the Act). TOGA contracted Upstream Production Solutions Pty Ltd (UPS) to operate the Northern Endeavour floating production storage and offtake (FPSO) facility, which is permanently moored in the AC/L5 title area, approximately 550 kilometres northwest of Darwin in the Timor Sea.

On 20 September 2019, TOGA and related companies Northern Oil and Gas Australia Pty Ltd (in liquidation (NOGA) and TOGA Services Pty Ltd (in liquidation), were placed into voluntary administration, with KPMG appointed as the administrators. The companies are collectively referred to as the NOGA group of companies.

Following the second meeting of creditors on 7 February 2020, the NOGA group of companies were placed into liquidation with KPMG appointed as the liquidators of the companies.

Prior to voluntary administration, the Northern Endeavour was subject to a number of enforcement actions by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). These enforcement actions related to overdue maintenance and repairs and extensive corrosion.

REVIEW LEAD

The review will report to the Minister for Resources, Water and Northern Australia and be conducted by Mr Steve Walker.

SCOPE

The administration and subsequent liquidation of the NOGA group of companies is an unprecedented event in Australia's offshore oil and gas industry. It is important for the government to understand how and why this situation arose, so that it can fully consider what may need to be done to prevent a similar situation occurring in the future.

The following elements will be assessed and considered through the review:

Role, responsibilities and behaviour of the NOGA group of companies

The NOGA group of companies in liquidation are:

- *Northern Oil and Gas Australia Pty Ltd (ACN 607 646 579)*
- *Timor Sea Oil and Gas Australia Pty Ltd (CAN 111 708 868)*
- *TOGA Services Pty Ltd (CAN 629 073 365)*

The NOGA group foundation asset was the Laminaria-Corallina Project in the Timor Sea. NOGA entered into an agreement to acquire a 100 per cent interest in Production Licences AC/L5 and WA-18-L, which contains the producing Laminaria and Corallina oil fields and associated infrastructure, including the Northern Endeavour FPSO. This sale agreement was completed on 29 April 2016.

The review will consider the circumstances which caused the NOGA group of companies to collapse, and in particular, the behaviour of the companies in the lead up to its entry into administration.

Role, responsibilities and performance of NOPSEMA

NOPSEMA is Australia's independent expert regulator for health and safety, environmental management, structural and well integrity for offshore petroleum facilities and activities in Commonwealth waters.

NOPSEMA is an independent statutory authority established under the Act. NOPSEMA's principal functions are detailed in section 646 of the Act to:

- Promote the occupational health and safety (OHS) of persons engaged in offshore petroleum operations or offshore greenhouse gas storage operations.*
- Develop and implement effective monitoring and enforcement strategies to ensure compliance under the Act and regulations.*
- Investigate accidents, occurrences and circumstances relating to health and safety, structural integrity and environmental management.*
- Advise on matters relating to health and safety, structural integrity and environmental management.*
- Make reports, including recommendations, to the responsible Commonwealth minister and each responsible state and Northern Territory minister.*
- Cooperate with other Commonwealth and state or Northern Territory agencies or authorities having functions relating to regulated operations.*

NOPSEMA undertook a number of compliance and enforcement activities, including investigations in relation to the Northern Endeavour.

The review will consider how NOPSEMA performed its functions and exercised its powers in relation to the NOGA group of companies, the petroleum titles, the Northern Endeavour facility and the Laminaria-Corallina Project.

Role, responsibilities and performance of NOPTA and the Joint Authorities

The National Offshore Petroleum Titles Administrator (NOPTA) is responsible for the day-to-day administration of petroleum & greenhouse gas titles located in Commonwealth waters, on behalf of the Joint Authorities.

The Titles Administrator is appointed by the Secretary of the Department of Industry, Science, Energy and Resources under section 695A of the Act.

NOPTA's key functions are to:

- Provide information, assessments, analysis, reports, advice and recommendations to members of the Joint Authorities and the 'responsible Commonwealth Minister' under the Act and associated regulations.*
- Facilitate life of title administration, including but not limited to Joint Authority consideration of changes to title conditions, and approval and registration of transfers and dealings associated with offshore petroleum titles.*
- Manage the collection, management and release of data.*
- Keep the registers of petroleum and greenhouse gas storage titles.*

The Joint Authorities are the decision-maker for the grant of petroleum rights and any alteration to those rights that underpin petroleum exploration and development activities

carried. NOPTA provides technical advice and recommendations in relation to these decisions. All communications to or from the Joint Authority occurs through NOPTA.

NOPTA also has the legislative authority to approve certain commercial arrangements known as transfers and dealings.

The review will consider how NOPTA performed its functions and exercised its powers in relation to the NOGA group of companies, the petroleum titles, the Northern Endeavour facility and the Laminaria-Corallina Project.

Examination of possible areas for reform of the offshore oil and gas regulatory regime

All aspects of the legislative and regulatory regimes are open for consideration as part of the scope of the review. This includes the Act, its associated regulations and guidance material provided by NOPTA and NOPSEMA.

While not pre-empting nor limiting any advice of the review, such reforms may include consideration of:

- The process by which title ownership changes, i.e. transfers and dealings.
- Mechanisms to ensure any costs borne by the Commonwealth to manage and decommission the assets and facilities of the NOGA group of companies are not imposed on taxpayers.
- Enhanced monitoring of producing oil and gas projects.

TIMEFRAME

The review will consult with key stakeholders, including the offshore oil and gas industry in undertaking its work.

Mr Walker will provide his advice to the Minister by May 2020.

Annex 2 Narrative of integrity and corrosion aspects of NOPSEMA inspections of the Northern Endeavour 2016-2019.

October 2016.

Part of this first inspection under UPS operatorship was to “*assess whether the safety management systems with respect to topsides corrosion were appropriate for the risks faced at the facility, to gain an appreciation for the current state of the facility and identify any obvious deficiencies*”. The inspection noted that extensive corrosion was present throughout the facility, a legacy of the previous Woodside expectations that the facility was coming to the end of its production life. Although there was a Corrosion Management Plan associated with the UPS Safety Case for the facility (revising a similar document from Woodside) the amount of detail on fabric related corrosion was small. The inspectors were not able to identify a report which described the current state of corrosion on the Northern Endeavour in quantifiable terms or which assessed the safety risk associated with that corrosion. However, they were told that “a vessel survey of topsides corrosion was planned for Q4 2016” (the inspection was in October 2016.).

As a result of that inspection, NOPSEMA made 16 recommendations to UPS, of which eight were directly related to corrosion management issues. Of particular relevance to this report were:

Recommendation 1489-10: UPS to ensure that a risk assessment of corrosion at the facility is completed which:

- *identifies corrosion related hazards at the facility;*
- *assesses those risks (including ranking and prioritisation); and*
- *describes a plan for inspection, monitoring and addressing corrosion hazards in order to reduce corrosion risks to ALARP, including outstanding corrective work orders.*

Recommendation 1489-12: UPS to consider establishing clear and objective acceptance criteria for corrosion of safety-related equipment (e.g. platforms, walkways, handrails) which are not covered by a Performance Standard. The acceptance criteria should be quantitative so they can be measured effectively and consistently.

In addition, 21 outstanding “open” recommendations which had been raised during Woodside’s operatorship were carried forward, including:

Recommendation 1489 -24 (previously Woodside 1175-17): Ensure that all sections of damaged main deck aqueous film forming foam (AFFF) piping are permanently repaired and fit for purpose. [This had a due date for completion of 31 October 2016]

April 2017

The follow-up UPS offshore inspection was carried out in April 2017. The scope followed a similar format to previously, namely progressing previous recommendations, consulting with the workforce, following up relevant incidents, and some specific topics: the safe management of small bore tubing and piping systems (selected in the light of a recent incident), and an assessment of UPS’s overall preventative measures relating to a major accident event associated with the FPSO’s oil cargo tanks.

Interestingly, this inspection provided concrete examples of the sort of challenges that UPS had taken on in extending the life of an asset previously due for decommissioning. In 2014,

issues relating to the cracking of small-bore connections had been discovered, and Woodside's subsequent risk assessment of the problem led to additional bracing to the high-risk fittings but only a program of inspection for fittings of lower risk. This was based on its plans to end field life and decommission the facility in 2015/16. At the time of the UPS inspection in April 2017, the inspectors were not able to identify a risk assessment which revisited the assumptions made in the original risk assessment undertaken by Woodside, now that the life of the facility had been extended beyond that planned by Woodside. One of the NOPSEMA recommendations from this inspection (Recommendation 1505-11) was that such a reassessment be completed and remedial plans put in place to reduce the risk to ALARP. Another example of the issues arising from the U-turn of Woodside's decision to decommission came from a high potential dropped object incident when a 2.75kg valve shroud had fallen 8m and just missed a worker. UPS's own investigation concluded that the root causes of that failure included a lack of corrective maintenance by the previous operator to address corrosion in the light of the plans to decommission.

In reviewing the two specific corrosion recommendations from the previous inspection mentioned above (1489-10 and 1489-12), UPS's response was that they were to be covered by a new Corrosion Management Plan, and so it was agreed with the NOPSEMA inspectors that the date to resolve those issues be extended by 6 months. The outstanding Recommendation 1489-24 (carried over from Woodside's ownership: then Recommendation 1175-17) on the AFFF piping repairs was also discussed, with UPS confirming that the AFFF piping system was currently undergoing an engineering review/assessment to determine a "Long Term Defect Mitigation Strategy and Service Life". The date for resolution was extended to 30 August 2017.

June 2017

In accordance with NOPSEMA's policy of two annual occupational health and safety inspections per facility, a second inspection was made during June 2017, albeit restricted to discussions at the onshore UPS offices. The scope centred on assessing UPS' arrangements for the training and competency of NE personnel conducting lifting related activities, linked to an investigation of a recent incident involving the incorrect use of a lifting spreader bar. The report makes no mention of any discussions relating the outstanding NOPSEMA recommendations from previous inspections.

Q3/Q4 2017

Later in the year, NOPSEMA met UPS to discuss progress with Recommendation 1489-10. A meeting on 31 August 2017 showed there had been some progress, but this corrosion assessment work had still to be completed, and UPS requested that the due date be extended further to 31 October 2017. A subsequent meeting on 17 November 2017, though, still showed a lack of conclusion to this Recommendation, and growing concern from NOPSEMA that enforcement action may be necessary to resolve this issue.

January 2018

UPS notified NOPSEMA in December 2017 that it had suspended helideck operations. This was due to UPS's concerns about structural corrosion of the main helideck support beams, which it had just discovered had not been integrity inspected for 8 years. The helideck remained out of action until the required remediation work was undertaken. Therefore, NOPSEMA's next offshore inspection, planned for January 2018, was conducted at the UPS offices as the helideck on the NE was still out of action. The scope was primarily driven by the investigation of seven recent incidents (two of which raised issues of corrosion leading to loss of containment), plus inspection of UPS's "Isolations and Permit to Work" arrangements and the control of ignition sources. Twenty-two formal recommendations resulted.

The inspection report also noted that the previous Recommendation 1489-12 requiring clear and objective acceptance criteria for corrosion on walkways, handrails etc. had now been closed. However, the linked Recommendation 1489-10 was still flagged as “open” because although the inspectors sighted partial evidence of work done in identifying corrosion related risks on the facility, prioritising and planning activities to remediate, a fully documented report listing all known corrosion risks with ranking and prioritisation was not available. There was no mention of the AFFF pipework Recommendation 1489-24.

July 2018

The next offshore inspection occurred in July 2018, when the specific offshore aspects of the topics covered in the January onshore inspection were pursued. However, the scope of this offshore inspection also included follow-up to the previous Recommendation 1489-10. UPS had prepared a report titled “Northern Endeavour Corrosion remediation” in February 2018, which described the result of the risk identification, assessment and plans to mitigate the corrosion risks to deliver against NOPSEMA’s recommendation.

The inspectors found evidence of remediation of excessive corrosion, with multiple instances of repairs to piping and structures where excessive corrosion was evident (e.g. crude offtake piping, helideck, pipe racks, overboard discharge piping), and general fabric maintenance was evident in multiple locations. They felt conditions were an improvement from the previous inspection of the facility 15 months previously. However, they considered that the UPS Northern Endeavour Corrosion remediation report was confusing in how it assessed levels of risk, and hence the priority given for the remedial actions, and were concerned about the level of temporary solutions being employed (for instance, short-term “patch” repairs on pipework, temporary scaffolding supports for pipe racks). In addition, this report did not appear to have given rise to clear plans to ensure that remediation activities would be completed in a reasonable time frame and that adequate resources were being allocated. The inspectors voiced their concern about the potential for UPS resources to be allocated to boost production at the expense of assuring an appropriate level of safety on the facility. NOPSEMA subsequent made four corrosion-specific recommendations arising from this inspection,

Recommendation 1742-1: UPS to ensure that a detailed schedule/plan is completed which details planned activities to complete “package maintenance” activities to permanently repair corrosion related hazards on the facility, so that residual risk is reduced to ALARP.

Recommendation 1742-2 UPS to ensure that appropriate amount of resources is being allocated to the corrosion remediation work so that risks are reduced to ALARP in a timely manner.

Recommendation 1742-3 UPS to ensure that plans are in place to remove all scaffolding that is installed as a temporary support for corrosion affected structural members, and permanent repairs installed that meet the standards set out in the facility safety case.

Recommendation 1742-4 UPS to ensure that remediation activities for corrosion related risks are prioritised according to the assessed risk (e.g. High Risk, Medium Risk, Low Risk) and that the correlation between risk and priority of remediation activity is clearly articulated in the NE Corrosion Remediation report [Rev. 1] (or equivalent).

Interestingly, UPS subsequently suggested a “due date” to complete these new corrosion remediation recommendations, all focusing on the process rather than the actual execution of the corrosion remediation work, which was in nearly one year’s time. The documentation for this inspection does not make clear the status of the overarching Recommendation 1489-10.

October/November 2018

The next follow-up inspection, albeit onshore only, was carried out in October and November 2018. One of the prime purposes was to follow up the previous corrosion management recommendations, given NOPSEMA’s concern over UPS’s proposal to need over 10 months to address recommendations 1742-1 to 1742-4.

UPS provided a revised Northern Endeavour Corrosion Remediation Plan for this inspection, to address Recommendation 1742-1 for a detailed plan to permanently repair corrosion related hazards. Some of the highest priority work was scheduled (albeit dependent on NOGA approval), but other identified work required detailed package maintenance work plans to be developed and then scheduled. Crucially, Section 6 of this UPS report acknowledged that planning and scheduling was dependent on appropriate resources being made available and in the light of the “build-up and backlog of corrosion/fabric maintenance scopes”, proposed a dedicated five-strong Asset Integrity Management team to take this forward throughout the remaining life of the facility. Again, it noted that this would need client approval⁶⁷.

The inspectors formed the view that this new report was insufficient in terms of both scope and schedule to address Recommendation 1742-1. They therefore raised a further Recommendation 1877-2, requiring UPS to now manage the health and safety risks associated with corrosion on the Northern Endeavour. The inspectors still considered that all the other corrosion related recommendations were also open.

It was during this onshore inspection that the inspectors identified a significant issue relating to maintaining integrity of the FPSO’s hull. FPSOs can be considered as part ship (albeit normally anchored) and part production processing plant. Traditionally, those parts of an FPSO which most interface with the maritime hazards are regulated via the normal maritime arrangements whereby a classification society (such as Lloyd’s Register or the American Bureau of Shipping) will undertake regular inspections to international standards to ensure the vessel meets a range of maritime standards: this is often referred to as being *in Class*. Whilst the Northern Endeavour FPSO is stationed in Australian waters, its key safety integrity document (the Northern Endeavour NOPSEMA-accepted Safety Case) relies on such class inspections and certification as a demonstration of integrity for maritime aspects such as the continuing structural integrity of the hull and cargo tanks. Accordingly, the Northern Endeavour safety case commits to maintaining the hull/cargo tanks “in accordance with Class Rules”. The issue which came to light at this inspection, though, was that certain 5-yearly “special inspections” of the cargo tanks by the Northern Endeavour’s class society, Lloyd’s Register, were overdue. UPS eventually reached an agreement with Lloyd’s Register that a lower level of tank survey, one based on risk rather than just periodicity, would provide sufficient assurance to Lloyd’s Register as to the ongoing structural integrity of the FPSO’s tanks and would enable it to maintain class for the FPSO. NOPSEMA’s specialists disagreed, considering that the fact that the tank surveys were overdue was sufficient demonstration that UPS was not adequately maintaining the vessel’s structural integrity and

⁶⁷ Such a team was never approved.

hence creating risks of injury or death for persons working on it. The inspectors very quickly moved to issuing two Improvement Notices, requiring the 5-yearly inspections of the cargo tanks to be completed within 90 days⁶⁸.

The combination of concerns about the non-resolution of NOPSEMA's corrosion-related recommendations, some dating back to the first inspection of UPS as operator of the Northern Endeavour in October 2016 (and one which even pre-dated that), plus the new issue of overdue cargo tank inspections led to NOPSEMA's Compliance Committee formally establishing a Key Compliance Issue (KCI) topic entitled "*KCI#54: Management of safety integrity and environmental management of the Northern Endeavour-NOGA facility and associated activities*" with regular updates at each subsequent meeting.

March 2019

Coming in to 2019, the first offshore inspection of the Northern Endeavour was 12-14 March 2019. Of particular relevance to this report were three linked topics:

- Corrosion, including verification of commitments to recommendations from previous inspections
- Inspection, maintenance and repair
- Ageing assets/facilities

The inspectors noted in their report that significant progress had been made towards general fabric maintenance at the facility, particularly in relation to corrosion of cargo deck and platform walkways, and commented that the general visual condition of the facility seemed to have improved substantially from previous inspections. However, they stressed there was still substantial structural corrosion at the facility. They flagged up the need for potential enforcement and/or safety case revision, particularly with respect to some broad categories of safety critical equipment which UPS still acknowledged were in non-conformance to their respective performance standards due to corrosion. Worryingly, the inspection highlighted significant interface issues between UPS as facility operator and TSOGA as titleholder/client, as the personnel undertaking the corrosion related structural repairs (welders etc) had been directly engaged by TSOGA. It was not clear how these third-party personnel were able to perform repairs to UPS's satisfaction or standards as there was no evidence of agreed work packs based on the requirements of the relevant codes. This issue became the subject of NOPSEMA Recommendation 1826-20.

Although there does not appear to have been further discussion on other outstanding corrosion recommendations, one additional recommendation was raised concerning the need to risk assess the multiple examples of pipe clamps installed by the previous operator Woodside to repair damaged or corroded piping. Recommendation 1489-10 still remained open because NOPSEMA considered there was an absence of clear plans to remediate structural corrosion. It was looking for clear evidence of plans and progress towards remediating structural corrosion at the facility before considering that recommendation as closed.

The inspectors also assessed UPS's performance in inspecting, maintaining and repairing (IMR) safety critical equipment on the Northern Endeavour. UPS had a typical industry standard approach whereby any safety critical IMR tasks liable to become overdue had to be risk assessed and appropriate action approved. A backlog report for all such assurance activities showed that a significant number of these tasks, 118, were past their last allowable

⁶⁸ UPS sought a review of these Improvement Notices 731 & 733 by the Fair Work Commission, and an amended tank inspection schedule was subsequently agreed between UPS and NOPSEMA.

completion date, with almost 70 per cent still awaiting a risk assessment of the consequences and an approval of the IMR deferral. The inspectors concluded that UPS's technical integrity assurance activity deferral programme was not effective at the time of the inspection, and a number of recommendations were raised on this crucial topic.

At this inspection NOPSEMA also looked at issues of how UPS was managing issues of ageing and life extension (ALE), highly appropriate for a late-life FPSO approaching the end of its initial design life of 20 years. This topic was part of NOPSEMA's Annual Operating Plan for that year, and involved assessing UPS's approach, as operator of the Northern Endeavour, against a benchmark industry guidance on ageing and life extension. Inspectors found no evidence of a proactive strategy for ALE activities, and it was not clear how ALE issues were being managed in a logical, deliberate way. However, inspectors were advised that NOGA as titleholder had commissioned an ALE project to be completed later that year, although UPS had no direct control of the scope, delivery or timing of that project despite being the actual registered operator of the Northern Endeavour.

As a result of this inspection, NOPSEMA started to develop a suite of enforcement proposals which eventually led to the issue of Prohibition Notice 755 against UPS and General Direction 753 against TSOGA in July 2019.

Annex 3: Steve Walker biography

After obtaining a degree in Chemical Engineering and working in industry, Steve worked for the Health and Safety Executive (the UK government agency responsible for regulating work-related health and safety) for 38 years. His roles included inspections and audit, accident investigations, enforcement, and policy development.

In 2009 Steve became Head of HSE's Offshore Division, responsible for regulating about 300 offshore oil & gas installations. From 2012-2014, he was the chair of the North Sea Offshore Authorities Forum (NSOAF) and the inaugural co-chair of the European Union Offshore Authorities Group (EUOAG).

Steve retired from HSE in 2014, and has since done consultancy work on offshore regulatory issues.

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