

Notifiable incident

Incident ID [5545](#)

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	26/08/2018 10:17 AM (WST)
Notification date	26/08/2018 02:30 PM (WST)
NOPSEMA response date	26/08/2018 03:43 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>	Unplanned event - implement emergency response plan
3 Day report received	30/08/2018
Final report received	30/08/2018
All required data received	30/08/2018
Final category type <i>(based on final report)</i>	Dangerous Occurrence
Final category <i>(based on final report)</i>	Unplanned event - implement emergency response plan
Brief description	OHS-UPE-Indication of smoke in forward machinery space
Location	Deck
Subtype/s	Alarm, Muster
Summary <i>(at notification)</i>	<p>Operator advised that smoke detectors activated in the forward machinery space. This coincided with the running of the forward emergency generator. The machine was stopped and all crew mustered.</p> <p>The ERT was deployed to investigate and no smoke identified in space.</p> <p>It is suspected that the exhaust smoke from the generator was sucked into the air intake for the space activating smoke detectors.</p>

Details <i>(from final report)</i>	<p>Operator advised that smoke detectors activated in the forward machinery space. This coincided with the running of the forward emergency generator. The machine was stopped and all crew mustered.</p> <p>The ERT was deployed to investigate and no smoke identified in space.</p> <p>It is suspected that the exhaust smoke from the generator was sucked into the air intake for the space activating smoke detectors.</p> <p>The Forward Emergency Generator (EMG, G-40220) was being started as part of its routine Preventative Maintenance checks.</p> <p>Upon starting the machine, exhaust from the EMG exhaust outlet circulated back into the EMG Mechanical air supply vent, which upon detection, initiated the General alarm. The machine was shut down manually at the local control panel and made safe.</p> <p>The Emergency Response team were activated, and full muster on Prelude FLNG and the Accommodation Support Vessel (ASV). It was confirmed on CCTV that the area was all clear. Two members of the fire team were deployed to the area and confirmed area safe and clear.</p> <p>It has been confirmed that F&G logic operated as per design.</p> <p>It is noted that this a repeat incident from 19 August 2017 with similar common causes to previous, with the exception of the engine block heater was functional/operational during this planned testing.</p>
Immediate cause/s	<p>Exhaust smoke from the generator was sucked into the air intake for the space activating smoke detectors. An investigation into the cause of the incident has identified that smoke from the EMG diesel engine exhaust, generated during the start-up of the diesel engine was sucked into the FWD EMG Mechanical Air Supply Vent. The smoke was detected by the smoke detectors inside the air supply vent ducting and activated the executive action, which resulted in the general alarm.</p>
Root cause/s	<p>HPD - MGMT SYS - Corrective action NI - CA NI</p>
Root cause description	<p>Repeat failure - Smoke generated during initial start up of the EMG. Wind speed and direction at time of incident resulted in smoke being blown directly from exhaust to Forward Emergency Generator Room Mechanical Air Supply Duct. Smoke and air sucked into the FWD EMG Mechanical Air Supply Vent. Smoke detected by smoke detectors fitted inside the Forward Emergency Generator Room HVAC Mechanical Supply Duct (2003 as per design). Fire and Gas system initiated visual alarm in FWD Machinery Space and Facility wide audible and visual alarms (PAGA a and PAGA B), as per design.</p>

Duty inspector recommendation

Date	<p>27/08/2018</p>
Duty inspector	<p>[REDACTED]</p>
Recommendation	<p>Do not conduct Major Investigation</p>
Reasoning	<p>Does not meet MI threshold based on information received</p>
Supporting considerations	

Major investigation decision

Date	<p>27/08/2018</p>
Decision	<p>Do not conduct Major Investigation</p>
Reasoning	<p>Does not meet MI threshold based on information received</p>
Supporting considerations	

Non-major investigation review and recommendation

Date	<p>27/08/2018</p>
Inspector	<p>[REDACTED]</p>
Risk gap	<p>Moderate</p>
Type of standard	<p>Established</p>
Initial strategy	<p>Investigate</p>

Recommended follow up strategy	
Recommended strategy	Investigate
Supporting considerations	<p>This has occurred previously (Notification #5018 - ""They were carrying out a routine 2-weekly PM test run of the Emergency Generator. Still air conditions allowed the exhaust fumes to get sucked into the ventilation system for the Emergency Generator room. 3 smoke detectors were activated in the Emergency Generator Room. This initiated a GPA and a full muster. (POB=318 persons). All persons accounted for. Emergency response team investigated, declared the area clear and carried out a local shut down of the emergency generator."").</p> <p>#5018 was investigated during PI 1603.A 30 day report has since been submitted to NOPSEMA which identifies the root cause being due to the diesel engine jacket cooling heater not functioning resulting in excessive black smoke from the cold engine exhaust being sucked into the EMG room mechanical air supply duct and vent. The jacket heater fault had been identified as a tripped power supply breaker which had been repaired. The EMG pre-start check procedure had been revised and other rooms at the facility containing diesel engines were being reviewed.</p>

Non-major investigation decision	
Date	27/08/2018
RoN	
RoN review result	Agree with recommendation
Strategy decision	Investigate
Supporting considerations	

Associated inspection	
Inspection ID	1829