NOPSEMA

25 July 2018

Senate Education and Employment References Committee

Inquiry into the work, health and safety of workers in the offshore petroleum industry

Clarification of issues and responses to questions on notice

National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

Introduction

This submission to the Senate Education and Employment References Committee has been prepared by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in response to an invitation from Committee Secretary Mr Stephen Palethorpe, to respond to questions taken on notice and to clarify specific matters raised at the Melbourne hearing held on 11 July 2018.

Further information where relevant to the submission is also included as Attachments for the Committee.

Any questions from the Committee regarding the submission or any other matters should be directed to:

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1. Questions on notice

(a) How many HSRs are signed up to *The Regulator*?

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1. The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) subscription records do not disaggregate the occupation of persons subscribing to NOPSEMA publications.
2. NOPSEMA is only able to confirm that 2330 persons subscribe to *The Regulator* magazine, a further 1004 persons subscribe to HSR news and 1320 persons subscribe to OHS news.
3. NOPSEMA makes every reasonable effort to ensure the workforce have access to *The Regulator* magazine. While it is always available online, NOPSEMA also provides printed copies to offshore facilities and NOPSEMA inspectors often take copies of the magazine onto facilities while on inspection. In the first quarter of 2018, NOPSEMA provided 222 printed copies of the last issue of the Regulator (Issue 1: 2018) to 28 operators for distribution to their offshore facilities.

(b) How many unannounced inspections, ever?

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4. NOPSEMA has the legislative powers to require access to facilities at any time. In order to avoid disruption or inadvertent risk creation, NOPSEMA usually conducts planned inspections where the operator is provided notification of the inspection, and the main purposes/scope of the inspection prior to the inspection. If NOPSEMA detects a potential breach of compliance that could present a significant increase in health or safety risks, NOPSEMA may make arrangements for arrival on the facility at short notice.
5. NOPSEMA does not own helicopters to attend a facility unannounced, and NOPSEMA always ensures that its own practices do not pose any additional safety risks to that facility.
6. NOPSEMA's Regulatory Management System (RMS) was not designed to produce reports to quantify unannounced, short notice and ad hoc inspections. The RMS is able to produce reports on the number of planned inspections and NOPSEMA averages about 100 OHS inspections per annum. Each manned production facility receives at least two (2) OHS inspections per annum. Mobile facility inspection frequencies will depend on the time that facility is within NOPSEMA's regulatory jurisdiction.
7. For the purposes of responding and providing context to this question, NOPSEMA has undertaken a desktop review of a representative sample of inspection reports to provide further information on inspections where notification of the inspection was provided at short notice and where matters to be inspected were not shared with the operator.
8. Since NOPSEMA was established in 2012, operators of offshore petroleum facilities have always been advised of an inspection prior to NOPSEMA staff arriving on board the facility. This practice is the only realistic and safe approach when helicopter travel is involved to access a facility.
9. Arriving at the majority of offshore facilities requires the NOPSEMA OHS inspector to take two forms of transport, fixed wing aircraft and rotary transport. Flights to Karratha, Darwin, and Broome are common, prior to securing rotary transport out to the facility.
10. If NOPSEMA takes the term unannounced to mean an inspection scope or issue is explored by a NOPSEMA OHS inspector, where the operator has no advance warning of this matter, NOPSEMA can confirm that for OHS inspections there are a number of matters a NOPSEMA OHS inspector will look into that the operator is not advised of in advance. These additional matters are included as additional scope items during the inspection and are documented in the inspection report. A review of all inspection reports from 2017 identified that 86% of 2017 inspections addressed matters not contained within the inspection brief provided to the operator. Regulatory responses to these matters included the issue of one OHS improvement notice (OHS Improvement Notice 636), and 145 recommendations. Matters identified outside of the planned inspection scope have included:

- Corrosion
- Helideck

- Emergency actions and evacuation arrangements
- Fall protection
- Lifting equipment
- Personnel qualifications
- Safety critical audits
- Chemical exposure
- Fire doors
- Scaffolding
- Outstanding maintenance work orders
- Process isolation management
- Occupational health risks including potable water, food hygiene, vibration and manual handling

11. **Attachment A** provides extracts from 2017 inspection reports of matters investigated during an inspection that were separate to those matters set out in the inspection scope.

12. Since 2012, NOPSEMA has conducted at least eleven (11) short notice inspections where the operator has had five (5) days or less notification. Five of these were office-based inspections, and one was in response to a provisional improvement notice (PIN) issued by a HSR. Of these 11 inspections, one was in 2013, two were in 2015, six were in 2017, and two were in 2018.

13. The onshore inspection is a review of records that would normally be inspected offshore. Documents relevant to the safe operation and management of that facility are available for review and inspection onshore, and a NOPSEMA OHS inspector is able to determine during these inspections, through a review of the operator's records (to include processes, procedures and management systems) if there are any short comings.

14. NOPSEMA has also conducted a number of inspections where the scope of a particular inspection involved inspecting and investigating another facility. Inspection Reference No. 1539 of January 2017 involved a NOPSEMA inspection of Facility A [redacted] where NOPSEMA was notified of a gas leak on Facility B [redacted]. NOPSEMA inspectors obtained more comprehensive information on the aspects of the leak from telephone discussions with the operator's investigation team. NOPSEMA inspectors on Facility A referred incident information to the NOPSEMA inspection team scheduled to attend Facility B in January 2017. So while the NOPSEMA inspectors were on Facility A, they were able to leverage their location on Facility A to collect information about a situation occurring (as it was ongoing) on Facility B.

15. The NOPSEMA OHS inspector has an average of at least 20 years practical oilfield experience, many have overseas as well as Australian experience. All NOPSEMA OHS inspectors have relevant qualifications covering a number of disciplines to include engineers, mariners, divers, scientists and behavioural science experts.

(c) How many provisional improvement notices have been issued in your regime?

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16. There is no obligation under the OPGGS Act for HSRs to inform NOPSEMA about provisional improvement notices (PINs) raised. PINs are typically only brought to NOPSEMA's attention if a person to whom a PIN has been issued requests an inspection of the matter giving rise to the PIN. There may be a number of PINs raised by HSRs with operators that are resolved and NOPSEMA is not notified.

17. Since 2005, under NOPSA and later under NOPSEMA, there have been twelve (12) PINs that have been brought to NOPSEMA's attention.

    - Two (2) in August 2005, PINs varied via a NOPSA OHS improvement notice and request for safety case revision

- Two (2) in July 2008, NOPSA advised for information only (matter resolved and no request for NOPSA inspection)
- One (1) in April 2012, PIN cancelled, eight (8) NOPSEMA recommendations raised
- One (1) in June 2012, PIN cancelled, one (1) NOPSEMA recommendation raised
- One (1) in November 2012, PIN cancelled
- One (1) in May 2015, status unclear, 14 OHS Improvement Notices issued (same issue 14 facilities)
- One (1) in July 2015, PIN cancelled and replaced by two (2) OHS Improvement Notices and one (1) OHS Prohibition Notice
- One (1) in October 2016, PIN cancelled and replaced by five (5) NOPSEMA recommendations
- One (1) in November 2016, PIN cancelled, (1) recommendation made
- One (1) in May 2017, NOPSEMA advised for information only (matter resolved and no request for NOPSEMA inspection)

(d) How many PINs have you verified and what is the process?

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18. Please refer to paragraph 17 above noting clause 39 of Schedule 3 under the OPGGS Act provides for a NOPSEMA inspector to conduct an inspection and make a determination on the matter as follows:

> *Request for OHS inspection*
>
> *(1) Within 7 days after a notice is issued under clause 38:*
> *(a) the responsible person; or*
> *(b) any other person to whom a copy of the notice has been given under subclause 38(8);*
> *may make a request to NOPSEMA or to a NOPSEMA inspector that an OHS inspection of the matter be conducted.*
>
> *(2) Upon the request being made, the operation of the notice is suspended pending the determination of the matter by a NOPSEMA inspector.*
>
> *OHS inspection*
>
> *(3) As soon as possible after a request is made, an OHS inspection must be conducted of the work that is the subject of the disagreement, and the NOPSEMA inspector conducting the inspection must:*
> *(a) confirm, vary or cancel the notice and notify the responsible person, and any person to whom a copy of the notice has been given under subclause 38(8), accordingly; and*
> *(b) make such decisions, and exercise such powers, under Part 4 of this Schedule, as the OHS inspector considers necessary in relation to the work.*

19. HSRs have made contact with a NOPSEMA OHS inspector prior to issuing a PIN to seek step by step guidance on the type of detail to include in the Notice and the process to follow. There are multiple examples similar to the summary provided in the PIN extract below. HSR training material and the HSR Handbook updated in 2016, developed by NOPSEMA, also provide information for HSRs on the raising of PINs.

Extract - NOPSEMA inspector providing written advice to a HSR on raising the PIN

I have attached the PIN form. If you choose to issue a PIN, You need to issue it to the responsible person or persons (which I assume would probably be the X and Y persons)….ensure you have consulted management (this is a requirement of the legislation) in an attempt to reach agreement on rectifying the contravention. Talk to them in regards to your concerns. They have made a commitment to the replacement of the [redacted] on [date] which is good progress. Document any meetings and outcomes.

If you end up issuing a PIN, it may be a good idea to discuss a timeframe with management. It has to be no less than 7 days and reasonable in your opinion.

When you state the contravention make sure you reference the [redacted] procedure that you believe they are not complying with (for example chapter 2 paragraph 4 of the operations manual, Doc XXXX rev 0, where it states ".....")

In regards to industry practice in replacing [redacted], there is no actual prescriptive standard. ... The requirements tend to vary in consideration of frequency of use, condition and the environment etc. Some operators [redacted] and replace [redacted]. However if [redacted] have made a commitment in their procedures for 2 yearly change out, they should abide by their procedure unless they have a good engineering basis to extend frequency..You do not need to attach any material to the PIN, however you may wish to for ease of reference (for example the page/s that you reference in your pin).

I hope you get the matter resolved.

(e) Are any of those PINs included in the seven short notice inspections?

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20. NOPSEMA advised the Senate Committee at the hearing in Melbourne on 11 July 2018 that NOPSEMA was aware of at least seven (7) short notice inspections. This submission clarifies at paragraph 13 that since 2012 there were at least eleven (11) short notice inspections, including the seven stated at the hearing. Of the initial seven (7) short notice inspections stated at the hearing, one of these included a NOPSEMA inspection in response to a PIN.

(f) Can you give me the names of who those companies are that provide training for HSRs and the specific trainers' backgrounds?

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21. The NOPSEMA website provides the name of companies and companies' details that deliver HSR training.

Industrial Foundation for Accident Prevention (IFAP)
Phone: (08) 9430 6611
Email: ifap@ifap.asn.au
Web: www.ifap.asn.au

OilSafe Solutions
Phone: (08) 9474 5406
Email: enquiries@oilsafesolutions.com.au
Web: www.oilsafesolutions.com.au

Unity Training Services
Phone: (08) 9227 7809
Email: admin@unitytraining.com.au
Web: www.unitytraining.com.au

LE Industry Services Pty Ltd
Phone: (03) 5126 0395
Email: admin@leindustryservices.com
Web: www.leindustryservices.com

Federation Training
Phone: 1300 133 717
Email: enquiries@federationtraining.edu.au
Web: www.federationtraining.edu.au

22. NOPSEMA's accreditation process comprises three main elements:
    - A review of the developed training material
    - A review of the training provider's organisation and personnel structure
    - An onsite visit of the training premises.
23. The main elements necessary for accreditation are:
    - Training course material conforms to the endorsed course outline
    - Confirmation of Registered Training Organisation status
    - Experience in OHS and training HSRs
    - Knowledge of the offshore petroleum industry.
24. NOPSEMA accredits the training companies and does not accredit its trainers. The specific background of trainers is summarised in this submission with personal details redacted. On review of trainers' backgrounds, relevant work experience and professional qualifications provide evidence that trainers are appropriately qualified with experience in OHS, training, and many with practical knowledge and experience of the oil and gas industry. The resume of each trainer provides extensive information about the range of studies and employment of trainers. Not every resume detail is included in the summaries provided on the next page.

Trainer (A) – name redacted

Eighteen years technical experience in various industrial plants with differing processes and applications across Australia to include offshore oil and gas companies. Several years' experience in delivering training to industry as a member of the workforce and as an independent trainer.

Trade and Training qualifications covering:

- Certificate of Proficiency - Instrument Making and Repairing (Registration No -)
- Restricted Electrical Mechanic Licence - Class S (Registration No -)
- Advanced Diploma Management (Current Studies)
- Diploma Instrument Control Engineering
- Diploma of Technical Teaching (Registration No -)
- Certificate of Technical Teaching (Registration No -)
- Certificate IV in TAE
- Advanced Certificate of Instrument Technology
- Technician Certificate Process Control
- Supervision Certificate (Industrial)
- Electronic Technician Certificate
- Certificate IV Occupational Health & Safety
- Certificate IV Quality Management and Assurance.

Trainer (B) – name redacted

OHS Coordinator with responsibility for organisation's Safety Management System, conduct safety audits and investigate all reports of hazards and/or incidents and provision of advice to Directors in respect of OH&S issues. 13 years' experience as a trainer and assessor for both nationally endorsed and non-accredited training

courses including Cert III in Surface Extraction Operations, Construction Induction Card, permit training and site induction, confined space entry, manual handling and delivery of OH&S training courses.

15 years' experience working in the mining sector including roles as both an operator and supervisor. Experience and knowledge in relation to commissioning of large mining machinery and mobile plant operations. Knowledge of OH&S and environmental impacts of mining operations in relation to the use of plant within the mining environment.

Trade and training qualifications covering:

- Certificate IV in Assessment and Workplace Training (BSZ 40198)
- Cert 1V in Training & Assessment TAA40104
- Cert IV in Training and Assessment TAE40110
- Certificate IV Occupational Health & Safety (BSB 41407)

Trainer (C) – name redacted

OHS trainer since 1999. Over thirty years' experience in managerial and technical support roles in the oil refinery, gas production, power generation and mining industries. Extensive experience in managing OHS and emergency service functions to mining companies in Australia and overseas, with experience in implementing safety management and improvement systems.

Trade and training qualifications covering:

- Graduate Diploma in Occupational Hazard Management
- Certificate IV in Training and Assessment
- Overseas Chemistry qualifications
- Diploma in OHS and OHS Auditor Training
- Advanced Loss Control Management
- Surface Ventilation Certificates III and IV
- Australian Standards Subcommittee – sampling and chemical analysis of iron ore

Trainer (D) – name redacted

A number of years' experience working in the construction industry covering formwork, scaffolding, concrete repair, hydro-demolition and water jetting and in other management roles. Delivering OHS training since 2010. Elected as a HSR in 2011 and is an active member of the Safety Working Group and other OHS consultative mechanisms.

Trade and Training qualifications covering:

- Diploma in OHS
- Certificates III and IV in OHS
- Certificate IV in Training and Assessment
- Risk Management Masterclass
- OHS for supervisors
- Restricted asbestos licence
- High Risk Work Licence

Trainer (E) – name redacted

Health, safety, environment, and emergency services specialist with 25 years' experience in the oil and gas, mining, civil power, heavy manufacturing/chemical, infrastructure, marine operations and civil construction industries. OHS trainer since 2013, safety manager since 2006.

Trade and training qualifications including:

- Master of Occupational Health Safety and Environmental Management
- Certificate IV Training and Assessment
- ICAM Lead Investigator
- Injury Management
- ISO Site Quality Management Auditing
- Emergency Fire, Rescue, and First Aid Operations Management

Trainer (F) – name redacted

Elected HSR in a number of roles from 1987. Safety professional since 2008 in roles including work safety centre coordinator, health safety and risk manager, and work health and safety consultant. OHS trainer since 2015.

Trade and training qualifications include:

- Bachelor of Education
- Certificate IV in Assessment and Workplace Training
- Certificate IV in Occupational Health and Safety
- License to Perform High Risk Work – WP
- License to Perform High Risk Work – LF

Trainers (G) and (H) – names redacted

Trainer G is a former teacher specialised in English and communications skills and provides training to a wide range of persons in the oil and gas industry.

Trainer H has more than 32 years of experience in the oil and gas industry (mostly drilling) and consultant in the oil and gas industry specialising in risk engineering. Both trainers have experience in delivering training on:

- Hazard and risk management
- Safety management systems
- Regulatory compliance
- Audits
- Incident investigations
- Training

Trainers (I), (J), and (K) – names redacted

Trainer I holds a Bachelor of Arts in Training and Development, a certificate IV in OHS and a certificate IV in training and assessment. Trainer J holds a certificate IV in OHS and a certificate IV in training and assessment. Both Trainer I and Trainer J are trainers for other HSR courses accredited by Worksafe and various Government agencies.

Trainer K has worked as a training and safety consultant since 2001 providing services for various industries to include mining and oil and gas. Trainer K also has previous experience working for an Australian Government Department. Trainer K's qualifications cover:

- Certificate IV in Assessment and Workplace Training
- Graduate Certificate in Management
- Graduate Diploma in Occupational Health and Safety
- Advanced Certificate in Insurance Administration
- Diploma in Public Administration

(g) Do you have a process to make sure that consultation for safety cases does take place and that it is true consultation?

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25. OPGGS Safety Regulation 2.11 addresses involvement of the workforce as follows:

(1) The operator of a facility must demonstrate to NOPSEMA, to the reasonable satisfaction of NOPSEMA, that:

(a) in the development or revision of the safety case for the facility, there has been effective consultation with, and participation of, members of the workforce; and

(b) the safety case provides adequately for effective consultation with, and the effective participation of, the members of the workforce, so that they are able to arrive at informed opinions about the risks and hazards to which they may be exposed on the facility.

(2) A demonstration for paragraph (1)(a) must be supported by adequate documentation.

(3) In subregulation (1):

members of the workforce includes members of the workforce who are:

(a) identifiable before the safety case is developed; and

(b) working, or likely to be working, on the relevant facility.

Note: Part 3 of Schedule 3 to the Act sets out the broad consultative provisions that apply, including provisions for the establishment of designated workgroups, the election of health and safety representatives and the establishment of OHS committees.

The arrangements under these consultative provisions should be used for consultation with members of the workforce about the development, preparation and revision of the safety case.

26. The safety case assessment process includes consideration of documents provided by the operator (1)(a).

27. Evidence of workforce consultation and participation in the development or revision of the safety case forms part of the acceptance criteria for a new or revised safety case. An inadequate demonstration of effective consultation with, and participation of, members of the workforce in the development or revision to a safety case has contributed to the rejection of some safety cases.

28. During the hearings of 11 July 2018 the ACTU stated the following (Hansard p. 34) *"To set up a facility in Australia, you need a safety case. It's done at the very beginning of the process when very few hands-on workers are yet employed. That's done by contractors typically, later. So the safety case is developed and approved with almost no workforce involvement. It's only able to be reviewed after a five-year period, and of course that's beyond the life of most offshore petroleum facilities in Australia."*

29. NOPSEMA offers the following information to correct claims made within the ACTU statement:

For new facilities, NOPSEMA can advise that for the facilities most recently constructed in the Australian offshore petroleum regime, members of the workforce employed onboard those facilities were also employed during the building stages in Korea. Members of the workforce had demonstrably been consulted for the various safety cases submitted to NOPSEMA for assessment well after the majority of the workforce had been employed. The evidence for workforce engagement provided with the safety case submissions demonstrated that these engagement activities included technicians at the "shop floor" level.

For existing facilities, there are a range of triggers for the revision of a safety case that must be submitted to NOPSEMA which are broadly characterised as "change of circumstances or operations" (Refer Regulation 30 of the OPGGS (Safety) Regulations". Since 2005 a total of 1,239 safety case submissions have been made to NOPSEMA covering 356 facilities (pipeline facilities excluded). Revised safety case submission due to changes in circumstances or operations account for 76% (799) of these revised safety case submissions (1,051) whereas 5-year revisions only account for 18.5% (194). In the same period 188 new safety case submissions were also made and 34 revisions were requested by NOPSEMA.

(h) The areas where your legislation differs from most other jurisdictions, in areas such as the ability of HRSs:

- **Autonomously determine the manner in which they select HSRs or work groups**
- **Entitlement of HSRs to a specified amount of training**
- **The ability of HSRs to choose which training course they undertake**
- **The requirement for operators to cover the costs of HSR training**
- **The requirement for operators to provide the regulator with the current list of HSRs**
- **The ability of the regulator rather than a court to disqualify the HSRS**
- **Union right of entry for OHS purposes.**

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30. The above question taken on notice by NOPSEMA relates to a legislative comparison between the OPGGS Act and the model WHS Act. The Department of Industry, Innovation and Science (DIIS) has advised the Committee Secretariat, and the Committee Secretariat has agreed, for DIIS to respond to this specific question as it relates to policy and the legislative framework.

2. Clarification of specific matters

i. How many companies operate in the space you regulate?

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31. Under Schedule 3 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) the primary duty holder for OHS is the operator of a facility.
32. Operators of facilities have day-to-day management and control of facilities and operations at facilities and must be registered with NOPSEMA.
33. There are currently 56 operators of facilities (the register of operators is published on the NOPSEMA website).
34. Other specified duty holders include:
    - persons in control of parts of a facility or particular work,
    - employers,
    - manufacturers in relation to plant and substances,
    - suppliers of facilities, plant and substances,
    - petroleum titleholders in relation to wells
    - greenhouse gas titleholders in relation to wells,
    - Persons erecting facilities or installing plant
    - Persons in relation to OHS
35. NOPSEMA does not record or track the numbers of other specified duty holders.

ii. So all the contracting companies will have HSRs and every work area has a HSR?

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36. NOPSEMA considers the line of questioning put to NOPSEMA about work areas, HSRs, contractors and operators has created confusion on relevant facts of the matter, given the questions involved interchangeability between the term operator and contractor and how HSRs are established under the OPGGS Act.
37. NOPSEMA seeks to clarify that under the OPGGS Act:

- a member of the workforce or workforce representative may request to enter into consultations to establish designated work groups (DWGs)
- the operator must enter into consultation on the establishment of a DWG within 14 days of the request and the operator must establish the DWG within 14 days of completion of consultations.

38. Under the OPGGS Act the workforce selects the HSR by unanimous agreement or by conducting an election, the HSR is not selected by the operator. NOPSEMA notes the Unions consider that the workforce should be able to select the HSR by any other means.
39. The selected HSR represents their DWG, not their employer group.

iii. Are you aware of any workplace where there's more than one safety case available for workers to inspect?

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40. NOPSEMA OHS inspectors advise that multiple safety cases are made available in various locations on a facility. Each facility will differ, and safety cases are typically available in the library, the control room and the OIM's office. Most facilities also have safety cases available electronically with all members of the workforce able to access a computer to view the safety case. It is not correct to generalise that members of the workforce are only able to access the safety case in front of supervisors and facility management.

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41. NOPSEMA OHS inspectors advise that it is not general practice for HSRs to make appointments with management to look at the safety case and where this may occur on a few facilities, HSRs have not made a formal complaint to NOPSEMA about not having access to the safety case. HSRs at any time, can raise with a NOPSEMA inspector any issues about the adequacy of measures within the safety case. This will involve the NOPSEMA OHS inspector looking into the matter and can lead to NOPSEMA issuing a request for a revision to a safety case.

iv. If NOPSEMA had a schedule or list of HSRs on each rig they would be able to advise those health and safety reps

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42. The operator of a facility maintains and publishes a list of HSRs. When a NOPSEMA OHS inspector attends a facility the operator is instructed to make HSRs aware on the facility, of NOPSEMA's attendance. Some of the newer and larger facilities have large numbers of members of the workforce. Everyone is provided opportunity within the 3-4 days a NOPSEMA OHS inspector is on a facility, to approach the inspector. This may also occur post inspection and at any other time.

v. HSR consultation and engagement

[Issues discussed throughout Committee Hansard – pgs 18-40]

43. NOPSEMA's regulatory management system (RMS) records and reports information relevant to specific regulatory functions such as assessments, inspections, notifications of dangerous occurrences and enforcement actions. The RMS stores information that proves NOPSEMA actively engages various members of the offshore petroleum workforce but it was not designed to disaggregate and report the quantitative contact undertaken by NOPSEMA with a specific member of the offshore petroleum workforce such as a HSR, offshore installation manager, a driller, or engineer.

44. Information about engagement with HSRs for the purposes of inspections is identified in the inspection scope item 'Consultation with Health & Safety Representatives and members of the workforce' which is selected for every facility-based OHS inspection conducted. There are no (0) facility-based OHS inspections where HSRs are not provided an opportunity to meet with NOPSEMA inspectors in private. However there may be times that some HSRs do not attend that meeting. The inspection report will document the interaction with HSRs and the workforce; a meeting attendees register forms an appendix to the inspection report. If there is a designated work group established at that facility, where a HSR has been elected, the NOPSEMA OHS inspector must give the HSR a reasonable opportunity to consult on the inspection of that facility, this occurs and is mandated under Schedule 3, clause 50(3) of the OPGGS Act.

45. There are some office-based inspections conducted, (e.g. initial follow-up to a notification or pipeline facilities when those pipelines do not connect to a normally attended facility within NOPSEMA's jurisdiction) and at these onshore inspections, HSRs do not typically attend, however they are not precluded by NOPSEMA; the issue is that HSRs are not typically on duty to attend onshore meetings.

46. NOPSEMA receives and proactively responds to issues raised by HSRs. Case studies 1-4 below provide a representative sample of HSR and NOPSEMA engagement to resolve OHS issues.

Case study 1: HSR Provisional Improvement Notice leads to Enforcement Action (Ref No: 1303)

The facility HSRs raised a PIN in response to a dangerous occurrence, and were unable to reach an agreement with the facility operator to resolve the matter.

NOPSEMA received a request to conduct an inspection of the matter in accordance with the OPGGS Act.

On completion of the inspection, NOPSEMA inspectors cancelled the PIN and replaced it with a suite of significant enforcement actions to include an OHS Prohibition Notice, two OHS Improvement Notices and four inspection recommendations.

Case study 2: Protecting HSR confidentiality (Ref No: 1496)

NOPSEMA inspectors met with HSRs who advised about certain faulty equipment leading to adverse health outcomes. HSRs expressed concerns about potential ramifications to their job security if they raised this issue with facility management.

NOPSEMA inspectors recorded the faulty equipment in the 'General Health and Safety Observations' section of the inspection report rather than associating it with the HSR meeting.

An inspection recommendation was raised requiring the operator to ensure that health outcomes were maintained, following which the operator implemented a solution.

Case study 3: HSR requests NOPSEMA considers issues in its Inspection scope (Ref No: 1683)

An inspection scope item covering personnel, competence, training and behaviours was selected as a HSR at the previous inspection had expressed concerns about training being expired, inappropriate, and overdue.

The NOPSEMA inspector had received a follow-up email from a HSR detailing specific concerns about training.

The inspection focused on the specific concerns raised both at the previous HSR meeting and within the text of the email. Three recommendations were raised in relation to this topic.

Case study 4: HSR raises training issues with NOPSEMA (Ref No: 754, 970)

Sometimes HSRs employed by a contracting company, experience difficulties with their employer agreeing to accredited HSR training. Generally, this issue is resolved through a conversation between the NOPSEMA inspector and the operator's facility management, who promptly make contact with the contracting employer to ensure that HSRs are booked on the training.

During an inspection, a HSR had not received the training despite requesting it through his employer, the contracting company.

The inspectors spoke to the operator prior to leaving the facility. The inspectors received email evidence the contracting company had booked the training and the operator agreed to pay for it.

47. **Attachment A** provides extracts from 2017 inspection reports of matters discussed during meetings between NOPSEMA inspectors and HSRs during offshore inspections.

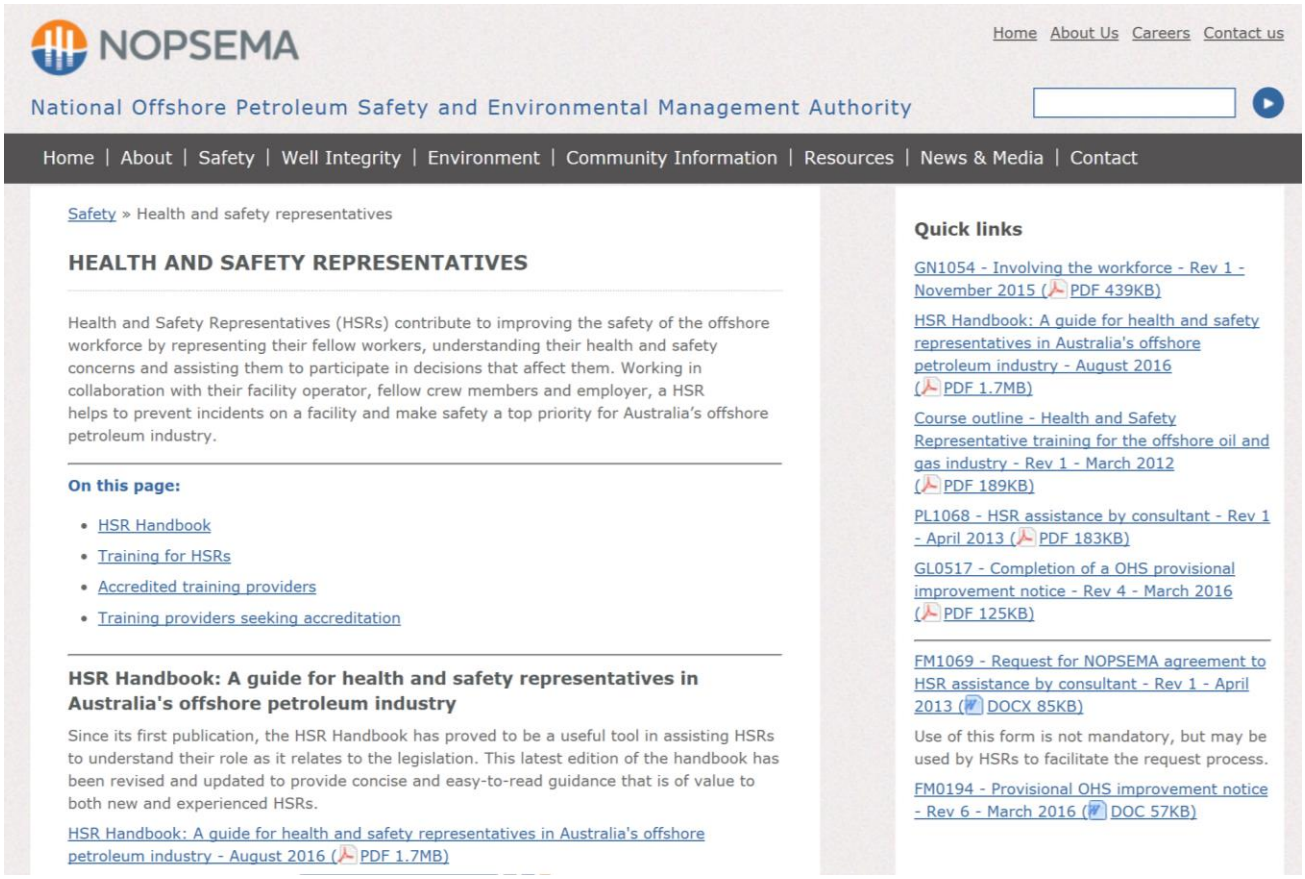
48. NOPSEMA's RMS data covering reports made about dangerous occurrences or information about persons raising regulatory issues and complaints with NOPSEMA, reflect more than 2100 records since 2012. NOPSEMA's engagement register includes more than 1600 records of engagement with duty holders since 2012. A system search of these records does not identify a pattern of HSRs or other members of the workforce referring to NOPSEMA as a toothless tiger or incompetent.

HSR portal

49. It was put to the Senate Committee at the hearing held in Melbourne on 11 July 2018 that NOPSEMA should provide HSRs with coded electronic access to safety cases via its website. NOPSEMA is of the view all members of the workforce should have access to the safety case, and safety cases are currently available to members of the workforce through their workplace. NOPSEMA's IT platform was not established to allow for external access by non-NOPSEMA employees to NOPSEMA's network. The website is not established with appropriate security mechanisms to host confidential industry information, such as safety cases. There are a number of significant privacy and security risks associated with external access to documents either through the NOPSEMA website or network.

50. NOPSEMA's website has a dedicated public portal for HSRs to access relevant information to enable HSRs to exercise their powers under the OPGGS Act and associated regulations (see Image 1).

Image 1: NOPSEMA website



51. The following information is available to HSRs:

- HSR Handbook: A guide for HSRs that provides clear guidance on the legislation for both new and experienced HRS.
- Course outline and training modules for HSRs
- List of accredited trainers and information on how trainers are accredited
- Guidance on how to raise and complete forms associated with the issuance of a provisional improvement notice
- Guidelines on how to involve the workforce on the development of the safety case, setting out how effective workforce involvement requires careful consideration of:
    - the reasons for workforce involvement
    - who should be involved
    - the timing and duration of involvement
    - the subject matter
    - where the involvement should take place
    - how the workforce should be involved.

Protections for the offshore workforce making complaints

52. Under the Clause 88 of Schedule 3 OPGGS Act - an employee must not be dismissed or be prejudiced because the employee has complained or proposes to complain about a matter concerning OHS or has assisted in a matter about OHS.

53. It is an offence if an employer (whether operator or other person) engages in conduct or breaches this requirement – 600 penalty units.

Qualifications of the offshore workforce

54. The OPGGS Act specifies the operator must ensure all personnel are provided with the information, instruction, training and supervision necessary to carry out their work safely. The regulations stipulate the

safety case must describe the means by which the operator will do so. NOPSEMA Inspectors then test that these means are implemented, functional, maintained and audited.

55. Competence is included as an inspection element within each OHS inspection scope item. It considers whether personnel are competent to perform their tasks in relation to that scope item (e.g. whether crane drivers and dogmen are competent to perform their function within the inspection scope item of 'MAE - Dropped Objects'). This involves:

    - a review of the operator's training matrix
    - viewing training records and certificates for individual workers
    - talking with members of the workforce to test their understanding of the work they are performing, the hazards and controls, etc.

Government and other independent reviews

56. Every Government and independent review into NOPSEMA has found NOPSEMA to be a competent regulator, with confidence in NOPSEMA's capabilities recognised by all Government parties and stakeholders. This information is a public record. Opportunities for administrative improvements have been made, this is not unique to any regulator and NOPSEMA has considered and implemented a number of improvements such as adopting a more strategic approach to compliance, increased guidance and communication materials for members of the offshore workforce, increased engagement and transparency of decision making.

Maritime and offshore jurisdictions

57. The Senate Committee heard at the hearing held on 11 July 2018 in Melbourne, that NOPSEMA effectively manages its relationship with AMSA regarding jurisdictional issues. The Hansard provides on page 39 that Mr Stuart Smith of NOPSEMA advised that a vessel within 500 metres of a facility comes under the jurisdiction of NOPSEMA. This information is incorrect and this advice was never given. NOPSEMA provided clear and concise information at the hearing about any perceived jurisdictional issues.

58. NOPSEMA has also published a Guidance Note (GN1661) to clarify the situations in which a vessel will be subject to the Australian Offshore Petroleum legislation.

vi. International comparisons – UK and Norway

59. During the hearings of 11 July 2018 the ACTU tabled several documents relating to an international study mission undertaken by the ACTU which involved ACTU officials visiting the United Kingdom and Norway. It is noted that the ACTU recognise these jurisdictions as providing best practice models for OHS regulation offshore and are seen as leading models for tripartism between industry, unions and regulators. It is also noted that the criticisms levelled by the union movement against NOPSEMA and the OPGGS Act are consistent with the criticisms levelled at the equivalent regulators and legislation in those models for OHS regulation offshore that are claimed to be best practice.

60. NOPSEMA maintains close relationships with its international regulatory counterparts though the International Regulators Forum (IRF). In September 2017, NOPSEMA's CEO met with British regulators including the Health and Safety Executive (HSE) and the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED). Following this, in June 2018, NOPSEMA's CEO and Head of Division, Safety visited Aberdeen, Scotland to attend the IRF Annual General Meeting and to engage with offshore regulators in these jurisdictions.

61. Arising from that visit, observations from interactions with other international offshore safety regulators relevant to matters raised through the Committees inquiry into the work, health and safety of workers in the offshore petroleum industry were recorded. These included that;

    - In regard to compliance monitoring activities by the Petroleum Safety Authority (PSA) in Norway, it was noted that unions have been challenging the PSA on why they don't do more unannounced visits to facilities and raising claims that the regulator is too soft on industry.
    - Norway noted that it is under pressure from the new Government to take more prosecutions and enforcement actions. This pressure was suggested to be the result of the public not really understanding the impact of other interactions that the PSA has with the industry in Norway. Similar

comments were provided by the Netherlands which noted that working with the companies tends to produce more effective safety outcomes but this isn't always recognised or appreciated.

- It was noted by the UK that fines in the UK for breaches of OHS legislation such as hydrocarbon releases have gone up massively. Despite this increase in fines, the HSE also noted that shutting down a facility is still often more effective in delivering safety outcomes. This was attributed to factors such as the immediate effect of prohibition notices, thereby stopping the conduct, getting more interest from shareholders, engaging leadership and potentially greater financial impacts with such notices than the outcome of prosecutions.

3. West Tuna Platform Incident

62. A confidential copy of the NOPSEMA inspection report is provided as a separate document. Matters raised at the hearing that require further clarification of facts are set out below:

    1. The battery fire incident occurred at 22:45 hours on 8 September 2015
    2. Operator notification to NOPSEMA at 02:20 hours on 9 September 2015
    3. Permission was given to disturb the site and a request was made to have the area extensively photographed before the area is disturbed and to make the photographs available to the NOPSEMA focal point Inspector. The operator agreed to the request.
    4. The platform was shut down (i.e. production ceased and the facility was blown down)and NOPSEMA immediately commenced enquires with the operator into the incident and at the same time prioritised inspections of other Bass Strait producing platforms with regards to: “Control of electrical hazards. Focus on Battery room in response to WTN Battery room fire”.
    5. A total of 9 inspections occurred in response to the West Tuna incident and were conducted over four and half months as follows:

       #1282 Barracouta planned inspection (PI) dates 29-30 September 2015

       #1283 Snapper PI dates 30 September 2015 – 1 October 2015

       #1281 Kingfish B PI dates 13-15 October 2015

       #1246 Tuna PI dates 10-11 November 2015

       #1250 West Tuna PI dates 11/11/2015 – 12/11/2015 (Inspection report attached)

       #1312 Fortescue PI dates 24-25 November 2015

       #1285 Kingfish A PI dates 2-3 December 2015

       #1357 Halibut PI dates 17-18 February 2016

       #1356 West Kingfish PI dates 16-18 February 2016

63. NOPSEMA issued 20: Recommendations including requesting EAPL to:

“Ensure a review of standards is undertaken including, but not limited to AS 2676.1, AS2676.2, EN 50272-2, DNV Offshore Standard DNV-OS-D201, DNV-GL Maritime rules and regulations and OEM recommendations for requirements of battery storage installations (design), temperature control, battery load testing, earth leakage detection, maintenance and battery life for BTA facility. Conduct a gap analysis between the review to current EAPL practice, and identify controls including any other practicable controls to be implemented to ensure battery systems used at the facility are safe and without risk to health - OPGGSA 2006 schedule 3 clause 9(2)(c) and clause 9(2)(d).”

64. All recommendations have been complied with to NOPSEMA’s satisfaction.

65. NOPSEMA issued the NOPSEMA Safety Alert 61 published on 4th November 2016(Attached).

66. Safety Case revisions – continuous improvements. The current Esso Australia Pty Ltd 5-yearly safety case revisions now include an ALARP discussion on learnings from the WTN battery fire and the pathway “Battery explosion/fire” has been added to the bow tie diagram as part of Major Accident Event MAE 13 – Electrocution or electrical explosion, subsequently assessed and accepted by NOPSEMA.

vii. Did NOPSEMA conclude that battery rooms should have gas detection systems?

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67. Under Australia’s objective-based regulatory regime NOPSEMA doesn’t mandate specific controls. The duty rests with the operator to ensure that all reasonable practicable steps are taken to ensure a facility is safe and without risk to the health of any person at or near the facility.

68. NOPSEMA expects operators to have regard to a wide range of information from standards, safety alerts, investigations, etc., when assessing the risks and subsequent controls associated with batteries.

4. Alleged Cobia platform incident

[Page 11 – Committee Hansard]

69. The Cobia platform is an unmanned platform and is not a producing platform. NOPSEMA has not received a notification of an accident or dangerous occurrence under clause 82 of Schedule 3 of the OPGGS Act of the alleged incident associated with constant deluge.

On 11 July 2018, Esso advised NOPSEMA that routine maintenance work on the deluge equipment on the Cobia platform had been undertaken. Esso further advised that this maintenance work did not require the deluge system to be activated and that the system had not been activated.

ATTACHMENT A: Summary of NOPSEMA and HSR engagement during 2017 OHS inspections

Inspection ID	Brief issued	Inspection start Date
1696	25/10/2017	27/11/2017
HSRs		
The inspectors met with three HSRs. It was noted that all roster panels are represented by HSRs and that all HSRs have received appropriate training. The HSRs reported that the relationship of the HSRs with facility management is responsive. Actions arising through safety meetings are tracked through minutes. The HSR status of the new contractor workforce is uncertain. It could not be verified that this workgroup is represented. This was discussed with the OIM and will be monitored and followed up at the next NOPSEMA planned inspection.		
'General observations'/ Emerging scope items		
The inspectors interviewed a member of the workforce who was employed as the sentry at a Confined Space Entry (CSE) tank inspection work front. It was found that this person was aware of the conditions of the relevant Permit to Work, the CSE rescue plan and his sentry duties. The inspectors noted that there were no car seals attached to critical valves in the port emergency fire pump room. It is noted that there are valves implemented at the emergency fire pumps that must be either open or closed in order for the pump to fulfil its role when remotely started in an emergency. It is considered that applying car seals to critical fire-fighting system valves would further reduce the risk of a MAE control failure. It is recommended that Operator consider applying car seals to critical valves on active fire-fighting systems. **Recommendation 1696-11** Operator *to consider the use of car seals on critical valves in the facility active fire protection systems.* During the physical inspection of the facility topsides the inspectors identified two instances where the risk of death or injury due to a fall from height was not adequately controlled: a. An unguarded falls risk from the top platform of HP Separator, on the inboard side of the platform (see photo 13). b. Access ladders to the top platform of HP flare Knock Out Drum were not fitted with fall arrest equipment. It was estimated that vertical fall from the top of this ladder is in excess of 4 metres (see photo 12). **Recommendation 1696-12** Operator *to ensure that the handrails on the HP Separator top platform are reviewed to ensure that any gaps in the handrail are effectively filled to eliminate the falls risk.* **Recommendation 1696-13** Operator *to consider the implementation of fall arrest equipment in cases where the primary access to an area is via a vertical ladder.*		

During a review of some maintenance work orders the inspectors observed that the Deluge skid testing response time did not comply with the Operator performance standard but was marked as compliant in January 2016. The operator provided an explanation that since that time Operator has implemented processes that would prevent this type of discrepancy. The operator was informed that NOPSEMA would monitor and follow this up at future planned inspections.

Corrosion was observed on the emergency generator exhaust piping (see photos 14 & 15).

Recommendation 1696-14

Operator *to ensure that the corrosion on the emergency generator exhaust pipe is assessed and appropriately rectified as a matter of urgency.*

As a result of the Planned Inspection conducted at the facility in December 2015 NOPSEMA raised recommendation 1176-17, which recommended:

"Operator to conduct a risk assessment and implement measures to ensure that the risks associated with TEG containers stowed in a temporary manifold arrangement at the aft end of the compressor module are reduced to ALARP."

Recommendation 1176-17 was accepted by Operator and closed by NOPSEMA on 31/03/2016. The operator's commitments that allowed closure of the recommendation were that excess TEG containers would be removed from the aft end of the gas compression module, and that the 2 remaining TEG tote tanks would be held in a bund. The bund is covered by the spray deluge for the Glycol Regeneration Unit.

During the current inspection the inspectors noted that, in addition to the 2 TEG totes in the bund, there were a number of full TEG totes located at the aft end of the gas compression module, in direct contravention of the commitments made in March 2016. It is not acceptable to the Safety Authority that commitments made in response to an inspection recommendation are ignored in the ongoing operation of the facility.

Recommendation 1696-15

Operator *to ensure that all TEG containers stowed on the facility are in stored bunded areas and within the effective spray pattern of an active fire protection system.*

Recommendation 1696-16

Operator *to ensure that a review/investigation is conducted to determine the cause of breach of commitments made by WEL to close recommendation 1176-17.*

The inspectors noted that the mobile fire extinguishers intended for use in helideck emergencies are stowed adjacent to the foam systems on the platform below the helideck. Section 2.16.9.1 of the facility safety case commits to the helideck being designed and maintained to international standard CAP 437 (Facility Safety Case, rev. 6B, dated 23/06/2016). Section 5.21 of CAP 437 (8th edition, December 2016) requires that the dry powder fire extinguishing system, "should have the capacity to deliver the agent anywhere on the landing area". With regard to the gaseous extinguishing agent CO2, CAP 437, section 5.22 requires that, "due regard should be paid to the requirement to deliver gaseous agents to the seat of the fire at the recommended discharge rate". The inspectors doubt that these requirements can be met with the extinguishers in their current stowage positions. In an emergency they would have to be lifted and / or dragged on to the helideck landing area to perform as required. It is foreseeable that this exercise may delay an emergency response as well as creating a risk of manual handling injury to the emergency responders.

Recommendation 1696-17

Operator *to ensure that the stowage positions of helideck wheeled dry powder and CO2 extinguishers are reviewed to ensure that the requirements of CAP 437 will be satisfied in the event of any foreseeable fire emergency on the facility helideck.*

The inspectors also noted that perimeter lighting on the helideck is not in compliance with CAP 437 (8th Edition, December 2016), section 4.20 which states that, "Where the declared D-value of the helideck is less than the physical helideck area, the perimeter lights should be coincidental with the white perimeter marking and black chevron and delineate the limit of the useable landing area." This is so that the pilot can, "land safely by reference to the perimeter lights on the 150 degree LOS (Limited Obstacle Sector) 'inboard' side of the helideck without

risk of the main rotor striking obstructions in the sector." The perimeter lighting on the facility helideck is 'inboard' of the white perimeter marking and the black chevron, thereby not providing the protection it is designed to provide.

Recommendation 1696-18

Operator *to ensure that perimeter lighting on the facility helideck complies with CAP 437.*

1673	17/10/2017	20/11/2017

HSRs

3 contractor HSRs were recently nominated and they are yet to receive the NOPSEMA accredited HSR training.

A list of work group HSRs is required to be displayed on the facility for all facility personnel to access; the current list only contains Operator personnel and not HSRs of other contractor work groups. The HSRs stated that the STOP work process was encouraged and utilised.

Recommendation 1673 – 24

Operator *to ensure that the recently nominated HSRs receive the NOPSEMA accredited HSR training as soon as reasonably practicable to enable them to perform their designated function at the facility.*

The inspectors discussed the following with the HSRs over two separate meetings due to their availability:
Inclusion of HSRs from contractors as part of the workforce and that they should be included as members of the HSR establishment on the facility,
The need to utilise HSR processes in their communication with management via minutes of meeting and keeping a running log of issues raised,
The need to raise issues as well as providing solutions for issues raised,
The HSR committee would benefit from having a set meeting schedule (for example 1st and 15th of every month).

'General observations'/ Emerging scope items

The inspectors noted that despite the large completions scope, the activities and the size of the facility, the overall housekeeping was held to a high standard.
The inspectors sighted the emergency escape chute inspection & maintenance routines and noted that these are in draft. The inspectors noted the annual routine which includes function testing of escape chutes supported by an OEM authorised service provider.

The inspectors discussed the following anomalies identified during the inspection at the exit meeting and provided explanation for each:

- The station bill does not include the alternative muster point (AMP). No information or instruction on emergency actions and evacuation arrangements. The functional role of the station bill is to communicate the location of the AMP as well as information or instruction on emergency actions and evacuation arrangements. There is currently an outstanding action for Operator to update the station bill posted across the facility and insert revision control from PI 1482 (conducted in July 2017).
- Evacuation via column/hull from the AMP is not currently tested & timed in muster / drills. The secondary escape provision (i.e. escape chute and life rafts) will not be suitable in a sea fire scenario. The arrangement to escape from the northern end of CPF via column/hull back to the primary muster points / TR was stated in the safety case part 4 (FSA).
- Stretcher monorail attachment block placement for the north escape chute station was found in the south station. No work instruction was provided for timely installation of the attachment block.
- Soft slings on totally enclosed motor propelled survival craft (TEMPSC) recovery davits found exposed to the elements. These attachments are only to be utilised for TEMPSCs' recovery. Soft slings are typically made from synthetic fibre and will degrade if subject to chemical contamination as well as exposed to the elements. The soft slings can be kept in safe storage to prevent exposure to elements and can be installed when required.

Recommendation 1673 – 25

Operator *to ensure that the Station Bill for the AMP is updated with relevant information and in the interim provide instruction on emergency actions & evacuation arrangements in the AMP.*

Recommendation 1673 – 26

Operator *to ensure that the facility safety drill includes evacuation via column/hull from the northern end of the facility and monitor the evacuation time to reach the primary muster point.*

Recommendation 1673 – 27

Operator *to consider storing soft slings for TEMPSC recovery in safe storage and protected from exposure.*

1708*	10/11/2017	13/11/2017

HSRs

Investigation of dangerous occurrence. Interviews conducted with:

- Operator operators (2)
- Contractor supervisors (2)
- Operator OIM
- Contractor fitters (4)

'General observations'/ Emerging scope items

NA – all findings within scope of investigation

1631	21/9/2017	8/11/2017

HSRs

The inspectors met with 2 HSRs. It was found that all Operator roster panels and work groups are represented by HSRs.

The HSRs reported that the HSR process employed by the new maintenance contractor has not yet been integrated into the facility health and safety meeting process. This finding was reported by the inspectors to the OIM with the expectation that a health and safety representation process that integrates all of the facility's designated work groups will be implemented.

It was also found that the facility safety meeting processes continue to be otherwise functional. It appeared to the inspectors that the HSR-managed facility 'Top 10' OHS issues list continues to be managed effectively. The HSRs gave positive feedback about offshore management's approach to OHS. The inspectors also noted that a pan- Operator HSR forum held in 2017 was well-received by the facility HSRs.

'General observations'/ Emerging scope items

The inspectors found that the operator had decided to remove all monorails and pad eyes from service for re-bolting after bolt deterioration was identified on the foundation bolts for a monorail at the facility. This is considered to be a noteworthy pro-active safety decision.

The inspectors interviewed a member of the workforce undertaking 'sentry' duty at the entry point to a water ballast tank which was a Confined Space Entry (CSE) work site. He was found to be knowledgeable about his duties, the permit to work documentation for that task, and the emergency response arrangements for the CSE.

The inspectors also noted that doors in the blast wall at the forward end of the accommodation block at main deck level (port and starboard) were partially seized in the open position – see photo 1. The doors were freed up and the inspectors verified their operation prior to departing the facility, however no evidence was sighted that inspection and lubrication of these doors is conducted as a planned maintenance routine.

Recommendation 1631-11
Operator *to ensure that a planned maintenance task is created to routinely inspect and lubricate the doors in the blast wall at the forward end of the accommodation block at main deck level (port and starboard).*

1626	22/9/2017	31/10/2017

HSRs / Workforce consultation

There was a list of HSRs on the noticeboard (five HSRs) as per Clause 27 of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGSA).

There were minutes of HSE Meetings on noticeboard, for example:

- D shift HSE meeting (22/10/17; 4/9/17; 26/8/17).
- C shift HSE meeting (15/10/17).

No significant issues were identified by the HSRs.

There was workforce concern regarding the number of emergency warning beacons on facility, therefore it may be difficult to hear the emergency alarm in high noise environments. Recent experience involved a worker failing to hear the emergency alarm, therefore failure to muster.

[Person] provided information relating the assessment conducted, summarised below:

- A management of change has been raised to address the issue.
- The assessment considered – "change of tone is not recommended, consider installing additional sounders, combine with noise survey; A survey is a relatively simple activity, a portable sound meter can be used to provide the info, our HSE team used to have their own device, readings around the installed sounders approx. 1.8 m from the deck in working locations for back ground noise levels and any areas of concern you have then activate alarms and take readings in the same area for context; The maximum sound levels typically from an alarm are approx. 90dB (may be 96dB, I can confirm) if background levels are around or above this then above this you would install warning lights so as not to put hearing at risk".
- An email dated Feb 27/ 2017 confirmed that "Sound meter test completed, only marginal changes in 3 of the 4 locations. My suggestion is to install and beacon light & sound in front of the crane cab".

Other controls in high noise areas were discussed at the 2017 APPEA Health, Safety and Environment Conference (October 2017; https://www.appeahseconference.com.au/wp-content/uploads/2014/11/HSE2017_Program.pdf; Woodside's field worker of the future— safer, cheaper, better Daniel Habib Smart Operations Lead, Digital Solutions, Woodside Energy).

Woodside Energy described their trial of noise cancelling earmuffs with Bluetooth capability to clearly talk between personnel (Operators and back to shore where the microphone was able to screen out noise and only the dialogue between personnel is heard).

Whilst NOPSEMA is unsure if this equipment is suitable to transmit emergency alarms, it is considered worthwhile to review this technology.

Recommendation 1626-1

Consider communicating with Woodside Energy (Daniel Habib, Smart Operations Lead) regarding noise cancelling earmuffs and the ability to transmit sound/ alarms to personnel working in high noise areas.

1681	13/09/2017	24/10/2017

HSRs

The inspectors met with 5 Health & Safety Representatives (HSR) and were advised that nominations for HSRs had only recently been undertaken on the facility and as a consequence the implementation and functioning of the arrangements for the HSRs is still developing.

Only 2 HSRs had completed the requisite training, with 1 HSR stating he had completed the requisite HSR training some time ago and that he had previously undertaken these duties on other facilities. It was noted that the nominated HSRs covered all work groups and a photograph of each of them was posted on the noticeboard within the mess.

During the course of the discussions the HSRs stated that there was good communications between all departments, including vessel management team, deck, project and engineering, on health and safety matters. In addition it was stated that the Safety Committee was functioning very well, is well attended and represented by each department. The Safety meeting minutes were sighted on the noticeboard adjacent to the main mess.

It was reported that the company management is generally receptive to the issues raised and the overall approach to safety is open, positive and proactive. The HSRs noted that the morale on the facility is good.

The inspectors discussed NOPSEMA communication arrangements with the HSRs and involvement in dispute resolution between HSR and management when required. It was stressed that the HSRs should ensure that the internal processes are followed in the first instance.

'General observations'/ Emerging scope items

During the course of the inspection the following general observations were made:

• Access into starboard Remote Operating Vehicle (ROV) working area when exiting Project Office was barricaded to prevent inadvertent access.

• Noted sliding watertight doors (2) on main deck accommodation were open contrary to "to be kept closed at sea" signage posted on the doors.

Recommendations 1681-7

Operator *shall ensure that the main deck sliding watertight door operation is consistent with the posted signage.*

• Back scratcher on the 100 tonne crane did not appear to restrain possible fall over the intermediate platform.

Recommendations 1681-8

Operator *shall ensure that the fall protection on the 100 T crane access ladder is appropriate and that the risks associated with the use of ladders is reduced to ALARP.*

• The 100 tonne crane walkway way hatch was left open after personnel had ascended the ladder into the crane.

Recommendations 1681-9

Operator *to ensure that the 100 T crane grating access hatch is appropriately managed and that the fall risks associated with the walkway is reduced to ALARP.* • The back deck presented in an orderly fashion despite the amount of equipment on-board. Access ways were largely clear of equipment. There was, however, little evidence that back deck equipment had been prepared for cyclone season, notwithstanding the plan to evacuate the area if required. *Post inspection – Requirements to secure the vessel is outlined in the Severe Weather and Cyclone Response for URF Vessels when the alert level is blue (1000nm).*		
1699*	10/10/2017	11/10/2017
HSRs / Workforce representatives		
The proposed scope for this inspection included the formal Complaint Notification 5084 regarding work practices offshore. Consistent with the allegations made in the formal complaint the Inspectors interviewed (by random selection) a Rope Access work group and a Scaffolding work group in order to obtain the views of the working group with respect to the permit to work process and job hazard analysis. Based upon the responses from the rope access and scaffolding work group selected the Inspectors formed the opinion that the allegations made in the formal complaint (Notification 5084) could not be substantiated.		
1588	4/9/2017	9/10/2017
HSRs		
During a meeting with the HSRs the following key points were noted by the NOPSEMA inspectors: - there is an effective working relationship with management and that significant safety concerns are being addressed as they arise; - safety meetings are being conducted on a regular basis and minutes are prepared; - a “top 20” list of issues is being maintained; - HSRs are receiving training as required; and - there is adequate representation across all work group panels with two HSRS on board the facility at all times. It was also noted during the meeting that there is a possible discrepancy between training given to 3rd party contractors versus that being given to personnel employed directly by Operator. Some 3rd party contractors might not be receiving adequate training to conduct their work functions correctly due to disagreements over funding. At this stage no safety implications have been directly attributed to the discrepancy, however NOPSEMA will continue to monitor this during future inspections.		
‘General observations’/ Emerging scope items		
There is limited evidence that failure rate information is being collected for safety critical equipment to assess their historical reliability versus expected reliability. This should not be limited to instrumentation, but to any device that is tested on a regular basis, to reveal dangerous undetected faults. Recommendation 1588-1 has been made to address this issue.		

During the inspection of the fire water pump for incident 4956 (described in section 3.2.3) the inspectors noted that there was no anti-spray tape fitted on diesel lines on the diesel engine of the fire water pump. Section 2.2.5.3 of Chapter II-2, Part B, SOLAS Consolidated Edition (1 January 2020) states:

"As far as practicable, oil fuel lines shall be arranged far apart from hot surfaces, electrical installations or other sources of ignition and shall be screened or otherwise suitably protected to avoid oil spray or oil leakage onto the sources of ignition."

Recommendation 1588-10

Operator *to ensure that the diesel fuel lines on the diesel engine of the fire water pumps are "screened or otherwise suitably protected to avoid oil spray or oil leakage onto the sources of ignition" (ref. Section 2.2.5.3 of Chapter II-2, Part B, SOLAS Consolidated Edition, 1 January 2020) or the equivalent requirement in the adopted version of the SOLAS standard in the current safety case (2001 Edition).*

The aft crane is no longer rated for man-riding; however there is no clear marking on or near the crane that this is the case. There is a still a key system in place which would imply that it can still be placed in a man-riding (i.e. personal transfer) mode. There is therefore a risk that the aft crane could be incorrectly used for man-riding, despite the fact that it is no longer certified for this service. Personnel interviewed by the inspectors stated that the AFT crane had not been used for man riding and that the likelihood that it could be inadvertently used for man-riding for normal operations was extremely low.

Recommendation 1588-11

Operator *to consider installing appropriate signage on the aft crane to minimise the chance of the aft crane being used for man-riding. Alternatively, consider removing all references to its previous man-riding capability, to reduce the potential for confusion as to its current status.*

The inspectors observed evidence of significant corrosion in parts of the facility, such as hand rails (e.g. Figure 11 & Figure 12) and some process piping. The observed corrosion did not appear to present an immediate safety risk, but could present a risk in the short to medium term if not monitored and corrective action taken as necessary.

Recommendation 1588-12

Operator *to consider completing a corrosion risk assessment and plan, such as that described in the "Guidance for corrosion management in oil and gas production and processing" prepared by the Energy Institute, issued May 2008. Key elements of the risk assessment include:*

a) identification of corrosion related hazards on the facility,

b) methods to quantify the corrosion from a) so that are consistently and objectively assessed,

c) risk assessment of those corrosion related hazards from a) and b); and

d) plans to mitigate those hazards with prioritisation based on c).

The inspectors identified that the forward and aft cranes had twin-stile rung-type ladders installed at more than 75°C to the horizontal, that were required for normal access to the crane operating controls. There were no permanent fall arrest systems installed; however the Government of Western Australia "Prevention of Falls at Workplaces" Code of Practice (2004) recommends that fixed ladders with angles exceeding 75°C "should be fitted with a permanent or temporary fall-arrest system".

Recommendation 1588-13

Operator *to consider implementing fall-arrest systems on the forward and aft crane ladders to minimise the risk of injury from a fall or slip from these ladders.*

1692*	25/9/2017	28/9/2017

HSRs		
Accident investigation Interviews conducted with: • Senior Driller • Assistant Driller • Driller • Floorman (3) A meeting was held with safety committee representatives to get an understanding of the current safety culture on the facility. Committee members represented all work groups on the facility and they provided feedback that the level of support and responsiveness from management on general health and safety issues was very positive. With respect to the accident, the committee were also happy with the level of information provided to workers by management following the accident and appreciated that their investigation needed to be completed before further feedback and definitive findings could be shared.		
1506	16/8/2017	25/9/2017
HSRs		
Work group HSRs nomination is in progress and 5 HSRs were nominated to date. All 5 nominated HSRs have received HSR training. The inspectors were informed that HSRs were previously involved in construction site safety meetings and good senior management support was provided in the past. The HSRs stated that the 1st HSRs / management meeting is being planned for Saturday (30/9/2017). The inspectors were also informed that HSRs previously participated in incident investigation and that it was intended to share HSRs / work place issues with the platform. The inspectors discussed NOPSEMA communication including matters such as access to information of safety critical controls for the facility with the HSRs. NOPSEMA website, publications such as “Regulator” and “Safety Alerts” and inspector’s involvements in conflict resolution between HSR and management when required. The inspectors noted that nominated HSRs do not fully cover all work groups e.g. catering department is yet to nominate HSRs. Nominated HSRs are not adequately covering all shifts and panels. The inspectors were informed by the HSRs that there are numerous capable candidates at the facility and further nominations are imminent.		
‘General observations’/ Emerging scope items		
The inspectors conducted a general inspection of the facility above and below main deck spaces paying due attention to: • Layout and access to equipment; • Emergency escapes and egresses; • Stairways and ladders including signage; • Facility CCTV, PA/GA and beacons coverage in machinery spaces; • Control of work site & good housekeeping were generally noted; • Mechanical workshop and confirmed provision of “accidental” power isolation of equipment – i.e. dead man switch for grinder and bench drill;		

- Lifting equipment – general condition and WLL / ID mainly pad eyes, beams and monorail, laydown area;
- "Rest and rehydration" area at work site;
- Helideck & provisions including helideck lightings;
- Living quarters cabins, fire doors/ air locks & TR escape routes & signage within the LQ;
- Emergency power generator;
- Emergency / escape provisions i.e. TEMPSCs & life rafts including over-side lightings;
- Fwd fire water pump and passive fire protection;
- EER & LSAs provisions in machinery spaces in particular HV and LV switch rooms;
- Control room & PTW processing centre;
- IC centre & telecommunication room;
- TR, muster points (PMP/SMP/AMP) & muster stations / muster boards;
- Medical centre and confirmed medical supports and other provisions e.g. UPS coverage are being in place;
- ER / Fire team muster point. High end specification for firefighting and communications provisions within was noted;
- Some of the F&G detectors, MAC, fire/blast walls, fire extinguishers placements etc.; and
- Fire Control and safety plan as-built (& Class endorsed) posted on the facility.

The following observations were discussed at the facility exit meeting:

➢ **Vertical ladders of significant height located above deck as well as below deck installation - some of the swing gate provisions were found not to be self-closing.**

Vertical ladders were generally not provided with ladder safe arrangements at the facility except for **one**. In general, vertical ladders were provided with ladder cage and swing gate arrangements. Some vertical ladders at the facility are in excess of 5 metres. It should be noted that ladder cage does nothing to stop a vertical fall. With a cage system, a worker that slips on a ladder rung can drop from the top of the structure to the deck (or landing) resulting in serious injury. A fall from a vertical ladder was reported to NOPSEMA as recently as 19/9/2017 and the worker sustained 2 broken legs. It is good practice to provide ladder safe systems for vertical ladders. HSE UK safety bulletin: CCID-2012 describes "Hooped ladders and the use of personal fall-arrest systems". The safety bulletin urged that "Duty holders should be aware that the hoops of a ladder alone may not be effective in safely arresting a fall without injury. Duty holders are therefore advised to review their risk assessments and consider if additional fall protection is required or alternative means of access supplied".

Recommendation 1506 -14

Operator *to consider a review of the control and use of vertical ladders, whether vertical ladders are to be used for normal operational access and implement additional fall protection to ensure that during normal operational use, the risks associated with the use of vertical ladders is reduced to ALARP.*

Recommendation 1506 -15

Operator *to ensure that all swing gates provided for ladders at the facility are self-closing and implement inspection routines covering swing gates and ladders.*

➢ **Friction factor / reading for helideck was available but it was unclear if it was based on CAP 437 December 2016 edition.**

The inspectors were aware that CAP 437 December 2016 was published and in force. The standard is applied to all offshore facilities. Although no notable deficiencies were identified in the helideck inspection and the friction factor / reading for helideck was available, it was unclear if it was based on CAP 437 December 2016 edition. It was later confirmed by Operator (post facility inspection) that the methodology in obtaining Friction factor / reading for helideck does not comply with CAP 437 December 2016 edition.

Recommendation 1506 -16

Operator *to ensure that changes identified in CAP 437 December 2016 edition including methodology to measure friction factor/readings for profiled aluminium decks are evaluated & adopt enhancements in the current edition to make certain that risks associated with helicopter operations are reduced to ALARP.*

- **CO2 and dry chemical trolley deployment will be difficult under current storage arrangements. These trolleys are well in excess of 20 kg.**

Deployment of CO2 and dry chemical extinguisher trolleys will be difficult under the current arrangements on the helideck: large capacity CO2 and dry powder fire extinguishers are located in an inclined position adjacent to the helideck. The dry chemical weighs about 30 kg. In the event of an emergency it would be very difficult for the Helicopter Landing Operations (or Operator) (HLO) team members to move trolleys out of stowage and to apply the fire suppressant efficiently.

Recommendation 1506 -17

Operator *to ensure that the CO2 and dry chemical trolley stowage arrangement on the helideck is reviewed. Implement arrangements such that fire suppressants can be deployed and applied promptly in the case of an emergency on the helideck.*

- **Fire doors of galley found kept open & Galley fire door seal (dish washing area) found un-bonded.**

The inspectors noted that fire doors of galley were wedged open and there are no magnetic release latches. Additionally, the fire door located adjacent to the dish washing area was found with the rubber seal un-bonded. All fire doors are to be closed promptly within the LQ in the event of emergency. The facility safety case MAE 2.3 “Smoke in the LQ” section 2.12.3 states “The potential for smoke migration is minimised by automatic shutdown of the ventilation system and self-closing galley access doors”. The wedged arrangement would prevent the fire doors from self-closing.

Recommendation 1506 -18

Operator *to ensure that fire doors in the galley are self-closing at all times. Other means of restraining to keep fire doors open may be investigated and provided.*

Recommendation 1506 -19

Operator *to ensure that a fire door inspection and maintenance routine is implemented to make certain that the integrity and fire-rating of all fire doors and door seals is assured.*

- **Flexible hoses utilised in fwd FW pump.**

The inspectors noted that flexible hoses are utilised across the facility e.g. FW pumps, EGen and helifuel system. The use of flexible hoses was driven by necessity, however flexible hoses are a “weak link” within the pressure containing envelope. Failure of flexible hoses could result in none availability of safety critical controls e.g. EGen / FW pumps or deck cranes. The inspectors were informed that there is a flexible hose register compiled by the project team. The register will be used to facilitate implementation of a future inspection and maintenance program. Currently there are no inspection & maintenance routines in CMMS for flexible hoses.

Recommendation 1506 -20

Operator *to ensure that an inspection and maintenance regime is developed and implemented in order to mitigate risks associated with the failure of flexible hoses. The flexible hose inspection and maintenance regime should also include hose replacement at established frequencies in accordance with OEM recommendations.*

- **Part of exhaust hot surface insulation for EGen. Coverage does not include turbochargers.**

The inspectors noted that the exhaust of the EGen was provided with "Hot surface" insulation. The insulation however does not include the turbochargers. The inspectors were informed that there were no temperature surveys conducted on temperature rise of the turbocharger at maximum load of the EGen. Without such determination or information from the vendor, it is unclear that the current provision is considered adequate to mitigate risk associated with fuel splashes and/or oil mist within the EGen enclosure.

Recommendation 1506 -21

Operator *to ensure that the "Hot surface" insulation provided for the EGen is "fit for purpose" and will mitigate fire and /or explosion risk associated with fuel sprays / oil mist within the EGen enclosure.*

- **Switch room rescue gear containers do not have content list.**

The inspectors noted that switch rooms' rescue gear containers do not have a content list which indicates the contents within. The inspectors were informed that there are inspection routines established for inspection of rescue gear and safety provisions in CMMS and the work instruction will have a listing of items. The current arrangement can only identify missing items at each inspection. Providing a content list for all safety and rescue gear containers at the facility will facilitate personnel in "conducting worksite safety inspections" and "to report missing items in a timely manner".

Recommendation 1506 -22

Operator *to ensure all safety and rescue gear containers at the facility are provided with an accurate content list.*

- **Switch rooms have no AED provision.**

The inspectors noted that the switch rooms were not provided with Automated External Defibrillator (AED). AEDs are typically provided in switch rooms to revive casualty from electrical shock and are used to treat sudden cardiac arrest. The inspectors were informed that there are a number of AEDs at the facility and that the facility medic decides when and where AEDs are to be deployed. General awareness and overview in usage of AEDs is considered beneficial.

Recommendation 1506 -23

Operator *to ensure timely deployment of AEDs in various machinery spaces & switch rooms and provide awareness/familiarisation training in the use of AEDs at the facility.*

- **Loose false floor tiles were found in the primary IC centre.**

The inspectors noted loose false floor tiles in the facility primary Incident command centre. Loose floor tiles could result in a tripping hazard.

Recommendation 1506 -24

Operator *to ensure that loose false floor tiles in the facility primary Incident command centre are repaired to mitigate trip hazards.*

- **Notable heat built up in the primary muster area during loss of main power event.**

The loss of MP Generator A on 26/9/2017 resulted in full facility muster at the primary muster point. The primary muster point may not have HVAC coverage in loss of main power. There was a notable heat build-up in the primary muster area after approximately 20 minutes. The outside temperature at the facility was not considered extreme at the time. The designed TR (including muster point) endurance time of 60 minutes is stated in the safety case (section 10.7.3 / Facility Description). Safety Case part 4 FSA states that TR impairment as a result of heat rise, oxygen depletion and CO2 build up after HVAC shutdown (e.g. smoke or gas detection at intakes) has been assessed to ensure the TR is not impaired within the endurance time. It is however unclear that the TR impairment assessment was conducted with extreme outside temperature, HVAC shutdown, heat built up within the PMP with maximum POB of 210, TR endurance time of 60 minutes, that the temperature rise is within "acceptable" limits.

Recommendation 1506 -25

Operator *to ensure that the temperature within the primary muster point with maximum POB, is within the acceptable limit for the established endurance time of 60 minutes and confirm that the TR impairment assessment allowed for extreme temperatures (hot) experienced in the region.*

- **Medic followed Care flight Australia work instruction. There is no [Operator] procedure manual for medical administration and controls.**

Medic qualifications and Safe Operating Procedures (or manual) for the medical centre were not available. The facility medical centre is well equipped and supported. Control and disposal of prescription as well as classed medication and hard drugs were in place. The medical centre was supported by Paramedics with advance life support (Level 2) capabilities stated. Although responses provided by the medic in the running of the medical centre and disposal of the controlled medication were sound using Care flight Australia work instruction, there is an absence of procedure manual approved for use by Operator. There is no evidence of past audit conducted on procedure compliance.

Recommendation 1506 -26

Operator *to ensure that a procedure to assure appropriate medical and first aid services at the facility is developed and implemented. The procedure should include general medical centre management, triage management as well as safe disposal of classified drugs and medications.*

- **Stated medic qualification to paramedic Life Support level 2 not available (requested).**

The facility hospital (Medical Centre) and provisions including confirmation of medical back-up arrangements and UPS powers coverage were viewed. The inspectors sighted the job profile, work experience and qualifications of the medic assigned (information was provided post facility inspection). Information provided does not support stated qualifications to paramedic Life Support level 2. There is an outstanding question as to the level of competency established for the facility medic in particular paramedic advance life support level 1 or 2 requirements. Operator has provided information to indicate 1 medic has ALS competence for level 1 and the back to back medic has no information on ALS competency.

Recommendation 1506 -27

Operator *to consider establishing the competency requirement for medics, in particular the need for advance life support level(s) and ensure compliance with the established requirement.*

- **Emergency Position Indicating Radio Beacon (EPIRB) provision for AMP not found.**

There are 3 EPIRBs provided for the primary muster point and none provided at the alternative muster point. The alternative muster point is provided with a TEMPSC. Additional EPIRBs are a back-up provision to the EPIRBs located within the TEMPSCs. The facility "Fire control and safety plan" was checked and is aligned with the current provisions but the provision of back-up EPIRB is not consistently done.

Recommendation 1506 -28

Operator *to consider providing a back-up EPIRB at the alternative muster point for consistency including updating of the facility "Fire control and safety plan" to reflect any change.*

- **Tag number signage for major equipment not consistently provided. Some provision is located in obscured places. e.g. Hydrochloric acid storage tanks.**

Process vessels (major equipment) were not consistently provided with large equipment tag numbers. The provision of visible tag numbers for pressure vessels and tanks is an established practice for process plant onshore as well as offshore. Visible equipment tag numbers facilitate equipment identification as well as incident reporting. Concise and early reporting of incidents in particular locations could potentially mitigate escalation of an incident. Photos below indicate inconsistency in providing a legible equipment tag. Tag number for Hydrochloric acid storage tanks were provided however these are located in an obscured position.

Recommendation 1506 -29

Operator *to consider providing process vessels and tanks with equipment tag numbers by stencilling (or other means) which is visible from a distance facing main access corridors.*

- **Splash protection for flanges not provided of Hydrochloric acid system.**

The inspectors noted that splash protection covers for fuel as well as chemical e.g. Sodium hydroxide were provided but similar provision is not provided for the hydrochloric acid system.

Recommendation 1506 -30

Operator *to consider providing splash protection covers for flanges of the hydrochloric acid system as a risk reduction measure to minimise chemical exposure. The provision should include other aspects of containment such as mitigating mechanical seal failure associated with pumps and couplings associated with chemical transfer hoses as relevant.*

- **Retrofitted pipe supports found on facility process piping (e.g. swivel) as well as cooling water lines (e.g. MP Gen).**

Small bore piping anti-vibration bracing is not provided consistently. Some systems of piping are provided with welded 2 plane anti-vibration bracing, conversely, a sizable isolation valve was found with retrofitted and bolted "pipe to pipe" supports. There is some information provided on future vibration monitoring under the VOR action list. It is important to note that piping system vibration and fatigue can be caused by dynamic, transient as well as acoustic loads. The piping system vibration and resonance are directly affected by the production flow rate. HSE & UK Energy Institute provides guidance on piping vibration and mitigation (e.g. Guidelines for the avoidance of vibration induced fatigue failure in process pipework). The key is to conduct piping and tubing vibration surveys in a timely manner, involving specialist 3rd parties at various stages of the facility start-up to reach maximum rate. The surveys should identify areas of concern. Continuous close monitoring of piping system response is required to detect "ongoing" as well as the existence of transient and acoustic vibration risk irrespective of piping design which may (or may not) have incorporated mitigation controls as part of the piping system design review.

Bolted pipe support has inherent risk being that the loosening of bolt tension will undermine the pipe support functional intent. Undetected loss pipe supports can potentially accelerate piping failure due to additional weight subject to vibration fatigue as well as introducing wear and fretting damages. If the retrofitted pipe supports are confirmed as "fit for purpose" all bolted supports will need to be regularly torqued and inspected to ensure pipe support integrity.

The inspectors were informed that piping system inspection routine includes pipe supports. However the frequency of the inspection cycle will be spaced out and it is difficult to determine bolt tension / bolted clamps using closed visual inspection (CVI).

Recommendation 1506 -31

Operator *to ensure that a piping and tubing vibration fatigue mitigation strategy is developed based on the Energy Institute (UK) guidance (or similar) and implement key elements of the strategy, to ensure that the risk of tubing and piping failures due to vibration fatigue is reduced to ALARP.*

Recommendation 1506 -32

Operator *to ensure that bolted pipe supports at the facility are fit for purpose and implement a maintenance routine to torque up all pipe supports at established frequencies.*

- **Aft and Fwd machinery areas have limited location identification and do not have the "deck information" similar to that on display in the LQ stairwell to indicate what compartments are located at each level.**

The inspectors noted that the "deck level information" laminate is only provided at the stairwell at each level of the LQ. The information provided for Aft and Fwd machinery space stairwell entrances is by means of laminate with information related to a referenced point (or area) of the plot plan. The same arrangement in providing deck level information laminate for machinery space entrances within the stairwell can assist navigation, communication as well as evacuation being that the facility machinery spaces are of multiple levels.

Recommendation 1506 -33

Operator *to ensure that deck level information/identification is provided for Aft and Fwd machinery space stairwell entrances to facilitate communication, search & rescue and evacuation.*

1690*	22/9/2017	25/9/2017
HSRs		
Dangerous Occurrence investigation.		

Interviews conducted via telephone with the two personnel involved as they were off-swing at the time of the inspection.

The inspectors met with one Health and Safety Representative (HSR) who reported the following:

- safety meetings are occurring regularly;
- morale on the facility is good;
- there were no issues to report;
- a HSR has been promoted within the organisation to Maintenance Team Leader (MTL); and
- potential for additional nominated or elected HSRs.

'General observations'/ Emerging scope items

The inspectors noted that the housekeeping was generally good during the walk around. However, a number of separate issues were found during the inspection. These were communicated to Operator management who indicated the issues would be addressed. These issues included:

- rectifying a Safety Shower tag (x) which was held by one screw.
- personnel were observed travelling on the helicopter and arrived on platform wearing shorts rather than long pants.
- personnel on the induction were observed wearing jeans and high-visibility shirt. It is unclear whether this clothing was flame retardant.

1686*	21/09/2017	25/09/2017

HSRs

Accident investigation

Interviews conducted with:

- Safety department representative (2)
- Floorman (4)
- Assistant Driller
- Assistant Derrickman
- Deck Coordinator
- Roustabout

Inspectors met with members of the safety committee at the facility. In general the committee was complimentary of the health and safety support received from onshore and offshore management. The committee were also happy with the level of information provided to workers by management following the accident and appreciated that their investigation needed to be completed before further feedback and definitive findings could be shared.

'General observations'/ Emerging scope items		
The inspectors noted that a visible and positive safety culture was evident at the facility. This has been reinforced by a good working relationship between Operator and titleholder and their third party contractors in delivering positive safety outcomes for the campaign. Following the accident, an 18 hour safety stand down was undertaken by Operator to give workers a chance to 're-calibrate themselves' from a safety perspective and to give workers an opportunity to speak to counsellors who Operator had brought out to the facility.		
1623	3/8/2017	12/9/2017
HSRs		
The inspectors held discussions with HSR [person] PSO shift 2. General update and discussions were held on issues raised at 3Q meeting held the week prior (Minutes were not available at the time of the inspection). A list of current (July 2017) HSRs was posted on the noticeboard, meeting the requirement of OPGGSA 27 and a copy of the last meeting minutes (2Q 2017) was also posted on the noticeboard.		
'General observations'/ Emerging scope items		
Sea deck grating was missing and there was no north south sea deck access. The safety case at facility description section 2.3.2 states that escape from the north to south ends of the platform is also available on sea deck. Access to sea deck is by stairs. Walkway grating on sea deck is prone to storm damage and therefore has been minimised. Grating is however maintained to provide a north-south route for escape and to access east and west sides to enter the sea on the lee side of the platform. **Recommendation 1623-11** *Ensure north south sea deck access and grating is maintained in accordance with the safety case commitments.* Small bore piping to pressure gauge transmitter on [x] requires supporting. **Recommendation 1623-12** *Ensure small bore piping to pressure gauge transmitter on [x] is adequately supported.* The inspectors identified that the blowdown test does not record the time for the valve to respond or the time for the equipment to blowdown (performance standard requires that equipment be de-pressured to 690 kPag in 15 minutes).The inspectors were not able to identify any other evidence that the blowdown time for the facility was tested or verified to ensure conformance with the performance standard. **Recommendation 1623-13** Operator *to ensure that blowdown tests are conducted on a periodic basis to ensure all equipment that is protected with a blowdown valve, meets the performance standard requirement, including time to de-pressure within a specified time.*		
1537 & 1538	5/7/2017	7/9/2017

HSRs

Facility 1

Four Health & Safety Representatives (HSR) attended the meeting with NOPSEMA, two HSRs had received training and two are new to the HSR role and are waiting for suitable dates to receive training. HSR meetings are held approximately once per roster. The meeting minutes for the meeting held on 2 September 2017 were sighted. It is noted from the minutes that the HSRs are involved in resolving actions, e.g. arranging times for vendors to give presentations to the workforce on the types of gas detectors present on site. The HSRs stated that there is a good reporting culture and Operator management are considered responsive to the concerns raised by the workforce. After an unsettling period of personnel and organisational changes, the HSRs reported that workforce morale is improving.

Facility 2

Two HSRs attended the meeting with NOPSEMA, both had received training. HSR meetings are held approximately once per roster. The minutes for the meeting held on 16 August 2017 were sighted. The HSRs stated that there is a good reporting culture and management are considered responsive to the concerns raised by the workforce. It was reported that approximately 20% of personnel on are new on site. The HSRs stated that this required additional vigilance by the core crew, to ensure that the new personnel were correctly following procedures. The HSRs also reported that workforce morale is improving after an unsettled period.

'General observations'/ Emerging scope items

Tier 2 Audits

Both facility performance standards include the statement: "*Systems such as personnel competency, change management, operational procedures and integrity management and Incident response are addressed by the Safety Management System (SMS). These systems are assured by regular audits and reviews as specified in the SMS*". The assurance of performance in the SCMS performance standard is given as "*Tier-2 Audit*". Revision 1, dated July 2017, of the 2017 Assurance Schedule was sighted. This is in a spreadsheet format. It is not clear how the audits listed in the plan map to the SCMS performance standards or other tier 2 audits for administrative controls. It is noted that as of August 2017 only 57 audits out of the planned 98 audits have been completed. Auditing plays a similar role in providing assurance that administrative MAE controls are effective as routine inspection, testing and maintenance does in providing assurance that SCE controls are effective.

Recommendation 1537-9 (Facility 1), Recommendation 1538-6 (Facility 2)
Operator *to develop and implement a system that identifies and tracks safety-critical audits. Deferred audits require a review process similar to the Permitted Operations process which is used to manage deferral of safety-critical assurance activities for SCEs.*

Swing Closed Exit Gate

It was noted that the gates at the emergency escape locations on facility 1 are swing open. During the inspection the winds were sufficient to blow open the gates. This is a design that increases the risk of personnel falling overboard. The short term solution was to tape/tie the gates shut. A longer term engineered solution will be required. It was also noted that the exit gates at facility 2 have been tied shut.

Recommendation 1537-10 (Facility 1), Recommendation 1538-7 (Facility 2)

Operator *to develop an engineered design to ensure the emergency escape gates can be closed and latched to prevent accidental opening.*

Platform Personnel Locator Beacons

While on the facility 2 platform, personnel are required to wear personnel locator beacons (PLBs). There is no requirement for personnel on Facility 1 to wear PLBs. During the 2016 inspection it was stated that providing PLBs for personnel on facility 1 was under consideration.

Given that it is considered reasonably practicable to provide personnel working on facility 2 with PLBs it would appear to be reasonably practicable to provide personnel working on facility 1 with PLBs.

Recommendation 1537-11 Operator *to ensure that personnel working on the facility 1 platform are provided with personnel locator beacons to ensure that risks to personnel in the event of a fall overboard are as low as reasonably practicable.*

1625	4/8/2017	29/8/2017

HSRs

A good discussion was held with HSRs. New HSRs have been recruited with one having attended the NOPSEMA accredited HSR course, and one still to attend.

There was a HSR list on the facility. Recent changes (new HSRs, retiring HSR) mean that the list will need to be updated. As a reminder, clause 27 of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGSA) states that the operator of a facility must:

(a) prepare and keep up to date a list of all the health and safety representatives of designated work groups comprising members of the workforce performing work at the facility; and

(b) ensure that the list is available for inspection, at all reasonable times, by:

(i) the members of the workforce at the facility; and

(ii) OHS inspectors.

Recent minutes of HSR meetings were on the notice board (five weekly shift meeting 08/17; HSE committee meeting July 17).

Concern was expressed regarding training of personnel. For example:

- Some training expired.
- Training may not be appropriate to equipment on facility.
- Training on the new SOLAR turbine generators has not been provided.

This will be a future inspection topic.

'General observations'/ Emerging scope items

Helicopter Operations

A new helicopter is available for use form Friday 1 Sept 2017

The MOC will be reviewed as a future inspection topic.

Communications It is noted that communications systems (internet) between onshore/ offshore is intermittent, however Operator are fault finding the problem.		
1603	17/7/2017	28/8/2017
HSRs		
The inspectors held discussions with three elected HSRs. The inspectors were advised there are 15 Operator employed HSRs across five shifts covering production, maintenance and services work groups. The HSRs reported that the majority of HSRs have undertaken the NOPSEMA accredited HSR training; HSRs not currently trained are aware of the training requirement and have training courses booked. The HSRs reported that management respond positively and promptly to issues raised by the HSRs. Meeting minutes include tracking of actions and an email group for distribution of minutes to all Operator HSRs has been established. The HSRs took the action to include the catering and contractor HSRs in their future meetings and communications. HSRs also took the action to display photos of all elected HSRs from each designated work group on noticeboards at the facility.		
'General observations'/Emerging scope items		
The inspectors noted that Safety Plans, including evacuation routes are displayed at junctions between modules on main deck and process deck A. The inspectors observed vent lines with a description marking of 'Top Space Nitrogen (N2)' that appeared to discharge to the main deck. It was unclear what the purpose of the vent lines were, but may be associated with the N2 supply for the inter-barrier space and the insulation space for the LNG and LPG cargo containment systems. It was not clear to the inspectors how the venting of N2 to the main deck is managed and controlled such that personnel working on the main deck are safe from N2 exposure. **1603-22 Recommendation** Operator *to ensure that it implements a system that prevents personnel being exposed to Nitrogen from the 'Top Space Nitrogen' vent system.* The inspectors observed that there were no Safe Working Load (SWL) and identification markings on the monorail for the forward life-raft evacuation system. **1603-23 Recommendation** Operator *to ensure that safe working loads and identification markings are clearly marked on all lifting and load bearing equipment, including the monorail for the forward life-raft evacuation system, at the facility.* The inspectors noted that there was a lack of clear signage on a number of vessels and equipment throughout the main deck and topside modules. In the event of a process upset, process incident or emergency incident occurring at a module, the ready identification of the vessel or/and equipment by personnel at the module, particularly for contractor personnel not familiar with the topside modules, could reduce the risk of the upset or incident escalating. **1603-24 Recommendation** Operator *to ensure vessels and equipment at the main deck and topside modules can be readily identified.* The inspectors observed that there is an entrance in the blast wall at the main deck port side (see figure 2). The blast wall is described in the safety case as a means by which the TR is separated from the process hazard top events and escalation potential. It is not clear from discussions with offshore personnel if the entrance in the blast wall has been factored into the blast protection integrity, noting that the TR is defined as having an endurance time of 60 minutes as discussed in section 3.2 of the report. **1603-25 Recommendation** Operator *to ensure that the entrance in the blast wall at the main deck portside does not impact the protection integrity of the wall. In the event of an incident at the process module, the endurance time of the TR is defined at 60 minutes.*		

The inspectors noted that the Safety Infill was being used by the contractor to locate equipment required for N2 leak testing of vessels and equipment at the facility It was observed that a diesel container, required for fuel for the N2 Compressor engine was not bunded (see figure 3). This could result in the loss of containment of a flammable diesel spill from the container. It was also observed that the diesel container was not secured to the deck to prevent movement in preparation for adverse weather conditions. **1603-26 Recommendation** Operator *to ensure that equipment containing flammable and hazardous materials is adequately bunded to prevent loss of containment and secured to the deck in preparation for adverse weather conditions.* During inspection of the leak testing equipment at infill, the inspectors observed that the contractor office contained 3 N2 personal monitors for contractor use. The contractor was requested by the inspectors to demonstrate the functionality of the monitors and it was discovered that 2 of the 3 monitors did not function. The contractor was unable to describe the testing procedure for the monitors. **1603-27 Recommendation** Operator *to ensure that all contractors at the facility have systems and procedures implemented, including testing procedures of gas monitors, which meet the requirements of the safety management system.* The Inspectors observed that small bore piping anti-vibration bracing is not consistently provided at sections of the process modules x and y (See figures 4 & 5). A number of smaller bore 1, 2" and 3" piping systems were not securely braced making them susceptible to vibration which could result in vibration induced fatigue failure of the pipework in future operations. It is not clear if Operator has a strategy to monitor and mitigate small bore piping vibration fatigue to prevent process piping failure. **1603-28 Recommendation** Operator *to ensure that all small bore piping is appropriately secured to prevent vibration fatigue and to implement a strategy to monitor and mitigate vibration fatigue of small bore piping.* The inspectors observed corrosion of bolts on some flanges on the process deck. It would appear that there may be a difference in potential between the bolts and the flange that has resulted in the corrosion of the bolts. It was observed that at some locations on the process deck that some flange bolts had a protective coating to prevent or/and mitigate corrosion. **1603-29 Recommendation** Operator *to ensure that flange bolts in the process modules are appropriately designed and installed to control corrosion of the bolts*. The inspectors observed a number of pad eyes located on piping in the machinery spaces that appeared to have been installed during the construction phase and are not tagged or marked with safe working loads (see figures 8 & 9). **1603-30 Recommendation** Operator *to ensure that all pad eyes that are installed at the facility are marked with the safe working load or have been tagged to show that they are not to be used.* The inspectors observed that there are a number of self-closing fire doors throughout the facility that do not self-close. The fire control plan defines the types of fire doors implemented at the facility, whether they are 'A' or 'B' class and if self-closing. **1603-31 Recommendation** Operator *to ensure that all self-closing fire doors that are implemented at the facility are fit for purpose.* The inspectors observed a potential pinch point between the aft hydraulic ram of the life-raft embarkation chute launching mechanism and an adjacent davit at the starboard bow (See figure 10). The inspectors checked the arrangements at the port bow embarkation deck and found that the identified issue only exists on the starboard side. The inspectors advised the operator to be cautious of the potential pinch point at the starboard bow. The inspectors observed that two scaffolds on B deck of module x had out of date "scafftags". It was noted that these scaffolds were last inspected on 19/06/17; facility staff advised that Operator has a 21 day scaffold inspection standard. The inspectors' facility escort explained that these were shipyard-installed scaffolds that were not in use, and that the intent was that these tags should have been turned over to tag-out the scaffolds. **1603-32 Recommendation** Operator *to ensure that scaffold structures at the facility are either inspected in alignment with the facility procedures, or tagged out of service.*		
1579	7/6/2017	14/8/2017
HSRs		

Six Health & Safety Representatives (HSR) attended the consultation meeting in the afternoon of 14 August 2017. It was a mixed group of operator and contractors' personnel. There was a robust discussion of the ongoing health and safety issues at the meeting and the group was of the opinion that there was good open channel of communication between the HSRs and management.

All HSRs in attendance have attended the NOPSEMA accredited HSR training. Although there was challenging work environment at the time of inspection, with construction and operations being conducted simultaneously, the HSRs were positive about these challenges and the ongoing commitment to ensure work was performed safety. The ongoing isolation system separating the operations and construction units was being managed effectively.

Some HSRs were involved in various site incident investigations, but many felt that the lessons learnt from more serious incidents were not widely publicised and communicated to wider workforce. Some HSRs were not sure about the formal recording and tracking of minor hazard report cards and the status of action completion. Operator is to consider appropriate means of communicating status of minor hazard reporting to the workforce.

The recent incident of ASV to platform gangway disconnection at end July was highlighted by an HSR, as this resulted in a number of contractor personnel being stranded on the Platform early in the morning, unable to return to their accommodation at ASV. The ASV had to sail away to a sheltered area and the stranded personnel had to be transported by helicopter to the ASV on that day. There were various accounts of what occurred during this situation (both from platform and ASV personnel) and it was mentioned by the HSRs that the lessons learnt from the situation were not shared or widely communicated with the workforce. The contractor had published a one page lessons learnt on recent electrical incidents at another facility and this was sighted at the ASV. This was considered a good approach to sharing lessons learnt.

HSRs expressed concerns that some work team leaders may not be aware of their role in regards to overseeing multi-disciplined tasks on a single permit. There is apparently a written document on this issue and Operator indicated that staff communications will be planned to clarify the intent of the document.

Some HSRs expressed concerns regarding the identification of isolated electrical cables in the field. The electrically isolated cable end was properly covered and taped up in the field when electrical equipment was removed but this was not always tagged to indicate the source of supply as indicated on the isolation certificate. Operator agreed to improve on this field identification.

Recommendation 1579-1

Operator is to consider communicating lessons learnt from incidents at the platform and other facilities to the platform personnel by publishing a one page summary of incidents or using other suitable communication means.

'General observations'/ Emerging scope items

Other issues arose during the course of the inspection and, as a result, were added to the scope. These additional items were:

- Process Isolation Management.
- Other Occupational Health and Safety (OHS) Issues

3.6 Process Isolation Management

Operator has prepared a document titled "Isolation of Hazardous Energy – Equipment preparation Procedure" (Revision 3.0, dated 30 May 2017) as requirements for the opening of process equipment and performing isolation of machinery, equipment, vessels, piping and systems from sources of hazardous energy. The procedure is essentially based on Health and Safety Executive (HSE) – HSG253 – The safe isolation of plant and equipment (2nd edition, 2006). The isolation criteria was identified through hazard factor assessment tool (spreadsheet used at Platform) based on pressure, size and product. Isolation authority personnel are trained and competency assessed, and verified by a third party. The level of isolation approval is based on a 'traffic light' system of residual risk score.

Isolation audits were conducted regularly by each team leader. The various types of isolation locks and tags are kept in the Permit Coordinator's office. Padlocks or Smith locks are used for PSV interlocks and the keys are kept in the Production Coordinator's office. Samples of Permit to Work were inspected and found to have appropriate isolation management requirements stipulated.

[Name] are used for boundary isolation between operational and commissioning units. There were currently 773 [name], of which 71 had been permanently removed and 269 were with spade/blinds installed. Car seals were identified on the P&IDs for operational requirement and are recorded in the car seal register.

There is a flow chart in the isolation procedure for isolation. However, there is no flow chart for de-isolation of process, utility, electrical, hydraulic and pneumatic systems. De-isolation tasks are considered equally, if not more, important than isolation in terms of ensuring safe operations of the production systems.

Recommendation 1579-4

Operator is to consider improvement to the isolation procedure by including a flowchart for de-isolation of process systems in the document x.
There is a control copy of the P&IDs with redlined marked-up in the control room. There is also another copy of the P&IDs in the adjacent Production Coordinator's office that was not stamped uncontrolled. It was raised with Operator at the time of the inspection the importance of ensuring appropriate control of P&IDs on the platform. The timing and process of finalisation of the redlined marked-up P&IDs to blacklined as-built drawings was not clear to the platform personnel. Operator provided a post-inspection email clarifying the process of blacklining the P&IDs as part of the handover to the Operations team from the Commissioning team 90 days after the stage 3 start-up at quarter 4 of 2017.

3.7 Other OHS Issues
The inspection team observed a lifting operation involving the unloading a container onto a supply boat. It appeared that the lifting crew followed appropriate procedures associated with staying away from the container until it was landed on the deck of the vessel.
The lifting and working at height equipment in the store were inspected and found to have appropriate colour-coding.
Hazardous Material (Hazmat) storage of oils and other chemicals in drums were observed to have bunds and spill containment units.
Low voltage and high voltage switch rooms are fitted with Very Early Smoke Detection Apparatus (VESDA) smoke detectors while the UPS room, fitted with battery banks, was observed with VESDA, gas and smoke detectors.
A number of fixed vertical ladders with drop bars were inspected. With this design, in addition to the potential risk of fall through the void below the bar, there is additional risk that workers have to stand on the ladder when climbing up to the platform and require one hand to lift up the bar before landing on the platform. This issue was raised in previous planned inspection as recommendation 1266-4 for Operator to review all vertical ladders with such potential fall hazards and consider installing self-closing gates at these areas as per AS 1657-2013. Operator has conducted a risk assessment of these drop bars and concluded that up to 36 of the drop bars may be required to change to swing gates. Operator has undertaken to prioritise the installation of these swing gates after the platform commissioning.
Recommendation 1579-5
Operator is to provide an update of the installation schedule of the self-closing gates as per AS 1657-2013 in locations identified in previous recommendation 1266-4.
A few of the pressure vessels had identification labels visibly stencilled but the majority of the static and rotating equipment did not have identification labels. Some Glass Reinforced Epoxy piping had identification label tape on them, but most of the process piping did not have product and flow identification. Appropriate identification labelling of equipment and piping is a good industry practice and is also an aspect of the management system in process safety to assist training of personnel and to enhance proper isolation and de-isolation of plant equipment and systems.
Recommendation 1579-6
Operator to consider relevant equipment and piping identification labelling is provided in line with good industry practice.

1616	25/5/2017	1/8/2017

HSRs

During the inspection, various discussions were held with members of the workforce including a discussion with the night shift Operations Technician designated Health and Safety Representative.

'General observations'/ Emerging scope items

Other issues arose during the course of the inspection and, as a result, were added to the scope. These additional items were:

- Follow-up on notified Non Major Incident NOPSEMA #4999 – Dry Gas Leak Stem Valve
- Organisation changes with Contractor Services Provider
- Hydrate Issues / Heat Tracing

3.3 Non-Major Incident #4999 – Dry Gas Leak Stem Valve
This incident was notified to NOPSEMA on 27th July 2017 which coincided with this planned inspection.
During inspection an update was provided by the Maintenance Supervisor, an appropriate replacement valve was sourced and the failed valve has now been replaced and the system is back online. The old valve has been crated up in a Container waiting to go onshore for failure analysis as part of Operator investigation. [Name] is the Investigation Team Lead (Piping / Mech Engr).

Prior to issuing this report, NOPSEMA received Operator's final investigation report following their failure analysis. NOPSEMA note Operator's action outcomes; *'identify actuated valves in a selection of assets that cycle multiple times a day…'; and , 'Determine if equipment strategies for high frequency cycling actuated valves need to be developed or modified.'* NOPSEMA will follow-up progress on these actions during the planned inspection onshore in December 2017.

Change of Contract Services Provider:

It is noted that Operator have recently undergone a change in Contractor providing maintenance services.

The POB on facility was also low numbers compared to previous visits.

It is also understood that some activities are on hold as resources are not available as the new Contractor 'skills' up.

It is well documented that Organisational changes such as reducing staffing levels using contractors or outsourcing, can have a detrimental effect on safety. Even subtle changes to organisations can have significant impacts on the management of hazards.

NOPSEMA held a conference call meeting on the 18th August 2017 with Operator to gain assurances and clarifications regarding the processes in place to manage the transition of the new Contract.

Attendees:

Maintenance & Modification Manager

Production Contracting Supervisor

Planning & Scheduling Supervisor

Contract Lead

NOPSEMA

It was established that the pre-planning process commenced approximately 12 months earlier as part of Third Party Services contractor procurement requirements. An Expression Of Interest (EOI) was provided to suitable organisations and a shortlist of Companies underwent a commercial evaluation. The subsequent Contract Company would be a Category A (High SSHE Impact) Contractor so would be required to meet those requirements.

Outcome of the contractor evaluation process resulted in engaging [contractor] for providing maintenance services.

Contractor have been responsible for recruiting, training, inductions and putting a SSHE plan in place, consistent with Operator requirements. The SSHE plan was reviewed and approved by Operator SSHE department prior to services commencement. All new contractor employees are on boarded through standard operator processes, in addition to the operator personnel responsible to facilitate the on boarding process (i.e. welcome discussions at training centre, or first time on facility). When on site, new employees are subject to the contractor Short Service Worker program (consistent with operator Short Service Worker Program) and are required to wear a 'Green' safety helmet as Short Service Worker identification, and are mentored per program requirements. Contractor Short Service Worker plan is reviewed with operator Offshore Field Superintendents, OIM's and Safety Coordinator prior to implementation.

As part of the transition phase of commencing the new contract, operator staff are continuing to support critical shutdown work and conduct the scheduled Critical Function Test (CFT) program.

Operator conducted a comprehensive Management of Change overview plan which considered the human organisation factor issues associated with a changeover of workforce with the new contract. Key activities that have been undertaken to manage those issues comprise of:

Adopting an 'over-communication' strategy with all the Leadership Team involved in the process;

Ensuring that Human Resources are involved in the processes;

Ensuring that members of the Leadership Team are more visible to the workforce through site visits with crews;

Having regular liaison meetings with contractor;

the Contractor are maintaining oversight of the process in conjunction with operator;

Both operator and contractor are ensuring that the workforce have the information and resources available from the 'Employee Assistance Program';

OIM's are ensuring a higher vigilance during the new contract transition phase through providing the workforce with; daily updates, holding ongoing meetings relating to the transition and Company relations.

A copy of the Management of Change overview plan was provided along with a copy of the contractor Transition Timeline Plan to support the discussions.

Heat Tracing Upgrade:
Noted a number of high pressure gas piping, pressure safety valves (PSV) and pressure transmitter instruments had insulating wraps. It is understood there are hydrate issues which are being addressed. At the time of inspection, Technicians were on the facility carrying out Platform Heat Tracing Upgrade to address the issues.

1492	29/5/2017	25/7/2017

HSRs

The Inspectors met with two Health and Safety Representatives (HSR) from the Catering and Production work groups. The HSRs advised that there are currently 8 HSRs at the facility representing the Production, Maintenance, Marine and Catering sections of the workforce. One HSR is scheduled to complete HSR training.
The Inspectors received copies of the most recent Facility Meeting minutes prior to the offshore component of the inspection. The HSRs advised that issues raised at the meetings are being progressed and that management are responsive to workforce concerns.
The HSRs advised Operator management are introducing initiatives with some HSR participation. For example, HSRs have attended a Key Performance Indicator meeting at Operator offices for initiatives in waste management. Other Operator management initiatives include improving process safety awareness and reviewing fire response training specific to the facility by Operator Management.
The HSRs also advised that the Catering team have requested additional medical training from Operator management in order to provide better assistance to the facility Medic in the event of a major incident.
The Inspectors provided the HSRs with current copies of the two NOPSEMA publications: 'The Regulator' and the '2016 HSR Handbook'.

'General observations'/ Emerging scope items

Potable Water Management
During the inspection following observations were made of the potable water system:

- A 1 monthly accommodation water filter preventative maintenance work order covering the duty mess, galley and laundry was sighted;
- Filters were observed on the water to the urn, bain-marie, dishwasher and steamers, however no filters were observed on the galley water; Operator reported the galley water is tested regularly and results for microbiological (May 2017) and water quality parameters (June 2017) for the galley water were sighted;
- However, no evidence was observed of a preventative maintenance schedule in the computerised maintenance management system for potable water tank cleaning.

1492-20 Recommendation:
Operator to ensure a preventative maintenance schedule is developed, implemented and embedded in the computerised maintenance management system for cleaning the potable water tanks on the facility.

Food Safety Management
During the inspection the following observations were made of the implementation of existing safety systems in the galley:

- Hair nets available for visitors were sighted;
- Signage at galley entry indicates hair protection/headwear wear is mandatory and the majority of catering staff were observed wearing hair protection in galley, e.g. bandana or hat; and
- However, some members of the workforce were observed wearing no hair protection, e.g. hair nets, bandana or hat.

1492-21 Recommendation:
Operator to ensure appropriate hair protection/headwear is worn in the galley as per the mandatory signage.

Vibration Management
An inspection of the commitments made in the safety case to manage vibration and observations of the painters and blasters working in the moon pool of the facilityresulted in the following observations:

- Members of the workforce were observed performing surface preparation and hand tooling activities using portable mechanical air tools which have the potential to expose personnel to hand arm vibration hazards e.g. MBX blaster, Trelawny needle gun and palm sander;
- The PTW or JSA did not identify vibration as a hazard; and
- No evidence was observed of a health risk assessment for vibration hazards or the implementation of technical controls to ensure vibration hazards are managed to ALARP.

The inspectors concluded that the commitments to manage vibration in the safety case have not been fulfilled, vibration as a hazard has not been identified in the JSA or PTW, and no assessment of the health risk has been made or controls implemented to reduce risk to ALARP.

1492-22 Recommendation:

Operator to ensure a health risk assessment is performed for activities where personnel are using portable mechanical air tools which have the potential to expose personnel to vibration hazards; and develop a plan to implement control measures in the form of engineering solutions and/or administrative controls, as appropriate, to eliminate or minimise the risk of exposure to hand arm vibration to members of the workforce to as low as reasonably practicable (ALARP).

An inspection of the commitments made in the safety case to manage vibration resulted in the following observations:

- The inspectors observed that the gas compressors generate mechanical vibration (through the surrounding structure) where members of the workforce stand during maintenance activities and transit during inspection routines;
- The compressor technician and maintenance supervisor reported a major service on any compressor requires 2 technicians for up to 7 days @ 7.6 hours/day to work on location at the compressors; a minor service on a compressor requires 1 technician for up to 4 days @ 7.6 hours/day. Job rotation for members of the workforce who perform a major or minor compressor service is not possible as the numbers of personnel scoped to the work has no redundancy; and
- No evidence was observed to indicate an assessment has been performed of the effects of whole body vibration on members of the workforce working in the gas compressor modules for prolonged periods.

The inspectors concluded that the commitments to manage vibration hazards in the safety case have not been fulfilled. The potential effects of whole body vibration on the compressor specialists, who work for prolonged periods in and around the mechanical equipment which is vibrating, have not been health or risk assessed.

1492-23 Recommendation:

Operator to ensure a whole body vibration risk assessment is performed for activities where personnel are working for prolonged periods in the vicinity of mechanical equipment which is vibrating.

1482	28/4/2017	24/7/2017

HSRs

A meeting was held with Health & Safety Representatives (HSR) on the CFP facility. HSRs were nominated by various work groups, however not all workgroups were represented. It was noted that not all HSRs received NOPSEMA accredited HSR training being that some HSRs were only recently being nominated while others have received HSR training from previous jobs. HSR / management meetings are yet to be held therefore no minutes of meeting were available. HSRs are not involved in incident investigations currently.

Inspectors discussed the following points with HSRs:

- Nomination, work groups & interactions. Interactions were related to interactions between HSRs, members of the workforce and interactions with inspectors during facility inspection;
- HSR establishment to ensure adequate work shift and panel coverage;
- HSR training and facilitation of training by Operator. It is essential that HSRs inform the facility management team upon acceptance of their nominations, so that HSR training can be arranged in a timely manner;
- HSR communication and the need to maintain appropriate records;
- HSR participations at work site investigation in particular incidents associated with the relevant work group;
- Access to information e.g. monthly reports, incident reports etc. Apart from welfare and personal safety matters, HSRs need to be aware of facility issues in particular matters related to Major Accident Events (MAE), MAE controls, facility integrity as well as Process safety;
- NOPSEMA contact & website – regulator and safety alerts; and
- NOPSEMA Inspector's involvements in conflict resolution between HSRs and management when deemed necessary.

'General observations'/Emerging scope items

The facility inspection was conducted covering topsides as well as below deck installation. The layout of the facility is well thought out. The office layout, accommodation and general fit-out are of high standard. Escape and egress routes were well sign posted and kept clear.

The following observations were discussed at the exit meeting:

Process vessels were found not stencilled with equipment tag numbers. The provision of visible tag numbers for pressure vessels and tanks is an established practice for process plant onshore as well as offshore. Visible equipment tag numbers facilitate equipment identification as well as incident reporting. Concise and early reporting of incidents in particular locations could potentially mitigate escalation of an incident.

Recommendation 1482-15

Operator to consider providing process vessels and tanks with equipment tag numbers by stencilling (or other means) which is visible from distance as part of the facility risk control.

Lack of accessibility for Grayloc flanges (Couplings) is widespread in particular at the riser balcony area. Grayloc couplings were located high above deck level and access to couplings will be a challenge. It is envisaged that scaffolding will be utilised extensively for future equipment inspection and repair. Excessive scaffolding could affect natural ventilation, potentially impact on fire and gas detection and increase "fire & blast" potential and intensity (Congested explosion risk). Additionally, pipe spools associated with Grayloc couplings are large bore and heavy walled items which are located high above deck. Removal and re-instatement of these spool pieces will require careful handling. An equipment / material handing study would typically address the safe removal and re-instatement of these spools pieces. It is unclear if the facility material handling studies covered these items, however, based on site observation, there is an overall absence of material handling provisions such as lifting lugs, pad eyes etc. located in the vicinity (and above removable spools).

Recommendation 1482-16

Operator to ensure that guidance on use safe usage of scaffolding is provided to make certain there is no incremental fire and explosion risk at the riser balcony fire zone.

Recommendation 1482-17

Operator to ensure that the facility material handling studies cover removal and re-instatement of pipe spools, or alternatively, conduct additional studies and identify provisions to facilitate safe removal and re-instatement of removable pipe spools located at the riser bay module.

A number of lifting lugs / pad eyes were not indicated with unique ID and SWL. It was stated that the facility lifting procedure prohibits the use of load attachment points if these are not assigned with ID and SWL. The inspectors pointed out that administrative control is the lowest form of risk control. Typically, a facility operator accesses all lifting / load attachment points for operational needs and items deemed required are managed under the facility lifting gear / lifting register regime. Items deemed not required are clearly identified or removed from the plant.

Recommendation 1482-18

Operator to ensure that non- identified pad eyes, lifting lugs and load attachment points are reviewed and bring items deemed required under the lifting gear register and subject them to inspection and test regime.

Recommendation 1482-19

Operator to ensure that all load attachment points deemed not required are clearly identified to prevent inadvertent use or remove them from service.

Small bore piping anti-vibration bracing is not provided consistently. Some systems of piping are provided with 2 plane anti-vibration bracing, conversely, an installation with a sizable isolation valve was found not adequately supported. There is some information provided on future vibration monitoring under the VOR action list. It is important to note that piping system vibration and fatigue can be caused by dynamic, transient as well as acoustic loads. The piping system vibration and resonance are directly affected by the production flow rate. HSE & UK Energy Institute provides guidance on piping vibration and mitigation (e.g. Guidelines for the avoidance of vibration induced fatigue failure in process pipework). The key is to conduct piping and tubing vibration surveys in a timely manner, involving specialist 3rd parties at various stages of the facility start-up to reach maximum rate. The surveys should identify areas of concern. Continuous close monitoring of piping system response is required to detect "ongoing" as well as the existence of transient and acoustic vibration risk irrespective of piping design which may (or may not) have incorporated mitigation controls as part of the piping system design review.

Recommendation 1482-20

Operator to ensure that a piping and tubing vibration fatigue mitigation strategy is developed based on the Energy Institute (UK) guidance (or similar) and implement key elements of the strategy, to ensure that the risk of tubing and piping failures due to vibration fatigue is reduced to as low as reasonably practicable.

The Station bill drawings posted were not dated with revision control. This observation was made at alternative as well as primary muster points. Without dating or revision control, it cannot be reasonably assured that the station bill on display is reflecting the current arrangements at the facility.

Recommendation 1482-21

Operator to ensure that drawings or plans on display at the facility are identifiable as being current and replace drawings or plans which are either dated and/or subject to revision control.

The anti-spray arrangements to mitigate against fire risk were found not to be consistently applied on fuel and flammable liquid system piping:

- Anti-spray arrangements were missing for some MEG/Glycol and diesel engine fuel piping.
- Fuel system piping on the emergency generator was found without anti-spray protection.
- All other fuel and flammable liquid system piping appeared generally to be provided with anti-spray arrangements to mitigate fire risk.

Recommendation 1482-22

Operator to ensure that all fuel and flammable system piping is reviewed to make certain that fire risk from leakage under pressure is reduced to as low as reasonably practicable using anti-spray flange guard or any other means.

Vertical ladders are not provided with ladder safe arrangements. In general, vertical ladders were provided with ladder cage and swing gate arrangements. Some vertical ladders at the facility are in excess of 5 metres. It should be noted that ladder cage does nothing to stop a vertical fall. With a cage system, a worker that slips on a ladder rung can drop from the top of the structure to the deck (or landing) resulting in serious injury. It is good practice to provide ladder safe systems for vertical ladders. HSE UK safety bulletin: CCID-2012 describes "Hooped ladders and the use of personal fall-arrest systems". The safety bulletin urged that "Duty holders should be aware that the hoops of a ladder alone may not be effective in safely arresting a fall without injury. Duty holders are therefore advised to review their risk assessments and consider if additional fall protection is required or alternative means of access supplied".

Recommendation 1482-23

Operator to consider a review of the control and use of vertical ladders, if vertical ladders are to be used as normal operational access, a risk assessment should be conducted. If appropriate, implement additional fall protection and/or other mitigation risk control, to ensure that during normal operational use, fall from vertical ladders is reduced to ALARP.

Deployment of CO2 and dry chemical extinguisher trolleys will be difficult under the current arrangements on the helideck: large capacity CO2 and dry powder fire extinguishers are located in an inclined position adjacent to the helideck. The dry chemical weighs about 30 kg. In the event of an emergency it would be very difficult for the HLO team members to move trolleys out of stowage and to apply the fire suppressant efficiently.

Recommendation 1482-24

Operator to ensure that the CO2 and dry chemical trolley stowage arrangement on the helideck is reviewed. Implement arrangements such that fire suppressant can be applied promptly in the case of emergency on the helideck without introducing manual handling injury risk for HLO team members.

The emergency fuel shutoff provision (pull handle) located outside of the emergency generator (Egen) room was found without a label or signage. Emergency fuel shutoff is a safety provision to isolate fuel remotely outside of the Egen enclosure.

Recommendation 1482-25

Operator to ensure that signage or a label that clearly indicates the functionality of the emergency fuel isolation pull handle located outside of the Egen room is installed.

There are four freefall TEMPSCs provided for facility abandonment. The facility SAP PM was verified for inspection and test routines associated with TEMPSCs. TEMPSCs' wet launch is currently not in SAP PM work scope. NOPSEMA has issued guideline (N09000-GL-1643) in February 2016 "Assurance of TEMPSC and associated systems". The guideline communicates the importance and the need for holistic integrity assurance for TEMPSC in particular assuring structural as well as water tight integrity. The guideline urges operators to develop and implement methodologies for conducting assurance activities that can be performed without risk to personnel or damage to equipment.

Recommendation 1482-26

Operator to ensure that a strategy to assure integrity of TEMPSCs is developed and implemented. Matters such as verification of launching gear release assurance under load, wet launching of TEMPSC to verify water tight and structural integrity, propulsion & steering system integrity should be included.

The inspectors sighted the "Electrical Safety Operating" procedure. The procedure describes safe electrical practices on Operator facilities power generation and distribution systems. There is no information or check list on pre-energisation check of temporary or 3rd party equipment by the facility electrician. The inspectors also sighted "Management of temporary equipment during HUC Phase". The stated temporary equipment procedure specifies Operator requirements, quality assurance, and stakeholders' responsibilities when mobilising temporary equipment to the facility. Appendix A of the temporary equipment procedure, section on "Electrical certificate of test" listed a number of items that may form elements on the pre-energisation check

list. Currently, there is no information as to what checks need to be performed by the facility electrician prior to power hook-up, energising of 3rd party equipment, a check list utilised or any records kept to demonstrate compliance.

Recommendation 1482-27

Operator *to ensure that a process that must be verified and signed off by the facility electrician prior to powering up 3rd party equipment is developed and implemented. All associated records must be maintained.*

The inspectors received an induction brief onshore as well as site Induction including induction tour. The site coverage was comprehensive. Noted Omissions from content were discussed at the exit meeting:

- Noise exposure in particular areas require double hearing protection;
- Free fall TEMSPC boarding & launching being that free fall boats could be unfamiliar for most visitors; and
- Actuated doors within LQ being that these doors are unconventional, pneumatically actuated and could malfunction in the event of facility muster and abandonment. These doors can be manually operated but it is not obvious.

Recommendation 1482-28

Operator to ensure that the site induction is updated to include normal operations risk such as noise exposure, as well as emergency response risk by providing adequate information to facilitate facility muster potentially impeded by internal doors. Information on safe boarding and launching of TEMPSCs also to be included.

1554	3/4/2017	30/5/2017

HSRs

Asbestos management

A HSR concern was raised relating to asbestos exposure to a member of the workforce.

The HSR has sought NOPSEMA advice.

An Issue Resolution Notice and corresponding Provisional Improvement Notice has been issued (Facility Asbestos Management Manual be updated in hard and soft copy to contain all relevant information).

Operator have committed to resolving updates to the Asbestos Management Manual.

Other concerns relate to

- Obtaining information from the Operator - OPGGSA Schedule 3 Clause 34(1)(d).
- Allowing the HSR to be assisted by a consultant (OPGGSA Schedule 3 Clause 35(2)), which must be agreed in writing.

Gas/ oil separator TUV700

On 29/05/2017 as part of the [X] project upgrade, the high pressure gas/ oil separator was brought online.

Members of the workforce expressed concern that the vessel and corresponding pipework experienced a significant rise in pressure (from 450kPa to 9000 kPa) in a short period of time (10 seconds).

The Operator explained that Engineering advised that the separator and associated pipework remains fit for service (FFS), however the reasons why the vessel was determined to be FFS were not provided in detail.

Recommendation 1554-1

Ensure information relating to the engineering assessment for the rise in pressure (from 450kPa to 9000 kPa) in a short period of time (10 seconds) in the high pressure gas/ oil separator is shared with appropriate personnel (e.g. OIM, Operators) to allow a review of the information.

List of HSRs on noticeboard

The list of HSRs was on the noticeboard – dated 03/08/2016. This list is out of date.

Clause 27 of the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGSA) states that the operator of a facility must:

(a) prepare and keep up to date a list of all the health and safety representatives of designated work groups comprising members of the workforce performing work at the facility; and

(b) ensure that the list is available for inspection, at all reasonable times, by:

(i) the members of the workforce at the facility; and

(ii) OHS inspectors.

Recommendation 1554-2

Ensure the list of HSR is kept up to date, and placed on the noticeboard.

Minutes of an offshore HSR meeting (08/02/2017) was on the noticeboard.

1514	31/3/2017	23/5/2017

HSRs

Two meetings were held; one for the day shift and one for the night shift HSRs. All HSRs who attended the meetings had received HSR training.
Periodic meetings are conducted with Offshore Installation Manager (OIM) and Health Safety and Environment Coordinator (HSEC) in attendance at the invitation of the HSRs. The minutes of the meetings are posted on Crib Room ('dirty smoko') notice board. A 'traffic light' system is used to track open items, new items are highlighted in green and items open for more than 18 weeks are highlighted red. One item, a process safety item regarding Ex inspections on drilling equipment was observed to be open for more than 18 weeks on the minutes dated 22 April 2017. Further enquiries found that an Electrical Equipment in Hazardous Areas (EEHA) specialist is scheduled to conduct an inspection of [X] to identify drilling equipment that is provided with electrical power.
The HSRs reported that the initiative 'HSE Perfect Day' is a positive contribution to safety as it provides the workforce an opportunity to discuss and reflect on HSE issues that may have been encountered throughout the day.

'General observations'/ Emerging scope items

Grating and Handrails

Grating and handrails in high traffic areas were observed to be in a reasonable condition with minimal corrosion. However, significant corrosion was observed in low traffic areas such as the flare bridge and drilling modules. Operator has committed to conducting two flare bridge campaigns is August and October 2017 to "*address priority handrails and gratings*" and the balance of handrails and gratings will be scheduled for the 2018 flare bridge refurbishment campaign.
Inspection of the drilling module is in progress to identify handrails and gratings requiring replacement. Operator has committed to remediate the drilling module gratings and handrails by the fourth quarter of 2018.

Recommendation 1514-16

Operator *to ensure that gratings and handrails on emergency escape routes are remediated to a condition that reduces the risks associated with emergency escape to as low as reasonably practicable.*
Grating is included within performance standard E01 Escape and Evacuation Routes. The performance standard does not include specific performance standard criteria regarding survivability of gratings.
In a response to a recommendation made by NOPSEMA in 2014 on [facility] to review the use of Fibre Reinforced Plastic (FRP), Operator responded "*it can be concluded that correct application of the standard requires that facility primary/secondary escape routes must be either grated or plated steel decks to meet the L1 criteria*."
It is noted that Operator has transferred leanings across assets and conducted an inspection of facility to identify FRP grating that requires to be replace with steel gratings.
A trolley is used on the flare bridge to transport scaffolding. Areas of FRP on the flare bridge were observed to be degraded.

Recommendation 1514-17

Operator to ensure that FRP gratings on the flare bridge is suitable for the loads and environmental conditions to which it will be exposed in normal operations and emergency situations.

Housekeeping

Generally good housekeeping was observed. Some minor issues were noted during the facility walk around which were reported by the surveillance engineer through the [X] process for rectification. A number of corrective work order tags were still in place after the corrective work has been completed and closed.

Safety case

Safety Case Section 10.3.2.2 'Flare Alternative Muster Point' states "*The flare AMP contains two 25 man life rafts and 50 descent donuts in order to provide a means of escape to sea*". The safety case does not reflect the current escape arrangements at the Flare AMP where scramble nets are provided.

Recommendation 1514-18

Operator to ensure that escape arrangements at the Alternative Muster Station are in accordance with the Escape, Temporary Refuge, Evacuation and Rescue Analysis (ETRERA) described in safety case.

Passive Fire Protection

On the subcellar deck, temporary passive fire protection (PFP) has been applied to trunking for control lines for driven-closed pipeline valves. The identification of impairment of the PFP may have required a notification to NOPSEMA under Regulation 2.41 (damage to safety critical equipment). Operator should satisfy themselves that reporting processes are robust and those responsible for making notifications have sufficient understanding of the reporting requirements.

1605	21/4/17	9/5/17

HSRs

A meeting was held with the HSRs on-board. The HSRs reported there was good communication with management. The HSRs noted a concern in regards to managing dangerous goods entering the facility; in particular, a specific concern was raised in regards to lithium metal batteries being transported to the facility without appropriate controls. This was discussed with management who indicated that the items in question were fire extinguishers for lithium batteries.

'General observations'/ Emerging scope items

During the inspection the NOPSEMA inspectors made a number of observations which were outside the planned inspection scope. These observations and findings are listed below:

Deluge and breathing systems have been installed on the lifeboats as described in the recent safety case revision.
A project specific activity specific operating guidelines (ASOG) is in place detailing DP operational limits for the project.
The facility uses HAZOP cards; there is good participation with no mandatory quota.
With regards to dropped object protection the NOPSEMA inspectors found:

- Secondary retention was in place for, all equipment situated in the moonpool/tensioner area.
- A working aloft toolbox and associated logbook were sighted and in place.
- A No-Go RED zone is well defined and marked up around the moonpool area.

The DP console has a Perspex guard which is attached to the DP system to prevent accidental deactivation of the system. Operator advised measure was implemented in response to NOPSEMA's Safety Alert 62. The bridge crew advised the NOPSEMA inspectors that they had contacted the manufacturer to see if they could install a permanent flip cover but were advised that this would void the warranty.

Inspecting and placing an inspection tag on hand luggage at Perth airport does not value add, anything can be added to hand luggage between Perth and the Broome heliport.

The high pressure (HP) flexible Choke line is not protected and is outside designated hazardous areas, the HP choke line connections are also outside of the designated hazardous areas (Figure 2).

Recommendation 1605-26

Operator to ensure all high pressure lines are contained within designated hazardous areas and suitably protected from impact damage.

There are several walkways on the back deck that are exposed to hazards associated with high pressure hoses despite the barriers. For example one un-barricaded walkway is within a meter of a high pressure flush and return (Choke) line; see Figure 2.

Recommendation 1605-27
Operator to ensure walkways are appropriately protected from high pressure piping and its potential for failure.

Assorted chemicals were stored on a pallet on the back deck, each item had a Material Safety Data Sheet. The NOPSEMA Inspectors requested the crew to review the chemicals and their compatibility to be stored with one another. One item was found to be incompatible and moved to a separate storage area.
The Deck Plan provided to the marine crew does not designate the dangerous goods contents of each container.
The hazardous area plan for the back deck does not specify an area for Acetylene cylinder storage; currently the acetylene quad is not stored in a designated hazardous area.
Recommendation 1605-28
Operator to ensure an effective process for the management of hazardous goods on the back deck during project work is implemented.

The deck area next to the self-propelled hyperbaric lifeboats entry point has a number of large fluid containers which were not appropriately secured; the facility crew secured these tanks during the inspection.

1444 & 1542	6/3/2017	11/4/2017
1475	20/2/2017	28/3/2018

HSRs

The inspectors met with 3 HSRs. In general, it was found that the HSR processes at the facility continue to be functional, with HSRs covering all work groups. The HSRs advised the inspectors of 2 changes to the HSR processes at the facility that are intended to be improvements. Firstly, an additional HSR has been elected for each work group, resulting in a total of 14 HSRs at the facility. Additionally, a Health and Safety Committee, comprising HSRs and offshore management, has been established. This committee meets separately to the existing HSR meetings; these meetings are on a regular schedule.
The HSRs continue to raise health and safety issues as required and the inspectors found that Operator is responsive to these issues. There is one current issue that appears to be taking an excessive time to address, and NOPSEMA will check its resolution at the next Planned Inspection: lights under the galley range hood have been out of service since February 2014.
The inspectors noted that the replacement of mess-room tables on hygiene and personal safety grounds has been completed.

'General observations'/ Emerging scope items

The inspectors noted that the facility's operational areas are maintained in a clean and tidy state.
A number of general OHS opportunities for improvement were observed:

- Non-slip edging on emergency escape stairs from the process deck to the main deck are severely corroded (see Photo 1);
- Significant corrosion on carbon steel components of TEMPSC launch control wire mechanism on both port and starboard boats (see Photo 2);
- The sound-powered telephones in the Engine Control Room and in the Bridge are out-of-service, a corrective maintenance notification (notification 20254127) was raised in July 2016, but has not yet been actioned.

Recommendation 1475-10
Operator to ensure that a review is undertaken of the condition of the non-slip edging on emergency escape stairs from the process deck to the main deck, and other emergency escape stairs, and conduct rectification work where appropriate.
Recommendation 1475-11
Operator to ensure that all components of the launch control wire mechanisms on the facility TEMPSC, including the carbon steel pad-eyes, are fit for purpose.
Recommendation 1475-12
Operator to ensure that the sound-powered telephones in the Engine Control Room and in the Bridge are returned to service.

1540		

HSRs

There was no elected HSR on board during the first day of inspection, however Operations Technician HSR arrived on the second day providing an opportunity for the Inspectors to update on the inspection scope and discuss the gas leak investigation.

As part of the inspection, events of the gas leak were openly discussed with members of the workforce who were on site during the incident.
Details of recent (2016) HAZOP was followed up onshore regarding the design issue of re-locating pressure gauge take-off points on Wells.

'General observations'/ Emerging scope items

Discussion with the first on-scene to the gas release incident who wore the Fire Suit and BA identified that wearing the fire helmet with the BA mask was uncomfortable and restrictive as well as restricted vision by 'fogging up'. Given the first-hand experience of actually using the equipment all together in a real event, they consider it would be preferable to have the type of fire helmet that included BA capability. It was not clear from discussion whether the training for the fire team includes exercises using both the fire helmet and wearing a BA breathing mask. Improvements in protective equipment are always continuing and enclosed fire helmets with BA breathing capability are now common.

Recommendation 1540-2

Operator to review the lessons learnt from the persons who attended the site of the gas leak using fire protection equipment and BA apparatus. The review to determine the continued applicability of the fire team training and fire helmet and breathing apparatus.

Hearing Protection: Operator have been undertaking a review of hearing protection comprising of Fit Testing for all ear plugs and Ear Muff's. There is now a wider range of 3M hearing protection products and also some items have been discontinued. All Operator work groups were updated with operator's enhanced hearing protection program with a presentation; 'Hearing Protection Update Work Group Presentation Jan 2017. A copy of the presentation was provided to the NOPSEMA Inspectors for information. Operator are updating the procedure to reflect the changes being made to their hearing protection requirements.

PPE Trial: The NOPSEMA Inspectors were advised that operator are currently conducting a trial between Feb – March 2017 on new gloves for PPE following a review of PPE that has identified improved glove technology providing better protection against cuts, abrasions and to ensure partial impact protection is provided to the knuckles, back of hand and finger. Three types of gloves are being trialled; Maxitek ForceShield, Bollwerk Forcefield Rigger Defence and, Ironclad Revolution.

1496	27/1/2017	27/2/2017

HSRs

Seven Health and Safety Representatives (HSR) were available to meet with the inspectors. The seven HSR's came from all of the work force groups including catering and third parties. Names of HSR's on board are posted on a notice board in recreation room. The HSR's advised that meetings are held regularly and that management are generally receptive to the issues that are raised. Minutes are taken during the meetings. A copy of minutes from the most recent meeting was made available for the inspectors review.
The minutes were laid out in the form of a chronological history of each open or recently closed issue, which was easy to follow. Although there were items on the minutes that had been open since 2015 the inspectors noted that the operator had been actively pursuing solutions to the issues. An example is the pollution from the main engine exhausts being blown back onto the facility. The operator has taken a number of measures to reduce the impact and has now put forward an engineering solution that should be implemented by the end of June 2017 (See also recommendations 1102-5 in appendix C).

'General observations'/Emerging scope items

The standard of housekeeping on the rig was generally good. Walkways and escape routes were kept clear. The inspectors noted that the eye wash station at the waste oil is storage area near the aft lifeboats is not serviceable.

Recommendations 1496-25

Operator to either repair or replace the eye wash station at the waste oil is storage area near the aft lifeboats.

Noise

The inspectors reviewed report[x], Noise Survey and discussed the findings with facility crew. The status of the recommendations made in the report was unknown at the time of the inspection.

Recommendations 1496-26

Operator to ensure the recommendations made in report [x] Noise Survey are reviewed and create an action plan to address noise exposure risks.

Food Safety

The Corporate Safety Health and Environment Handbook and the safety case state “Paper caps are to be worn in all food service areas as well as hair nets where appropriate. No ball caps are to be worn while working in the galley”. The inspectors sighted galley staff wearing baseball type hats. In addition, a member of the galley staff was sighted eating in the galley rather than the mess.

Recommendations 1496-27

Operator to take measures to ensure that food hygiene standards are maintained.

Thermal Stressors (Heat Stress)

Preventative and recovery control measures used for managing hydration and heat stress are shown in Table 2.

It was reported to the inspectors that there were faults with both the ice machines which was limiting the supply of ice.

Recommendations 1496-28

Operator to take measures ensure that there is an adequate supply of ice for managing heat stress.

Potable water storage, testing and filtration

The inspectors discussed the production and handling of potable water with the crew. Water testing is performed on a monthly basis, with samples sent to an external laboratory for analysis and interpretation of the data .The laboratory lets the SHE Advisor know if the result of the testing does not meet the standard. Water filters are changed based on observed changes in pressure (pressure drop) or following lab results which are not within the standard. The changing of water filters is not included in the planned maintenance system. It was also noted that although there is a requirement to test water samples there were no instructions on how to take samples to ensure they are taken correctly to avoid cross contamination.

Recommendations 1496-29

Operator to ensure work instructions for taking water samples for testing are developed and implemented.

There are three potable water storage tanks on the facility. A 1 yearly inspection and cleaning of the day tank (volume 33.7m3) was performed 17 October 2016 (work order #x). As the work order only refers to the day tank it is unclear from the work order or close out notes if the 2 pontoon tanks (volume 735m3) are captured in work order #x.

Recommendations 1496-30

Operator to ensure all 3 portable water storage tanks on the facility are inspected and cleaned on a yearly as per the preventative maintenance schedule.

Work order: [x], step 25-25 states that the Barge master (marine PIC) is to keep an up-to-date register for last inspection report and last thickness measurement of pontoon tanks and day tank along with other details. There was no register available.

Recommendations 1496-31

Operator to ensure that work instructions in the computerised planned maintenance system are current and are followed as described.

Station Bill

The operator should also consider providing a clear Perspex (or similar) cover for the station bill posted on Level 2 of the main accommodation stairwell. At present the cover is opaque making it difficult to read.

1512	10/1/2017	13/2/2017

HSRs

The inspectors held discussions with the Health & Safety Representatives (HSRs) and members of the workforce during the inspection. The main outcomes from this discussion were:

Facility leadership engaged with the workforce in addressing occupational health and safety (OHS) issues – Walk the Talk

The Supervisor Blue Hat program provides the workforce a higher level of safety focused interaction and engagement with their supervisors and management

The top 10 OHS ‘issues list’, raised by the HSR committee, is well supported by leadership onshore and offshore

Fatigue as a risk is well addressed and documented within the facility’s fatigue register

Corrosion concerns on decks in modules x, y and down toz. The concerns were verified during the inspector’s plant walk-around and are discussed in Section 3.3 of this report

Some areas around the facility were observed by the HSRs to have scaffold material that was originally utilised to build / support plant equipment and infrastructure, and this was still in place. This is discussed in Section 3.3 of this report.

‘General observations’/ Emerging scope items

Other issues arose during the course of the inspection and, as a result, were added to the scope. These additional items were:

- Escape and evacuation through the escape to sea route
- Dropped object hazards
- Passive Fire Protection (PFP) on the Modular Support Frame (MSF) Structure
- Lifeboat maintenance and wet test.

Escape, Temporary Refuge, Evacuation and Rescue:

The Operations Safety Case, Chapter 4, Table 4-1, states:

"There are 3 designated means of evacuating the platform; Primary – provision of a helideck, Secondary – via the Totally Enclosed Motor Propelled Survival Craft (TEMPSCs / lifeboats) and Tertiary - Life rafts, scramble nets, knotted ropes to allow 'escape to sea'."

The inspectors observed that the tertiary means of evacuation through the escape to sea route had been barricaded off. The stairways leading to the 'escape to sea' route exit were decommissioned due to corrosion and integrity issues. It is considered appropriate for operator to review facility signage, and escape and evacuation documentation, to ensure that it reflects current safety case commitments.

Recommendation 1512-5

Operator to:

(a) ensure tertiary evacuation means are reinstated; and

(b) in the interim, update the facility's escape and evacuation routes, in consultation with the workforce, to reflect that the 'escape to sea' routes are inaccessible.

Galley Dropped Object Potential

The inspectors noted that cooking utensils were inadequately stored in the kitchen with a potential of a dropped object hazard. The catering staff advised the inspectors that shelving within the kitchen was not sufficient and ergonomically designed. Operator is to consider whether adequate storage and shelving is maintained in the galley. NOPSEMA will monitor this issue in future inspections.

Passive Fire Protection on the MSF

The inspectors observed some areas of the MSF with likely degraded Passive Fire Protection (PFP). Operator is advised to look into the issue and assess whether PFP on the MSF is fit for purpose. NOPSEMA will monitor this issue in future inspections.

Lifeboat Winching Operations

The inspectors noted that all of the lifeboat (TEMPSC) winch fall-wire ropes (4 sets) were insufficiently lubricated. The OIM informed the inspectors that a heavy rain event at the facility led to the lubricant being washed out. A SAP corrective work order was raised to address this issue. The inspectors deem that no further NOPSEMA action is required at this time.

1543 & 1544	15/12/2016	1/2/2017

HSRs

Discussions were held with shift 1 HSR.

A list of current (12 October 2016) HSRs was posted on the noticeboard, meeting the requirement of OPGGSA 27 and a copy of the 4Q2016 meeting minutes was posted on the noticeboard.

'General observations'/ Emerging scope items

The 4th quarter initiation and activation CFT's were completed on 27/11/2016. Shutdown CFT's were completed on 27/11/2016. MWOs were raised as appropriate for failed CFTs.

The second half fire and safety equipment checks, including deluge and fire pump performance testing, were completed on 19/9/2016. Both fire pumps were able to meet the minimum deluge flow for the well bay [x] and well bay [y] requirements.

The Inspectors reviewed the list of planned maintenance work orders in exception (more than 30 days overdue) and noted the following work order relating to the inspection scope was 34 days overdue at the time of the inspection:

- MOL pump - 9 monthly turbine MOL pump tubing inspection (MWO x)

The inspectors were advised after the Exit meeting that this tubing inspection was scheduled for the week ending 17 February 2017 but due to other breakdowns it has been rescheduled for week ending 24 February 2017.

No North/South sea deck access; new grating delivered to platform, awaiting resources to install. Likely to be installed in the next 2 weeks – weather permitting. Refer open recommendation 1357-3
Directive 97 (HLA Generator interim access controls) dated Sept 2015, estimated date for removal was 31/12/2015. The inspectors were advised after the Exit Brief meeting that a new generator has been procured and will be installed within three months.
New ladders, back scratchers, grating and handrails were located on the main deck lay down area. The OIM advised the Inspectors that the installation work was imminent and awaiting resources to come available after gas block platform shutdowns.
Recommendation 1544-10
Ensure newly fabrication replacement, grating, handrails, ladders and backscratchers are installed prior to their respective Latest Acceptable Completion Dates (LACD).

The Inspectors were advised a recent campaign for dropped objects was conducted. A number of potential dropped objects were observed along the West side sub cellar deck. It was noted that the main deck area below the radio mast was barricaded off.
Recommendation 1543-4
Ensure the potential dropped objects identified during the inspection above the walkway at sub-cellar deck are included in the scope for the dropped object mitigation campaign.

The East fire pump was returned to service prior to the planned inspection.
The Test Separator full PVI was found overdue with a LACD 2/12/2016; the Inspectors were advised this WO is deferred in [system] until August 2017 and is being tracked by the "Red Box meeting process.
The 9 Month turbine MOL pump tubing inspection was found 64 days overdue and open in IPES; however the inspectors were advised the task is completed and requires administration effort to close out in [system].
Operator have recently introduced a new fleet of helicopters. It was noted that the red tag for the window seal (for emergency escape) would be difficult to grab and pull in an emergency situation for those passengers seated in the rear facing seats. The tag is effectively behind the elbow.
Recommendation 1543-5
Consider relocating the red tag for the window seal such that it is easily located in the event of an emergency.

The second helideck gate for the staircase is still to be implemented – gate available for installation - LACD March 17. New conductor guides, grating, handrails, ladders and backscratchers were located on the main deck lay down area. The OIM advised the Inspectors that the installation work was imminent and awaiting resources to come available after gas block platform shutdowns.
Recommendation 1543-6
Ensure newly fabrication replacement conductor guides, grating, second helideck gate, handrails, ladders and backscratchers are installed prior to their respective Latest Acceptable Completion Date (LACD).

1478	15/11/2016	16/01/2017

HSRs

Six Safety Representatives attended the meeting covering all work groups at the facility. The Safety Representatives advised that the Safety Committee process is working well at the facility with no significant outstanding action items from recent meetings. Facility management were reported to be responsive to health and safety issues raised by the Safety Committee.

'General observations'/ Emerging scope items

General housekeeping around the rig was found to be satisfactory. There were significant amounts of materials, equipment and containers stored around the rig, however, walkways and escape routes were kept clear.
A leaking cylinder on the hydraulic door to the port forward pump room was observed.
Recommendation 1478-21
Rectify the leaking cylinder on the hydraulic door to the port forward pump room.

In the water mist room significant corrosion was observed to a pipe/valve threaded connection for the drill water solenoid valve located on the forward bulkhead.

Recommendation 1478-22

Rectify the corrosion on the pipe/valve threaded connection for the drill water solenoid valve located in the water mist room on the forward bulkhead.

The signage for high noise areas that require double hearing protection to be worn is not adequate as it does not depict that double hearing protection is to be worn.

Recommendation 1478-23

Ensure that appropriate double hearing protection signage is installed at all high noise areas requiring the use of double hearing protection.