INTERNAL USE ONLY

Notifiable incident

Incident ID	6351
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	23/01/2020 08:20 PM (WST)
Notification date	23/01/2020 09:41 PM (WST)
NOPSEMA response date	23/01/2020 09:46 PM (WST)
Received by	[redacted]
Nearest state	WA
Initial category type *(based on notification)*	Dangerous Occurrence
Initial category *(based on notification)*	Unplanned event - implement emergency response plan
3 Day report received	26/01/2020
Final report received	26/01/2020
All required data received	30/01/2020
Final category type *(based on final report)*	Dangerous Occurrence
Final category *(based on final report)*	Unplanned event - implement emergency response plan
Brief description	OHS-UPE-MAC activation resulting in GPA
Location	Engine room
Subtype/s	Alarm, Muster
Summary *(at notification)*	Operator advised that a MAC located in the Plate and Frame HX room on level 7 of the aft machinery space activated which resulted in a GPA and muster. At the time, work was being undertaken in the area on the smoke detection system. It is suspected that a logic fault within the smoke detection system resulted in the MAC activation but this is still to be determined. An investigation is underway.
Details *(from final report)*	Operator advised that a MAC located in the Plate and Frame HX room on level 7 of the aft machinery space activated which resulted in a GPA and muster. At the time, work was being undertaken in the area on the smoke detection system. It is suspected that a logic fault within the smoke detection system resulted in the MAC activation but this is still to be determined. An investigation is underway. ** As Supplied by Duty Holder** What happened: • Indication of Manual Alarm Call point activation in PFHE room initiated the Facility General Alarm. • Work party was working in the area in close proximity to the MAC point carrying out routine testing on fixed smoke detection. • Full facility muster was completed in 12 mins. • MAC initiation was cleared and production technicians were deployed to the area and confirmed no

	abnormal situation • Facility returned to normal status. 7. Work or activity being undertaken at time of incident Routine maintenance – fixed smoke detection testing in PFHE room on 7th deck of Aft Machinery Space 8. What are the internal investigation arrangements? 5 Why Causal Reasoning Investigation 15. Action taken to make the work-site safe Was permission given by a NOPSEMA inspector to interfere with the site? All personnel mustered and accounted for in 12 mins 16. Was an emergency response initiated? Yes. How effective was the emergency response? Effective Response and full muster achieved. 21. Immediate action taken/intended, if any, to prevent recurrence of incident: Action - Technician involved with the maintenance task contacted Incident Commander and notified them that they were working in area and there was no abnormal situation at time of GA initiation. Responsible - Nightshift Inlec. Completed 23rd Jan Action - MAC signal cleared and area confirmed safe. Facility returned to normal status. Responsible - Nightshift Inlec. Completed 23rd Jan Action - Complete investigation to understand cause (initial indication is a logic fault resulting in the smoke detection signal initiating the MAC signal). Responsible - Nightshift Production Team Lead. Completed 23rd Jan 22. What were the immediate causes of the incident? The alarm and fault signals corresponding to Smoke detector 613NSD-9G42G, are passed to Smoke Detector logic 613NSD9G42G and also (incorrectly) to MCP logic 613NMCP9J39G. When test smoke was applied to the MOS'ed Smoke Detector, the incorrect configuration in the MCP logic initiated the General Alarm. 32. Has the investigation been completed? Yes Root cause analysis What were the root causes? Root cause 1 It was found that the alarm and fault signals corresponding to Smoke detector 613NSD-9G42G, are passed to Smoke Detector logic 613NSD9G42G, and also (incorrectly) to MCP logic 613NMCP9J39G. Root cause 2 When test smoke was applied to the Inhibited Smoke Detector, the MCP logic was incorrectly initiated, setting off the unexpected Panel and General Alarms. Full Report: Please see attached Causal reasoning investigation (PDF). 33. Actions to prevent recurrence of same or similar incident Action Responsible party Completion date Actual or intended 1. Correct the MCP logic as shown in the "MCP Logic" attachment. Notification 16594923 has already been created to do this. Responsible - Prelude Mac Lead. Completion Date - 27/1/2020 2. Check the DCS Landing Module references for ALL Addressable FGS detectors. Confirm that their Alarm and Fault parameters are not passed twice to the Delta-V logic (as occurred for this Smoke Detector). Responsible - [redacted]. Completion Date - Done 3. Schedule-in the testing of all Addressable F&G detectors not yet tested since arriving on station. Responsible - [redacted]. Completion Date - 6/2/2020 Are you attaching any documents? Yes – FIM 2556039 Causal Investigation. No. ID Revision Date Title/description 1 N/A Final 25 January 2020 FIM 2556039 Causal Investigation.
Immediate cause/s	TBC
Root cause/s	
Root cause description	Root cause 1 It was found that the alarm and fault signals corresponding to Smoke detector 613NSD-9G42G, are passed to Smoke Detector logic 613NSD9G42G, and also (incorrectly) to MCP logic 613NMCP9J39G. Root cause 2 When test smoke was applied to the Inhibited Smoke Detector, the MCP logic was incorrectly initiated, setting off the unexpected Panel and General Alarms.

Duty inspector recommendation	
Date	29/01/2020
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	30/01/2020
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	30/01/2020
Inspector	[redacted]
Risk gap	None
Type of standard	Established
Initial strategy	Inclusion in annual stats/data analysis

Recommended follow up strategy	
Recommended strategy	Inclusion in annual report stats / data analysis
Supporting considerations	No actual consequences or risk gap. Cause was due to faulty logic which activated the MAC point logic, setting off General Alarms. No follow up recommended at this stage.

Non-major investigation decision	
Date	30/01/2020
RoN	[redacted]
RoN review result	Agree with recommendation
Strategy decision	Inclusion in annual report stats / data analysis
Supporting considerations	

Associated inspection	
Inspection ID	