Getting Started

• Welcome

• Acknowledgement of Country
Working Together

• Be an explorer not a lawyer

• Offer options

• Look at what’s possible
Todays Purpose

• Review NOPSEMA’s proposed expectations to improve crane safety

• Identify refinement and feasibility to establish sector wide requirements
Trends in crane safety

Mark Emmerson
Introduction

Governing legalisation: OPGGS(S) regulations & OPGGS Act

NOPSEMA’s functions include:

• to promote the occupational health and safety (OHS) of persons engaged in offshore petroleum operations or offshore greenhouse gas storage operations

• to advise on matters relating to OHS, well integrity and environmental management

Regulatory framework

• Objective-based regime

• Risk remains with the duty holder

• Suppliers and contractors have responsibilities

Pertinent example OPGGS(S) regulations

• Regulation 2.7 – Standards

• Regulation 2.5(3)(f) – Inspection, testing and maintenance

• Regulation 2.9 – Competent workforce
Prevention of Major Accident Events

1. Major hazards are recognised and the worst potential consequences are understood throughout the business.

2. Plant and equipment must be 'fit for purpose' to reduce the risks from the major hazards to tolerable levels.

3. Systems and procedures are provided which ensure proper operation for plant and equipment and which maintain their integrity.

4. Sufficient staff, with appropriate experience and training are provided to implement the systems and procedures.

5. Emergency procedures that respond adequately to foreseeable incidents are both in place and practised.

6. Incident investigation and monitoring & auditing of performance take place in order to learn from experience and promote continuous improvement.
Quantitative data

Source of evidence

- Notifications of dangerous occurrences made by duty holders
- Gaps in compliance discovered by NOPSEMA inspectors in the course of planned inspections.

Quantitative evidence

In May 2021 there were 67 cranes in operation in the regime.

In the period July 2020 to May 2021 NOPSEMA was notified of 29 crane-related dangerous occurrences.

In the majority of these occurrences NOPSEMA carried out investigations, and observed varying degrees of gaps in compliance.
NOPSEMA considers these dangerous occurrences as indicators of risks associated with cranes not being appropriately managed. As such it is clearly an issue that industry needs to acknowledge and address.
Defining the crane safety problem

Increased instances of dangerous occurrences involving pedestal cranes suggests that crane safety is not being appropriately managed across the offshore oil and gas industry. As a result, there may be an elevated risk of an incident involving the collapse of an offshore crane and/or a load being dropped, resulting in personnel injury or fatality, a major accident event or a major environmental event.

Safe operation of reduced capacity cranes

Document No: A750660
Date: 24/05/2021

What has happened
NOPSEMA has identified three recent incidents where offshore cranes were operated in a reduced lifting capacity.

SAFETY BULLETIN
Discussion paper

Trends categorised within three themes:

• Inspection and management of corrective maintenance

• Competency of personnel

• Failure to apply lessons learned
Crane inspection and operating standards represent the minimum requirements. NOPSEMA expects duty holders to apply these standards and, where appropriate, supplement them with their own procedures.

Inspections and testing, completed by organisations accredited by bodies such as NATA, with endorsed certificates provides risk mitigation and demonstrates that the third-party inspection contractor has processes in place that are periodically audited and provides risk mitigation.

Corrosion-related findings in crane inspection reports should be written so that duty holders are able to gain a clear understanding of the extent and depth of corrosion and how this relates to risk and fitness for service. Furthermore, the location description of the corrosion should identify the criticality of the location to the continued safe operation of the crane.

Duty holders should assess the corrosion using risk-based techniques and, when necessary, repair the anomalies in accordance with agreed standards. Unassessed corrosion findings on cranes cannot be accepted.

Cranes are Safety Critical Equipment, and all reports of deficiencies and anomalies must be assessed by competent personnel, in a timely fashion and actioned appropriately.

Duty holder must assess the wear of the cranes and their critical components to ensure the risks are reduced to ALARP.

Crane OEMs hold all the design information for their cranes and are best placed to determine fitness for service and/or repair methodologies.

To ensure risk mitigation, duty holders and their third-party inspection and maintenance contractors must ensure that clear channels of communication are formally established and maintained.

WHAT ELSE CAN BE DONE?
Panel discussion

Panel members:

David Brough – Sparrows
Kevin McLean – INPEX
Mark Emmerson – NOPSEMA
Review of possible crane safety measures - Assurance
1. **Crane inspection and operating standards**: Crane inspection and operating standards represent the minimum requirements. NOPSEMA expects duty holders to apply these standards and, where appropriate, supplement them with their own procedures. Inspections and testing, completed by -organisations accredited by bodies such as NATA, with endorsed certificates provides risk mitigation and demonstrates that the third-party inspection contractor has processes in place that are periodically audited and provides risk mitigation.

2. **Crane inspection reports – Corrosion**: Corrosion-related findings in crane inspection reports should be written so that duty holders are able to gain a clear understanding of the extent and depth of corrosion and how this relates to risk and fitness for service. Furthermore, the location description of the corrosion should identify the criticality of the location to the continued safe operation of the crane. Duty holders should assess the corrosion using risk-based techniques and, when necessary, repair the anomalies in accordance with agreed standards. Unassessed corrosion findings on cranes cannot be accepted.

3. **Inspection - Corrective works (a)**: Cranes are Safety Critical Equipment, and all reports of deficiencies and anomalies must be assessed by competent personnel, in a timely fashion and actioned appropriately.

4. **Inspection - Corrective works (b)**: Duty holders must assess the wear of the cranes and their critical components to ensure the risks are reduced to ALARP.

5. **Crane Original Equipment Manufacturers**: Crane OEMs hold all the design information for their cranes and are best placed to determine fitness for service and/or repair methodologies. To ensure risk mitigation, duty holders and their third-party inspection and maintenance contractors must ensure that clear channels of communication are formally established and maintained.
Competency – the wider issue

Expectations from duty holders

- Crane inspection and maintenance competency requirements must be clearly described in duty holders’ processes. Inspections & testing, completed by organisations accredited by bodies such as NATA, with endorsed certificates provides risk mitigation and demonstrates to NOPSEMA the competence of those undertaking the activity.

- Duty holders must ensure that those personnel with management responsibilities for the safe operation of cranes on their facility have the required competency and authority to assess the crane fitness for service and/or ensuring the risks to personnel at the facility are reduced to ALARP.

- Duty holders must ensure that investigations are undertaken diligently and without prejudice. The learnings from investigations must be followed-up and actioned with authority. Audits of crane operations and maintenance is a fundamental risk mitigation function that must be routinely completed, and outcomes actioned.

- The competency of wire rope inspectors must be improved as wire rope deterioration is a single point of failure of cranes.

WHAT ELSE CAN BE DONE?
Revision to the crane operator competency guidance

Purpose of guidance and the revision

Amendments made on the basis of

- Queries from individuals/public
- Trends observed in safety case assessments, inspections and investigations
- Reflect changes in standards available
Revision to the crane operator competency guidance

Setting standard

Duty holder SMS requirements should detail the:

• experience and training prerequisites
• training needs at the facility
• competency assessment processes including verification of competency on a specific crane. This includes assessment of competence to conduct pre-use examinations of the crane
• re-training and competency re-assessment requirements
• retention and maintenance of training & assessment records
• ongoing monitoring and regular review and improvement of the offshore crane operator competency system
• the competency of assessors responsible for the training and assessing of offshore crane operator’s skills.
Panel discussion

Panel members:

David Brough – Sparrows

Kevin McLean – INPEX

Mark Emmerson – NOPSEMA
Review of possible crane safety measures – Competency
Creating a better future - Competency

Crane inspection and maintenance competency requirements must be clearly described in duty holders’ processes.

Inspections & testing, completed by organisations accredited by bodies such as NATA, with endorsed certificates provides risk mitigation and demonstrates to NOPSEMA the competence of those undertaking the activity.

Duty holders must ensure that investigations are undertaken diligently and without prejudice. The learnings from investigations must be followed-up and actioned with authority.

Audits of crane operations and maintenance is a fundamental risk mitigation function that must be routinely completed, and outcomes actioned.

Duty holders must ensure that those personnel with management responsibilities for the safe operation of cranes on their facility have the required competency and authority to assess the crane fitness for service and/or ensuring the risks to personnel at the facility are reduced to ALARP.

The competency of wire rope inspectors must be improved as wire rope deterioration is a single point of failure of cranes.
6. **Competency** - Crane inspection and maintenance competency requirements must be clearly described in duty holders’ processes. Inspections & testing, completed by organisations accredited by bodies such as NATA, with endorsed certificates provides risk mitigation and demonstrates to NOPSEMA the competence of those undertaking the activity.

7. **Duty holder Lifting management responsibility** - Duty holders must ensure that those personnel with management responsibilities for the safe operation of cranes on their facility have the required competency and authority to assess the crane fitness for service and/or ensuring the risks to personnel at the facility are reduced to ALARP.

8. **Lessons Learnt** - Duty holders must ensure that investigations are undertaken diligently and without prejudice. The learnings from investigations must be followed-up and actioned with authority. Audits of crane operations and maintenance is a fundamental risk mitigation function that must be routinely completed, and outcomes actioned.

9. **Wire Rope Inspector** - The competency of wire rope inspectors must be improved as wire rope deterioration is a single point of failure of cranes.
NEXT STEPS
Forward actions

Near-term action
- NOPSEMA shall provide a summary of the minutes to all participants (based on a review of the workshop recording)

Long-term action
- Together with the participation of all stakeholders, through industry representative groups APPEA and SAFER TOGETHER, an Information / Guidance document shall be issued