

OHS IMPROVEMENT NOTICE

To: Woodside Energy Limited

In conducting an OHS inspection in relation to the Nganhurra Floating Production Storage and Offloading (FPSO) facility, I, [REDACTED], a NOPSEMA inspector appointed under section 602 of the Act, am satisfied on reasonable grounds that the person named above as the responsible person is contravening clause 9(2)(c) of Schedule 3 to the Act at the Nganhurra facility.

The reasons for my opinion are:

The condition and reliability of the Inergen branded inert gaseous fire suppressant system, identified in the facility safety case as a Safety Critical Element and a mitigation barrier for fire protection during a Machinery Space Loss of Containment event (MAE-05), had reduced inspection and maintenance which may compromise its effective and safe operation.

The Inergen system has discharge points on the forward Upper Deck and the Upper Deck of the engine room/machinery space (including the stairwell and engine room hatch) and the 2nd and 4th deck of the engine room at the Nganhurra facility. The function of this system is to extinguish fire and support the safe escape of personnel.

The Inergen system at the Nganhurra includes 448 cylinders containing high pressure gases (300 bar) co-located in a dedicated room on the Upper deck. The system was installed during the facility's construction in 2005-2006.

- Testing deficiencies: Performance Standard (F19 – Gaseous Extinguishant Systems) states that the Inergen gas cylinder will be inspected in accordance with AMSA MO Part 15 (2009), which was superseded by AMSA MO Part 15 (2014) on 01 July 2014.
 - AMSA MO Part 15 (2014) states that *“Equipment required by this Order must be inspected, maintained and tested in accordance with IMO circular MSC.1/Circ.1432 Revised guidelines on maintenance and inspection of fire protection systems and appliances”*).
 - IMO circular MSC.1/Circ.1432 requires hydrostatic testing of 10% of the cylinders within 10 years to allow continued services beyond the 10 year service life. Hydrostatic testing was a new requirement in AMSA MO Part 15, effective 1 July 2014. This hydrostatic testing was due in 2015 and was not done.
 - In 2015, and during the effective period of AMSA MO15 (2014), the facility operator tested 10% of the cylinders using an ultra-sonic thickness (UT) testing method. It is noted that IMO circular MSC.1/Circ.1432 does not mention UT at all, nor does it provide alternatives to the prescribed hydrostatic testing method as a means of demonstrating extended service beyond 10 years.
- Equipment failures: During inspection #1707, the Nganhurra ‘List of Performance Standard Deviations’ was sighted.
 - Entry (MOC 66096) describes the failure of 2 Inergen cylinders: one in January 2018 and one in April 2018. Both failures observed were pin-holes. Stress corrosion cracking has been indicated by the facility operator to be the cause of failure for the first cylinder. The second cylinder has not been retrieved from the system to

determine the cause of failure.

- The facility operator confirmed the potential full cylinder rupture of one or more of the remaining cylinders (446 out of a total of 448 cylinders).
- Maintenance deficiencies: The facility operator's maintenance system describes 1Week, 1Month, 1Year & 5Year planned maintenance schedules.
 - Since the second cylinder failure in April 2018, the facility operator has deferred maintenance that requires entry into the Inergen room (due to safety concerns raised as a result of not being able to rule out full cylinder rupture of the remaining cylinders). The operator stated that the 1Week procedure was still being done, as it does not require entry into the Inergen room.

The Inergen system has not been demonstrated to be fit for purpose since 2015; the recent equipment failures indicate that further failures may occur; and, the condition of the Inergen system cannot be effectively monitored and maintenance carried out, as a result of personnel being restricted from entering the Inergen room. As such there is reduced assurance that the Inergen system would operate as intended.

As a result of this contravention I am satisfied that there is, or may be, the following risk to the health or safety of any person:

The potential for escalation of a Machinery Space Loss of Containment incident to a major accident event that could lead to injury or loss of life at the facility due to the failure/under-performance of the Inergen system as intended.

You are required to take action within **45** days of the date of this notice to prevent or reduce the risk.

I am also satisfied on reasonable grounds that the following action is required to be taken by the responsible person within the period specified above:

- Implement assurance tasks to ensure that the Inergen system is demonstrated to be fit for its intended function and that it remains in that condition, while restricting access to the Inergen room;
- or
- Implement such other controls as required to reduce risk to a level that is as low as reasonably practicable.

Signed:



NOPSEMA Inspector

Dated: 15 October 2018

NOTES: (Please see back of notice)

The following section is to be completed if serving the notice to the responsible person by giving it to the operator's representative or titleholder's representative at the facility, or the identified responsible person onshore.

This notice was delivered to: _____

(insert name)

in the office or position of _____

(insert office or position)

at: _____ am/pm on _____

(insert time)

(insert date)

When the required improvement has been completed, return this part of the notice to the following person at the address below:

Name: [REDACTED]

Position: NOPSEMA Inspector

Address: Send in electronic format via email to:

submissions@nopsema.gov.au

Telephone number: +61 8 6188 8700

Specify the action that has been taken to comply with this notice in the space below.

Improvement Notice No. **724** has been complied with by:

Signed: _____ Date: _____

NOTES:

1. Under clause 78 of Schedule 3 to the Act, a person who fails to ensure that this notice is complied with, to the extent that it relates to a matter over which the person has control, may be liable to a penalty of 300 penalty units or a civil penalty of 400 units.
2. This notice must be displayed in a prominent place at or near each workplace at which work affected by the notice is being performed and, must not be tampered with or removed before the notice has ceased to have effect.
3. If the notice is not issued by being given to the operator's representative at the facility, the responsible person (unless the responsible person is the titleholder) must cause a copy of the notice to be given to the operator's representative.
4. If the responsible person is the operator or an employer (other than the operator) of members of the workforce, the operator's representative at the facility must give a copy of the notice to each health and safety representative for a designated work group having group members performing work that is affected by the notice.
5. If the responsible person is the titleholder, as soon as practicable after issuing the notice, the NOPSEMA inspector will take reasonable steps to give a copy of the notice to the operator and, if the NOPSEMA inspector is at the facility when the notice issued, the operator's representative at the facility.
6. If the responsible person is the titleholder, but the inspector is not at the facility when the notice is issued, the operator must give a copy of the notice to the operator's representative at the facility.
7. As soon as practicable after issuing the notice, the NOPSEMA inspector will take reasonable steps to give a copy of the notice to, where applicable:
 - (a) the employer of an employee who is a member of the workforce if the notice is issued to the employee, and in connection with work performed by the employee, and
 - (b) the owner of any workplace plant, substance or thing that the notice relates to, unless the owner is the responsible person or an employer referred to in (a), and
 - (c) if the responsible person is the owner of any workplace, plant, substance or thing because of which the contravention has occurred, or is likely to occur: the operator of the facility, and if the employer of employees who work in that workplace or who use that plant, substance or thing is a person other than the operator—that employer; and
 - (d) the titleholder, if the responsible person is the operator, and the contravention relates, or is likely to relate to, the titleholders' well related obligations.
8. Under item 8 of subclause 80A(1) of Schedule 3 to the Act, any of the following persons may in writing request the reviewing authority to review the NOPSEMA inspector's decision:
 - the operator of the facility
 - the titleholder, if the notice is issued to a titleholder;
 - any other person to whom the notice has been issued;
 - an employer, if affected by the decision;
 - a relevant health and safety representative;
 - a relevant workforce representative, if requested by a member of the workforce affected by the decision;
 - a person who owns any workplace plant, substance or thing to which the NOPSEMA inspector's decision relates.
9. An improvement notice ceases to have effect when the responsible person takes the action specified in the notice.