

Notifiable incident

Incident ID [5066](#)

Duty holder: INPEX Operations Australia Pty Ltd
Facility/Activity: Ichthys Venturer
Facility type: Floating production storage and offloading facility

Incident details	
Division	Occupational Health and Safety
Notification type	Incident
Incident date	21/09/2017 09:00 PM (WST)
Notification date	22/09/2017 07:29 PM (WST)
NOPSEMA response date	22/09/2017 08:49 PM (WST)
Received by	[REDACTED]
Nearest state	WA
Initial category type <i>(based on notification)</i>	Dangerous Occurrence
Initial category <i>(based on notification)</i>	Damage to safety-critical equipment
3 Day report received	25/09/2017
Final report received	20/10/2017
All required data received	23/10/2017
Final category type <i>(based on final report)</i>	Dangerous Occurrence
Final category <i>(based on final report)</i>	Damage to safety-critical equipment
Brief description	OHS - DSCE Pilot cylinders for deluge
Location	Process deck
Subtype/s	Other
Summary <i>(at notification)</i>	The main power generator B discharged nitrogen pilot cylinders for the water mist system, reducing the available capacity of the nitrogen pilot cylinders on duty and standby to 75% on each bank. This doesn't meet the active fire protection performance standard for the FPSO, which has a minimum requirement of one of two 100% on duty nitrogen cylinder banks for each protected area to be available at all times. A deviation has been put in place. An active bank will still deluge but may not meet the required duration. Main power generator A is being started to replace generator B, after which they will proceed to replace the nitrogen cylinders to meet the performance standard.

Details <i>(from final report)</i>	<p>On inspection of the water mist system on Main Power Generator B (MPG B) on the 21 September 2017, it was identified that 3 x N2 cylinders on the main and reserve bank had depressurised. On further investigation, it was found that this reduced the capacity of available nitrogen to 75% on the main and reserve cylinder banks. Therefore we did not meet (S060-AH-PST-10043) Active Fire Protection – FPSO Performance Standard for water mist. Specifically, the key requirement of a minimum of one of the two 100% duty / standby cylinder banks for each protected area shall be available to meet demand at all times. MPG B was running and online, therefore in the case of a confirmed fire, the active bank would still activate and deluge, however may not meet the required duration. Corrective maintenance was being performed on MPG A and C.</p> <p>A deviation was raised on 22 September so that in case of fire, should the active bank fail to extinguish the fire and detection remains activated, local manual release of the reserve bank will be initiated to extinguish the fire.</p> <p>MPG A was started and placed online and MPG B was shutdown to replace the N2 cylinders. It was found that the N2 cylinder bursting disc had operated. N2 cylinders replaced.</p> <p>The investigation revealed that over filling of nitrogen cylinders in Korea resulted in over pressurisation of the cylinders when exposed to warmer temperatures in Australia. This caused the pressure relief discs to burst and loss nitrogen cylinder capacity which in turn resulted in a loss of water mist capacity (25% less than required).</p>
Immediate cause/s	Bursting disc operated on N2 cylinders discharging cylinder.
Root cause/s	ED - EQUIPMENT / PARTS DEFECT - Procurement
Root cause description	Overfilling of nitrogen bottles

Duty inspector recommendation

Date	22/09/2017
Duty inspector	██████████
Recommendation	Do not conduct Major Investigation
Reasoning	Does not meet MI threshold based on information received
Supporting considerations	

Major investigation decision

Date	25/09/2017
Decision	Do not conduct Major Investigation
Reasoning	Does not meet MI threshold based on information received
Supporting considerations	

Non-major investigation review and recommendation

Date	03/10/2017
Inspector	██████████
Risk gap	Moderate
Type of standard	Established
Initial strategy	Investigate

Recommended follow up strategy

Recommended strategy	Investigate
Supporting considerations	This matter was followed up in PI 1506 - There is no evidence of lacking of due diligence in commissioning and inspection and maintenance. The inspection routine actually identified the problem i.e. loss of N2 pressure (the triggering system for water mist). The most likely causes of the N2 releases due to loosening of N2 system components or the bursting disc defects. INPEX has since addressed the N2 system issue for MPG B (back to 100% capacity on the 28/9/17) and applying same system check / refurbishment for 3 other main power generators. ██████████ 3/10/2017.

Non-major investigation decision	
Date	17/10/2017
RoN	[REDACTED]
RoN review result	Agree with recommendation
Strategy decision	Investigate
Supporting considerations	Agreed.

Associated inspection	
Inspection ID	1506