

Notifiable incident

Incident ID [6099](#)

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	18/08/2019 07:15 AM (WST)
Notification date	18/08/2019 01:36 PM (WST)
NOPSEMA response date	18/08/2019 01:45 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	19/08/2019
Final report received	19/08/2019
All required data received	19/08/2019
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 - Emergency diesel generator failed to start on command.
Location	
Subtype/s	Facility integrity, Valve failure
Summary <i>(at notification)</i>	The OIM reported that while conducted the weekly routine start up of the Emergency Diesel Generator, it failed to start on command. We are currently investigating. It appears the diesel supply valve failed and the shut in the closed position.

Details
(from final report)

The OIM reported that while conducted the weekly routine start up of the Emergency Diesel Generator, it failed to start on command. We are currently investigating. It appears the diesel supply valve failed and the shut in the closed position.

**** As Supplied by Duty Holder****

On the 18th August 2019, approximately 0800hrs, an attempt was made to start the EMG (Emergency Generator) as part of the weekly routine maintenance. The machine failed to start and after some initial troubleshooting it was identified that the remotely operated manual emergency shutoff valve was not allowing fuel to the machine. This had been tested on the previous Monday as part of the LR annual survey. The EMG had not been started at that time or since. The implication of this outage is that we would be unable to re-establish power had we had a loss of 33kV power (i.e. all boilers trip, loss of STGs).

Work or activity being undertaken at time of incident - Weekly Routine Maintenance

What are the internal investigation arrangements? Causal Reasoning 5 Why Question Investigation

Action taken to make the work-site safe - As an immediate mitigation, ceased all work that may have the possibility of interrupting power supply (i.e. downloads, F&G testing, deluge testing). The RPE onboard recommended a reconfiguration of the electrical system that includes running one (of 3) of the EDGs (Essential Diesel Generators) to mitigate the consequence of loss of 33kV power. This puts us in a safe position to enable restart of other essential power if needed.

Equipment damaged - Remotely operated manual emergency shutoff valve to the AFT Emergency Diesel Generator

Extent of damage - The valve top cover was removed which revealed plug had unthreaded and was loose in the valve. The locking tab was not folded over allowing plug to unthread.

Will the equipment be shut down? No - Repairs have been completed and the AFT Emergency Diesel Generator has successfully returned to service (within 24hours of identifying the fault)

Immediate action taken/intended, if any, to prevent recurrence of incident:

Action - 24/7 monitoring the power system until the fault with the EMG is rectified. Responsible - Production Coordinator . Completion Date - Completed

Action - Investigate and Repair the cause for the Remotely operated manual emergency shutoff valve failing to supply fuel to the AFT Emergency Diesel Generator. Responsible - Maintenance Coordinator. Completion Date - Completed

Action - Investigate other Remotely operated manual emergency shutoff valves for other essential equipment. Responsible - Maintenance Coordinator. Completion Date - 25/9/2019

What were the immediate causes of the incident? The valve for the AFT Emergency Diesel Generator was removed. The valve top cover was removed which revealed plug had unthreaded and was loose in the valve. Initial assembly error from construction. The locking tab was not folded over allowing plug to unthread. There were no blockages in the other pipework. Threaded plug back on to stem and folded over locking tabs and reinstated pipework and flange. The AFT Emergency Diesel Generator was started up and run test was successful

Root cause 1 Unthreaded plug loose in valve

Root cause 2 Initial assembly error from construction

Full Report - The valve for the AFT Emergency Diesel Generator was removed. The valve top cover was removed which revealed plug had unthreaded and was loose in the valve. Initial assembly error from construction. The locking tab was not folded over allowing plug to unthread. There were no blockages in the other pipework. Threaded plug back on to stem and folded over locking tabs and reinstated pipework and flange. The AFT Emergency Diesel Generator was started up and run test was successful.

Actions to prevent recurrence of same or similar incident - Investigate other remotely operated manual emergency shutoff valves for other essential equipment. Responsible Party - Maintenance Coordinator. Completion Date - 25/9/2019

Immediate cause/s

valve failure potential.

Root cause/s	
Root cause description	Root cause 1 Unthreaded plug loose in valve Root cause 2 Initial assembly error from construction

Duty inspector recommendation

Date	19/08/2019
Duty inspector	
Recommendation	Do not conduct Major Investigation
Reasoning	Does not meet MI threshold based on information received
Supporting considerations	

Major investigation decision

Date	21/08/2019
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	22/08/2019
Inspector	
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	The failure to start was identified during routine testing of the Emergency Diesel Generator (EDG). The EDG was repaired and tested (successfully) within 24 hours. Routine testing is conducted to identify faults and was effective in identifying a latent fault in this instance. No follow up required.

Non-major investigation decision

Date	22/08/2019
RoN	
RoN review result	Agree with recommendation
Strategy decision	Inclusion in annual report stats / data analysis
Supporting considerations	

Associated inspection

Inspection ID	
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