

Dear Secretariat

Please find attached a submission from NOPSEMA to the inquiry into WHS in the offshore petroleum industry, in response to a request from the Committee made at the hearing in Melbourne on 11 July for correspondence from the NOPSEMA Advisory Board to the NOPSEMA CEO.

The specific correspondence is attached, there is no further written correspondence between the Board and the CEO regarding the matters raised in the letter, as updates were provided verbally by the CEO to the Board at scheduled Board meetings.

Regards

Nicholas



Nicholas Page | Communications and Stakeholder Relations Manager
Legislative Change, Communications & Stakeholder Relations

National Offshore Petroleum Safety and Environmental Management Authority



GPO Box 2568
PERTH WA 6000
board@nopsema.gov.au

Our Ref: A535914

Mr Stuart Smith
Chief Executive Officer
NOPSEMA
Level 8, 56 Mounts Bay Road
PERTH WA 6000

Dear Stuart

I refer to your Referral of 10 February 2016 to the NOPSEMA Board seeking advice on how NOPSEMA may best improve its regulatory intelligence with respect to identifying issues and trends that may be pre-cursors to major accident events (MAEs). Such intelligence is used to assist NOPSEMA focus its compliance monitoring activities and to disseminate information about industry trends and performance to multiple stakeholders.

With this in mind, advice was sought from the NOPSEMA advisory board on:

- a) The basis on which NOPSEMA should select or develop the specified MAE leading indicator framework, noting relevant matters addressed in the background paper provided; and
- b) Any other issues the Advisory Board may consider relevant.

In summary, the board understands that the current accidents and dangerous occurrences (ADO) reporting framework is broadly in line with other similar regulatory regimes and likely subject to the same limitations, many of which are inherent in a system that relies on mandatory reporting to the regulator. We believe that more progress in 'raising the bar' is likely to be made if the regulatory approach to performance standards and performance monitoring within the core requirements of the regulations are revisited and strengthened, both in terms of regulatory practice and perhaps also regulation itself. Our thoughts on this are below.

Mandatory reporting requirements

As detailed in the original referral, offshore safety regulation in Australia currently requires reporting of ADOs in accordance with a ten-point definition. The definition refers to a range of adverse consequences that have occurred (or might have occurred) such as a well kick, a hydrocarbon release etc. The ten categories of reportable incidents are not linked directly to the failure of risk controls to meet performance standards, with the exception of the requirements to report 'damage to safety-critical equipment'. This sits rather oddly since it does not require reporting of failures of safety critical equipment for reasons other than 'damage' and also the legislation includes no definition of what constitutes safety critical equipment nor any other reference to this term.

We have considered whether it would be in the interests of NOPSEMA's regulatory intelligence on process safety to revamp this ten-point definition to clarify definitions and to include more leading indicators of MAE safety performance.

On balance, we think this is not a high legislative priority for the following reasons:

- Building more leading measures into this list, by the very nature of goal-setting regulation is going to lead to definitions that are open to interpretation.
- It is likely that those organisations most in need of performance improvement will adopt the most narrow interpretations and so report least and make themselves least subject to scrutiny by this legislative mechanism.
- It will therefore be difficult to infer any overall trends or conclusions from such data.
- The current definition of a dangerous occurrence is similar in concept to the definition of a dangerous incident in the model Workplace Health and Safety Act (see section 37) which also links to mandatory reporting requirements. It can therefore be argued that the current system is harmonised with the model WHA arrangements.

On the other hand, we think that the current requirements could be improved by more information on how some ADO categories are defined which may influence what is reported. We note that details of what is required to be in a report of an ADO are contained in NOPSEMA's Determination issued under Regulation 2.42 (2) (c) but this document contains no additional guidance as to how the ten categories of ADOs should be interpreted. This regulation specifies that reports of ADOs 'must contain material details concerning the accident or dangerous occurrence of the types determined by NOPSEMA'. This would appear to provide scope for NOPSEMA to include material on their definition of the ten ADO sub-categories in the context of these reporting requirements.

We are particularly interested in agreeing a common definition of the category 'damage to safety critical equipment' as this is the only leading indicator in the ADO definition. Without a definition of either 'damage' or 'safety critical' this is significantly open to interpretation. We suggest a possible definition along the lines of 'harm for any reason that impairs functioning of a risk control in accordance with defined performance standards'.

Recommendation: Consult with industry over definitions of ADOs to be reported. Once definitions are finalised, publish them either by updating the published Determination, or if that is not legally possible then in the form of a NOPSEMA Guidance Note or similar.

More broadly, we believe that a more fruitful approach to raising the bar of process safety would be to encourage operators to do more work in-house on management and monitoring of risk controls and for NOPSEMA to monitor that activity as part of normal regulatory processes. As detailed below, NOPSEMA's activities and guidance material could be updated to draw on recent significant work that has been done in this area in other industries and jurisdictions.

Development and Auditing of Performance Standards

It is now broadly accepted that an important part of managing risk from major accidents (or MAEs as they are known in the Offshore Petroleum and Greenhouse Gas Storage Act (OPGGSA) and regulations) is monitoring of safety critical elements against defined performance indicators so that appropriate decisions can be taken about actions necessary to improve, update, repair or otherwise modify risk controls. This requirement is included in the current OPGGSA requirements, but there appears to be a need to strengthen NOPSEMA's guidance material in this area and possibly also inspection practices. Inspection data in this area could provide the basis for the kind of regulatory intelligence that NOPSEMA is seeking on process safety performance of the industry overall.

As part of legislated requirements to ensure that risk remains as low as reasonably practical (ALARP), operators are already required to monitor the performance of risk controls against defined performance standards. NOPSEMA's Guidance Note on Control Measures and Performance Standards (N04300-GN0271) sets out advice in this area but it is strongly focused on the initial selection of controls, rather than details of monitoring individual controls during facility operation. Since this guidance note was last revised in December 2012, there has been a lot of activity in industry on defining key performance indicators including published guidance material such as:

- IChemE Safety Centre Lead Process Safety Metrics 2015
- IOGP Report 556 Process Safety - Leading key performance indicators, supplement to Report 456
- Stand Together for Safety Process Safety Who's Responsible - A Good Practice Guide 2016

The NOPSEMA guidance note on Control Measures could benefit from an update in this area.

Recommendation: Update Guidance Note on Control Measures and Performance Standards (N04300-GN0271) to include more material on monitoring risk controls during operation. Review work done in other jurisdiction on this issue (e.g. Worksafe Victoria's GN on Control Measures). Refer operators to the recently published industry guidance material in this area (e.g. IChemE, IOGP and Stand Together for Safety as noted above).

Of course this will only 'raise the bar' if industry practices are changed as a result. This is likely to be driven at least partly by an increased inspection focus in this area. We note that NOPSEMA has a published inspection policy (N-02000-PL1523) and OHS planned inspection policy (N-02100-PL0025) in the suite of published guidance material but they are both largely silent on this issue. We have not sighted any inspection reports but it seems likely given the high level nature of the guidance material provided on the subject of performance standards in operation that more could be done in this area.

Another important factor here is whether detailed specification of key performance indicators (or performance standards) is required for all controls or only the most important. In practice, we want operators to focus more on the most important controls. We note that the offshore safety legislation currently does not refer to safety critical controls (or elements, or equipment¹) but we believe that this does not need to be a limiting factor. A common practice for onshore Major Hazard Facilities safety cases is to identify safety critical controls or safety critical elements for detailed study and monitoring as a subset of all MAE risk controls. This is not a requirement of the onshore safety case legislation but nevertheless has grown up as a common practice as the Victoria MHF Guidance Material explains:

Some MHF put effort into classifying some of their control measures as critical and then subject them to more scrutiny appropriate to the level of protection they need to provide. Neither the MHF regulations or WorkSafe require this step in the adequacy assessment process. However, it may be useful for prioritising effort and resources for new operators, new MHFs or where there are a large number of control measures across the facility. Critical control measures may represent between 10 to 25% of control measures identified for a large facility. The following specific factors are a guide in determining whether a control measure is critical:

- *a control measure is relied upon to reduce or mitigate incidents having very severe potential consequences*

¹ Except in the definition of ten ADOs as described on page 1.

- *a single control measure can reduce or prevent a major incident hazard and therefore prevent a major incident.*

The following may also be taken into account:

- *other control measures that provide 'back-up', are known to be weak (e.g. of poor reliability or effectiveness)*
- *a control measure is relied on to control a number of different major hazards*
- *a control measure is relied on to prevent the most likely hazards that cause a major incident.*

(Source: Guidance Note Control Measures for a Major Hazard Facility, Worksafe Victoria May 2011, page 16).

It seems reasonable that offshore operators may choose to follow the same practice as it can be seen pragmatically to be a system that encourages efforts to monitor what matters, rather than one that is bogged down in compliance red tape.

An inspection focus that includes specifically a determination on whether risk controls meet company defined KPIs is likely to provide better regulatory intelligence than any modifications to the system for reporting dangerous occurrences.

Recommendation: Ensure that inspection plans / protocols give weight to issues linked to performance standards for controls in operations. Relevant questions include: Are KPIs set? Is performance monitored against them? How do KPIs inform decision making?

Such data could also be used for trend analysis for particular facilities or operators over time and so inform industry feedback at all levels (including CEO level liaison) and promote sharing of industry best practices. Other trend information could also inform NOPSEMA's selection of annual inspection themes and other education / promotion activities.

In addition to simply looking at numerical trends (which are important) it is likely that inspection data taken as a set would give indications of the degree of 'mindfulness' on process safety issues within specific organisations. Consideration of company performance across a range of management system areas against a tool such as the Safety Culture Maturity Scale could give insights into where a company sits on that scale:

- Pathological – "Who cares as long as we're not caught"
- Reactive – "Safety is important. We do a lot every time we have an accident"
- Calculative – "We have systems in place to manage all hazards"
- Proactive – "Safety leadership and values drive continuous improvement"
- Generative- "Safety is how we do business around here"

Again, the results of such analysis could be used to inform NOPSEMA's inspection planning and industry feedback.

It is possible that the Australian Petroleum Production and Exploration Association (APPEA) could also play a role here in promoting sharing of lessons across industry via their various activities including their HSE Committee, CEOs Forum or Step Change for Safety program.

Recommendation: Ensure that inspection data on KPI systems and KPI performance is analysed over time and across facilities and operators to inform NOPSEMA's other enforcement and promotion activities. Consider using a culture tool such as the Safety Culture Maturity Scale to inform conclusions in addition to numerical trend analysis.

Inspector Competence

We note that this inspection focus assumes a significant degree of competency in process safety matters on the part of inspectors. It seems likely that the organisation has this competency, but we have no firm data on this. We note also that there may be some overlap between process safety and environmental management KPIs when it comes to issues linked to spill prevention (for example) and so NOPSEMA should be sure to rationalise which area of the organisation is responsible for what aspect. We note competency has been a significant topic for industry in recent years, and this led to the IChemE Safety Centre releasing the following guidance:

- Process Safety Competency - a Model 2015

This defined process safety competency across a range of roles in an organisation.

While this guidance was developed by industry for industry, some onshore regulators have applied the document to guide their competency development programs.

Recommendation: NOPSEMA should understand the competency levels in process safety throughout their inspectorate, and address gaps as necessary. It is acknowledged that there has been work done by NOPSEMA to define current inspector competencies as well as development of a policy and procedure on demonstrating competencies. NOPSEMA should ensure these documents adequately cover the range of process safety related competencies as defined in suitable guidance, such as the IChemE Safety Centre Process Safety Competency - a Model 2015 document as well as establish appropriate refresher processes.

Yours sincerely

Keith Spence
Chairperson

18 January 2017