INTERNAL USE ONLY

Notifiable incident

Incident ID	6372
Duty holder:	Shell Australia Pty Ltd
Facility/Activity:	Prelude FLNG
Facility type:	Floating liquefied natural gas facility

Incident details	
Division	Occupational Health and Safety
Notification type	Incident
Incident date	04/02/2020 04:00 AM (WST)
Notification date	06/02/2020 10:59 AM (WST)
NOPSEMA response date	06/02/2020 11:07 AM (WST)
Received by	[redacted]
Nearest state	WA
Initial category type *(based on notification)*	Dangerous Occurrence
Initial category *(based on notification)*	Damage to safety-critical equipment
3 Day report received	08/02/2020
Final report received	31/03/2020
All required data received	31/03/2020
Final category type *(based on final report)*	Dangerous Occurrence
Final category *(based on final report)*	Damage to safety-critical equipment
Brief description	OHSE - DSCE - Instrument tubing on water mist skid parted
Location	
Subtype/s	Other
Summary *(at notification)*	Following several spurious activation of deluge system a piece of instrument air tubing that runs between the stabiliser pump and the water mist skid was found to have parted Tubing has been repaired and system is back in service Delay in reporting due to other priorities over the last couple iof days 3 day report to follow
Details *(from final report)*	Following several spurious activation of deluge system a piece of instrument air tubing that runs between the stabiliser pump and the water mist skid was found to have parted Tubing has been repaired and system is back in service Delay in reporting due to other priorities over the last couple iof days 3 day report to follow ** As Supplied by Duty Holder** Brief description of incident; Partial impairment of aft water mist skid. In the 24 hours preceding this event, Prelude had several power outages leading to loss of instrument air and HVAC. This condition subsequently caused multiple erroneous deluge activations. During one of the activations the aft water mist skid was activated. Post activation it was identified that an instrument tubing line on one of the stabilisation pumps had failed. This partially impaired the aft water mist package and precluded the package from being reset. Work or activity being undertaken at time of incident - Recovery from loss of main power.

	What are the internal investigation arrangements? Causal Reasoning Investigation. Action taken to make the work-site safe - Package isolated to facilitate immediate repairs. Repairs completed. Package returned to full service. Investigation to be completed. Details of any disturbance of the work site - Post activation it was identified that an instrument tubing line on one of the stabilization pumps had failed. This partially impaired aft water mist package and precluded package from being reset. Package has since being rectified and returned to full service. How effective was the emergency response? Effective response and full muster achieved. Details of job being undertaken - Recovery from loss of main power. In the 24 hours preceding this event, Prelude had several power outages leading to loss of instrument air and HVAC. This condition subsequently caused multiple erroneous deluge activations. During one of the activations the aft water mist skid was activated. Post activation it was identified that an instrument tubing line on one of the stabilisation pumps had failed. This partially impaired the aft water mist package and precluded the package from being reset. Will the equipment be shut down? Yes. If yes, for how long? The aft water mist skid was re-instated back into full service the following nightshift (04/02/2020). Will the facility be shut down? No. Topsides were already in a depressurised state from a previous planned process shut down. Immediate action taken/intended, if any, to prevent recurrence of incident: Action - Package isolated to facilitate immediate repairs. Repairs completed. Package returned to full service. Responsible - Production Coordinator - 04/02/2020 – Completed Action - Investigation to be completed. Responsible - Production Coordinator. Completion Date - Ongoing What were the immediate causes of the incident? Currently under investigation. ** As Supplied by Duty Holder** Has the investigation been completed? Yes Root cause 1 - Wear from vibration of tube within galvanised clamp which reduced wall thickness Full Report: 5 Causal Reasoning Question format used to conduct investigation by the Production Coordinator and Lead Production Technician. Evidence as gathered from CMMS history, site inspection and interview with technician who removed failed tubing section and repaired after the initial incident. It was found that the tube had separated when pressurised to full operating pressure upon activation of the watermist. This occurred as the tube had worn (wall loss) due to vibration within a galvanised clamp. It was also noted that the tubing used although acceptable for this run is not considered standard for other installations on the facility, and an opportunity for standardisation was identified. Actions to prevent recurrence of same or similar incident: Action - Identify all other areas where this piping class has been used to allow inspection, initiate inspection in CMMS. Responsible - Maintenance Manager. Completion Date - Completed 09/03/2020 Action - Progress MOC to make engineering changes to tubing to prevent re-occurrence, initiate execution in CMMS. Responsible - Maintenance Manager. Completion Date - 30/05/2020
Immediate cause/s	TBC
Root cause/s	
Root cause description	Root cause 1 - Wear from vibration of tube within galvanised clamp which reduced wall thickness

Duty inspector recommendation	
Date	06/02/2020
Duty inspector	[redacted]
Recommendation	Do not conduct Major Investigation
Reasoning	Does not meet MI threshold based on information received
Supporting considerations	

Major investigation decision	
Date	06/02/2020
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	06/02/2020
Inspector	[redacted]
Risk gap	Moderate
Type of standard	Established
Initial strategy	Investigate

Recommended follow up strategy	
Recommended strategy	Investigate
Supporting considerations	Understand that the tubing failure impaired the correct functioning of the water mist system. Instrument tubing has now been fixed and the water mist system is now fully functional. Investigate at the next inspection to ensure all appropriate periodic inspection/tests were completed.

Non-major investigation decision	
Date	06/02/2020
RoN	[redacted]
RoN review result	Agree with recommendation
Strategy decision	Investigate
Supporting considerations	

Associated inspection	
Inspection ID	2129