Notifiable incident

Incident ID	**5722**
Duty holder:	INPEX Operations Australia Pty Ltd
Facility/Activity:	CPF Ichthys Explorer
Facility type:	Other platform with accommodation facilities when drilling/workover facilities are not in commission

Incident details	
Division	Occupational Health and Safety
Notification type	Incident
Incident date	06/12/2018 01:56 PM (WST)
Notification date	07/12/2018 06:54 PM (WST)
NOPSEMA response date	07/12/2018 06:59 PM (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	09/12/2018
Final report received	05/01/2019
All required data received	05/01/2019
Final category type *(based on final report)*	Dangerous Occurrence
Final category *(based on final report)*	Damage to safety-critical equipment
Brief description	OHS - DSCE - ESDVs failed to close after shutdown
Location	Process deck
Subtype/s	Facility integrity, Valve failure
Summary *(at notification)*	The OIM reported this occurrence as a follow up from recent notification (ID 5719) where the facility experienced an ESD. - Following the ESD & Blowdown event it was noted that three (3) Emergency Shut Down Valves (ESDVs) failed to close within their required performance standard time (e.g. between 1 minute and 1-1/2 minute depending on the valve) - All ESDVs were reported as located in 'Train3' - Liquid Export. - ESDVs tag numbers are: B163ESDV414, B163ESDV415 & B163SDV412; - the valves have been already worked on and are now back operating within performance standard requirements. - detailed information will follow on 3 day report.

Details *(from final report)*	The OIM reported this occurrence as a follow up from recent notification (ID 5719) where the facility experienced an ESD. - Following the ESD & Blowdown event it was noted that three (3) Emergency Shut Down Valves (ESDVs) failed to close within their required performance standard time (e.g. between 1 minute and 1-1/2 minute depending on the valve) - All ESDVs were reported as located in 'Train3' - Liquid Export. - ESDVs tag numbers are: B163ESDV414, B163ESDV415 & B163SDV412; - the valves have been already worked on and are now back operating within performance standard requirements. - detailed information will follow on 3 day report. During the checks and investigation follow up to the facility Non Hazardous Emergency Shutdown (ESD1) event on 06/12/2018, a performance standard non-compliance was identified. The following Emergency Shutdown Valves (ESDV) were recorded as having closure times in excess of the closure time nominated in the 'Shutdown Valves Performance Standard' • B-163-ESDV-412 Blanket gas from HP separator • B-163-ESDV-414 Minimum flow from Liquid Export Pump • B-163-ESDV-415 Liquid Export Vessel outlet The ESD 1 Non-Hazardous Area shutdown and blowdown was initiated following confirmed gas on air intake gas detectors on Main Power Generation (MPG) C. MPG C was offline at time of event and confirmed as false alarm. During the checks and investigation follow up to the facility non-hazardous Emergency Shutdown (ESD1) event on 6 December 2018, a performance standard non-compliance was identified. Three Shutdown Valves (SDV) / Emergency Shutdown Valves (ESDV) were recorded as having closure times ir excess of the closure time nominated in the Performance Standard for Shutdown Valves I/CPF/DC-02.02. The ESDVs did make the close limits during the blowdown, but outside of the Performance Standard. Further testing was completed on the three ESDVs / SDVs, B163ESDV414, B163ESDV415 and B163SDV412 under work orders 2100014695/6/7. Valves were field tested with air fail and SIS trip function to ensure valve functionality. All three closure times were within the required duration. Preliminary investigation has indicated the root cause of the slow closures is due to Metso Positioner Shuttle or Actuator Volume Booster under-performance. Further investigation is currently ongoing and being led by the INPEX FPSO who have had the same issue with their Metso Positioners. This investigation includes the procurement, dismantling and analysis of internal components to assess the reliability of the Metso Positioners. Whilst waiting for the conclusion and findings of the Metso Positioner reliability assessment, INPEX CPF will continue to monitor SDV / ESDV performance with the following actions: - Monitor SDV / ESDV closing time reports post PSD / ESD - Stroke test any non-compliant valves - Investigate any non-compliant valves and whether related to Metso Positioner Shuttle, Actuator Volume Booster or other root cause.
Immediate cause/s	ESDVs failed to meet performance standard on shutdown. The ESDVs did make close limits during the blowdown, but outside of the Performance Standard.
Root cause/s	ED - DESIGN - Design specs - problem not anticipated
Root cause description	Possibly unreliable Metso Positioner Shuttle or Actuator Volume Booster did not allow the instrument air to exhaust / inject correctly. Metso Positioner Shuttle or Actuator Volume Booster possibly not operating reliably.

Duty inspector recommendation	
Date	10/12/2018
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	10/12/2018
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	11/12/2018
Inspector	[redacted]
Risk gap	Moderate
Type of standard	Established
Initial strategy	Investigate

Recommended follow up strategy	
Recommended strategy	Investigate
Supporting considerations	Reviewed 3 days report . During the checks and investigation follow up to the facility Non Hazardous Emergency Shutdown (ESD1) event (notification 5719) on 06/12/2018, a performance standard non-compliance was identified related to SDVs. The following Emergency Shutdown Valves (ESDV) were recorded as having closure times in excess of the closure time nominated in the 'Shutdown Valves Performance Standard' • B-163-ESDV-412 Blanket gas from HP separator • B-163-ESDV-414 Minimum flow from Liquid Export Pump • B-163-ESDV-415 Liquid Export Vessel outlet The true implication of SDVs not meeting PS (re closure time) is difficult to evaluate. Stated ESDVs were all functional. ESDVs closure time being slower than required has compromised the "SIF" (Safety Integrity Function). These non-conformance has not been reported in the past. I am recommending that the notification to be followed up in the Jan 2019 planned inspection. [redacted] [redacted]

Non-major investigation decision	
Date	12/12/2018
RoN	[redacted]
RoN review result	Agree with recommendation
Strategy decision	Investigate
Supporting considerations	

Associated inspection	
Inspection ID	1777