

UNITED STATES DEPARTMENT OF THE INTERIOR
 BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
 GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

For Public Release

1. OCCURRED

DATE: **03-APR-2021** TIME: **1310** HOURS

2. OPERATOR: **Shell Offshore Inc.**

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR: **ChampionX**

REPRESENTATIVE:

TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR ON SITE AT TIME OF INCIDENT:

8. OPERATION:

4. LEASE: **G08241**

AREA: **GB** LATITUDE:

BLOCK: **426** LONGITUDE:

- PRODUCTION
- DRILLING
- WORKOVER
- COMPLETION
- HELICOPTER
- MOTOR VESSEL
- PIPELINE SEGMENT NO.
- OTHER

5. PLATFORM: **A-Auger TLP**

RIG NAME:

6. ACTIVITY:

- EXPLORATION (POE)
- DEVELOPMENT/PRODUCTION (DOCD/POD)

9. CAUSE:

7. TYPE:

INJURIES:

HISTORIC INJURY

REQUIRED EVACUATION

LTA (1-3 days)

LTA (>3 days)

RW/JT (1-3 days)

RW/JT (>3 days)

FATALITY

Other Injury

OPERATOR

CONTRACTOR

0

1

0

1

- EQUIPMENT FAILURE
- HUMAN ERROR
- EXTERNAL DAMAGE
- SLIP/TRIP/FALL
- WEATHER RELATED
- LEAK
- UPSET H2O TREATING
- OVERBOARD DRILLING FLUID
- OTHER _____

POLLUTION

FIRE

EXPLOSION

LWC HISTORIC BLOWOUT

UNDERGROUND

SURFACE

DEVERTER

SURFACE EQUIPMENT FAILURE OR PROCEDURES

10. WATER DEPTH: **2860** FT.

11. DISTANCE FROM SHORE: **136** MI.

12. WIND DIRECTION:
SPEED: M.P.H.

13. CURRENT DIRECTION:
SPEED: M.P.H.

14. SEA STATE: FT.

15. PICTURES TAKEN:

16. STATEMENT TAKEN:

COLLISION HISTORIC >\$25K <=\$25K

On 3 April 2021, at approximately 1310 hours, an injury occurred on Shell Offshore Inc. (Shell) OCS-G08241 Garden Banks (GB) 426-A.

Sequence of Events:

On 3 April 2021, a production operator was on the deck testing the boarding shut down valve (BSDV) for the Cardamom Field. There were three control room operators monitoring the pressures of the BSDV's during the testing. As the testing began, a contract chemical employee, the injured personnel (IP), began asking questions on the BSDV inspection process. The Production Operator reviewed the procedure with the IP. The valve alignments were made to begin the leakage test and the pipe pressure was reduced to 0 psig through the flare system. The Production Operator confirmed with the Control Room Operators that the pipe had 0 psig. A hose that was not secured was installed between BSDVs 2471A and 2471B that was utilized to drain residual fluid in the BSDV skid drain. The Production Operator opened the needle valve connected to the hose to drain any residual fluid and observed cycles of fluid and gas indicating the BSDV may have been leaking. The Production Operator walked to the other side of the BSDV to retrieve a grease gun to perform maintenance on the BSDV. While the IP was holding the hose with his right hand approximately 3.5 feet from the end, the hose became pressurized, releasing a high amount of pressure at the end. This occurred due to the equalizing valve BSDV 2471B being opened at the LCP-2470 Cardamom Boarding Valve Control Panel, causing the IP to lose control of the hose. Shell was unable to identify who opened the BSDV 2471B equalizing valve while completing the blowing down of the flowlines. The metal fitting on the end of the hose came in contact with the IP's left hand. The IP then released the hose and attempted to exit the BSDV skid area. While attempting to exit the area, the metal fitting on the end of the hose struck the IP in the back that resulted in welts near the right shoulder blade. The Production Operator proceeded to the panel and closed all valves on the Boarding Valve Panel except for the BSDV 2471C, to shut off the pressure to the hose. The IP was taken to the Platform Medic's office to be evaluated. The Platform Medic consulted with an Onshore Physician and the decision was made to fly the IP onshore for additional treatment. The IP was transported to a medical facility for additional medical treatment including X-rays that revealed a closed displaced fracture on the fifth metacarpal bone of the left hand.

BSEE Investigation:

On 3 April 2021, the Bureau of Safety & Environmental Enforcement (BSEE) Lafayette District (LD) Accident Investigator (AI) received a notification via phone call of an incident with injury occurring on Shell's GB 426-A "Auger Facility". The AI requested additional information pertaining to the incident such as Shell's Boarding Valve Testing Procedure and other relevant documents from Shell.

On 5 May 2021, the BSEE LD AI and the BSEE Production Supervisory Inspector performed a phone interview with the IP. Photographs of the incident location were taken on 3 April 2021, and emailed to the AI. Procedures were requested, and witness statements of relevant personnel were taken and emailed to the AI. BSEE LD Inspectors were delayed from visiting the location due to COVID restrictions and began quarantine procedures due to the GB 426 Facility's level 3. The on-site investigation was conducted by BSEE LD Inspectors during the scheduled annual inspection that was conducted on 21 July 2021.

The AI discovered that utilizing a hose to indicate zero pressure on the flowline was not part of Shell's Operating Procedure. The Operating Procedure states that blowing down to "zero pressure is not required. Blowdown to a point where at least 500 psi differential is across the boarding valve and monitor for pressure build-up". The IP had no experience with testing the BSDV's and did not realize that the hose could pressurize.

Conclusion:

BSEE found that the probable cause of the injury was due to pressure being introduced to the hose after the piping had been bled down to zero. Utilizing the hose to show zero pressure on the flowline was not part of the Shell's Operating Procedure. An additional probable cause includes allowing the IP to assist in the testing of the BSDV without prior experience in boarding valve testing operations.

18. LIST THE PROBABLE CAUSE(S) OF ACCIDENT:

- **Management Systems: Inadequate documentation or availability of hazard analyses, job procedures, or emergency procedures:** Utilizing the referenced hose (to achieve zero pressure) was not part of the approved operating procedure. The approved operating procedure states, "zero psi is not required. Blowdown to a point where at least 500 psi differential is across the boarding valve and monitor for pressure build-up".
- **Human Performance Error: Inexperience doing task related to incident - BSEE also found that the probable cause of the injury was allowing the inexperienced IP to assist in the testing of the BSDV regarding the referenced operation(s).**

19. LIST THE CONTRIBUTING CAUSE(S) OF ACCIDENT:

- **According to the Shell Auger OP - BV Check for the Cardamom Field, there is no mention of using a hose throughout the testing procedure. All piping mentioned throughout the bleed down and testing procedure is hard piping.**

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

None

NA

ESTIMATED AMOUNT (TOTAL):

\$

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

The BSEE Lafayette District office makes no recommendations to the Regional Office of Incident Investigations (OII).

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **YES**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

On April 3, 2021, Shell Offshore Inc failed to perform operations in a safe and workmanlike manner as follows: An injury occurred while a contract chemical employee, injured employee (IP) was assisting a Production Operator in testing a boarding shut down valve (BSDV). The BSDV alignments were made to begin the leakage test and the piping was bled to 0 psig through the flare system. A hose that was not secured, was installed between the 2471A and 2471B valves which is downstream of the BSDV. The hose was utilized to drain residual fluid in the BSDV skid drain. While the IP was holding the hose with his

right hand approximately 3.5 feet from the end, the hose suddenly started releasing a high amount of pressure. This occurred due to the equalizing valve opening, causing the IP to lose control of the hose. The metal fitting on the end of the hose came in contact with the IP's left hand. After releasing the hose, as the IP was attempting to exit the BSDV skid area, the metal fitting on the end of the hose struck the IP in the back that resulted in welts near the right shoulder blade. The Production Operator proceeded to the panel and closed the needle valve to shut off the pressure that was being released from the hose.

The IP was taken to the platform medic's office to be evaluated. The IP was flown to a medical facility for additional treatment including x-ray's that revealed a closed displaced fracture on the fifth metacarpal bone of the left hand.

For Public Release

25. DATE OF ONSITE INVESTIGATION: 05-MAY-2021
26. INVESTIGATION TEAM MEMBERS: J. Mouton / W. Guillotte /
27. OPERATOR REPORT ON FILE:
28. ACCIDENT CLASSIFICATION:
29. ACCIDENT INVESTIGATION PANEL FORMED: NO
OCS REPORT:
30. DISTRICT SUPERVISOR: Robert Ranney

APPROVED
DATE: 01-NOV-2021