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

# ACCIDENT INVESTIGATION REPORT

1. OCCURRED
   DATE: **13-FEB-2024** TIME: **2035** HOURS

2. OPERATOR: **Shell Offshore Inc.**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR:
   REPRESENTATIVE:
   TELEPHONE:

- [ ] STRUCTURAL DAMAGE
- [ ] CRANE
- [ ] OTHER LIFTING
- [ ] DAMAGED/DISABLED SAFETY SYS.
- [ ] INCIDENT >$25K
- [ ] H2S/15MIN./20PPM
- [ ] REQUIRED MUSTER
- [ ] SHUTDOWN FROM GAS RELEASE
- [x] OTHER **Flushing 6" hoses**

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

4. LEASE: **G09896**
   AREA: **MC** LATITUDE:
   BLOCK: **899** LONGITUDE:

5. PLATFORM:
   RIG NAME: **T.O. DEEPWATER PROTEUS**

6. ACTIVITY:
- [ ] EXPLORATION(POE)
- [x] DEVELOPMENT/PRODUCTION (DOCD/POD)

7. TYPE:
   INJURIES:
- [ ] HISTORIC INJURY

| | OPERATOR | CONTRACTOR |
|---|---|---|
| [x] REQUIRED EVACUATION | **0** | **2** |
| [ ] LTA (1-3 days) | | |
| [x] LTA (>3 days) | **0** | **1** |
| [ ] RW/JT (1-3 days) | | |
| [ ] RW/JT (>3 days) | | |
| [ ] FATALITY | | |
| [x] Other Injury | **0** | **1** |

**medical treatment**

- [ ] POLLUTION
- [ ] FIRE
- [ ] EXPLOSION

LWC
- [ ] HISTORIC BLOWOUT
- [ ] UNDERGROUND
- [ ] SURFACE
- [ ] DEVERTER
- [ ] SURFACE EQUIPMENT FAILURE OR PROCEDURES

COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K

8. OPERATION:
- [ ] PRODUCTION
- [ ] DRILLING
- [ ] WORKOVER
- [x] COMPLETION
- [ ] HELICOPTER
- [ ] MOTOR VESSEL
- [ ] PIPELINE SEGMENT NO.
- [ ] DECOMMISSIONING
  - [ ] PA [ ] PIPELINE [ ] SITE CLEARANCE
  - [ ] TA [ ] PLATFORM
- [ ] OTHER

9. CAUSE:
- [ ] EQUIPMENT FAILURE
- [x] HUMAN ERROR
- [ ] EXTERNAL DAMAGE
- [ ] SLIP/TRIP/FALL
- [ ] WEATHER RELATED
- [ ] LEAK
- [ ] UPSET H2O TREATING
- [ ] OVERBOARD DRILLING FLUID
- [ ] OTHER _____

10. WATER DEPTH: **4393** FT.

11. DISTANCE FROM SHORE: **55** MI.

12. WIND DIRECTION: **NE**
    SPEED: **9** M.P.H.

13. CURRENT DIRECTION: **S**
    SPEED: **1** M.P.H.

14. SEA STATE: **0** FT.

15. PICTURES TAKEN:

16. STATEMENT TAKEN:

**INCIDENT SUMMARY:**

**On February 13, 2024, at approximately 22:35 hours, Shell Offshore INC. (Shell) had two injuries on the Transocean Deepwater Proteus drillship, at Mississippi Canyon 899, while conducting completion operations on the SS005 well (API# 608174058004). Shell reported the incident to the Bureau of Safety and Environmental Enforcement (BSEE) New Orleans District on February 14, 2024.**

**SEQUENCE OF EVENTS:**

**On February 13, 2024, the operations at the time of the incident were to flush the Transocean Deepwater Proteus's deck penetration lines on the port aft pipe deck and prepare to rig up to the filtration unit for completion operations.**

**The task was to flush two independent lines on the port aft deck. The hoses were looped to two valves on the port aft pipe deck: the first valve was the supply (coming in from the drillship's mixing pump), and the second was the discharge going to the drillship's pit. The hose being disconnected was on the supply side (from the drillship's mixing pump).**

**The Transocean Derrick hand stated the valves were lined up to send drill water to the Tetra filter unit, and that he double verified the line-ups. He then communicated with the Tetra crew by radio that the valves were lined up. The Tetra crew informed the Derrick hand by radio they were ready to receive drill water on the out-board side, which is closer to the outside edge of the ship. The Derrick hand turned the pump on, sent an estimated 7 barrels of drill water through the lines, and was asked by the Tetra employee to shut the pump off. The Tetra crew asked the Derrick hand if they were finished with the out-board side, and if they could then line up on the in-board line. The Derrick hand then checked his line-up on the in-board line, and Tetra checked their line-up. The Derrick hand went back to the mud lab and waited for further instruction.**

**The Tetra crew later decided to repair a small leak in a 6 inch camlock connection. The repairing process consisted of opening the levers of the camlock connection and replacing the seal. The Tetra employee attempted to repair the leak by releasing the levers that hold the 6 inch camlock connection together; the pressure from the hose was released, and the hose blew off the deck flange. Two Tetra employees were knocked back by the hose. The Derrick hand then received a phone call and was asked if he had a pump running, to which the he replied no. He was informed someone was injured on the filter unit. The Derrick hand made sure the mud module was secure and proceeded to the pipe deck. At no time was there any pressure on the mix pump once it was shut off. The Derrick hand cannot read pressures above the deck due to a check valve on the discharge side of the pump.**

**BSEE INVESTIGATION:**

**On February 14, 2024, the BSEE Accident Investigation Team arrived on location and requested and received: pictures of the relevant equipment involved in the incident, a Job Safety Analysis (JSA) for the job being performed, a diagram of the of the drillship with the location of the incident, witness statements involved with the incident, the Pre-Displacement On-Line Flushing Procedure, and a Calcium Chloride-Calcium Bromide Solution Material Safety Data Sheet (MSDS). The BSEE Accident Investigation Team also viewed video recordings of the incident and took photos of the scene after the incident.**

**BSEE reviewed the documentation and concludes that the Tetra Filtration crew (three filtration specialists) and two Transocean personnel (one derrick hand and one pump hand) were working together to flush 6 inch hoses that carry completion fluid to and from the Tetra filtration presses and the drillship's pits. After the flushing was completed, a 6 inch camlock hose connection was being disconnected to repair a leak. When the connection was released, the pressurized fluid in the hose caused the hose to blow off and impact two Tetra personnel. One injured person (IP #1) was directly contacted by the hose and received facial impact before the hose then contacted another Tetra worker (IP #2) causing the worker to hit the pipe that was located directly behind him. Both personnel were flown ashore via a Medevac flight with an ETA of 01:00 hours at the New Orleans University Hospital.**

**After medical evaluation, both injured personnel were released from the hospital on Feb 14 and returned to work on February 19. The injured person who was struck with the hose had a fractured tooth with acute pain. The second injured person had an impact to the right thigh/femur which caused bruising on the leg and chemical exposure. While the worker did fall to the ground, the worker was not treated for any subsequent injuries on location or at the shore-based facility after the medevac.**

**It was found during the investigation that it is common practice when flushing deck penetration lines, and the pump shuts off, that you wait for the fluid pressure to leave the lines before closing the valves. In this case, that didn't happen, and the deck valve was immediately closed once pumping was finished. This resulted in trapped pressure in the line that was being disconnected. There were whip checks on the 6 inch hoses, but not around the camlock connection being disconnected, to prevent the hose that was being removed from knocking the two injured employees down. After the incident concluded, and the 6 inch camlock hose was reconnected, there was an extra whip installed. This whip check was attached beneath the deck penetration valve and to the hose. There was a Job Safety and Environmental Analysis (JSEA) used for this operation, and it was signed off by the Tetra filtration employees. In the JSEA, there was a checklist of items checked off that referenced: chemical exposure and PPE pressure, and whip checks, bleed off lines before removing, and reviewing the MSDS.**

**CONCLUSION(S):**

**BSEE concludes that the incident occurred due to the following: The appropriate PPE referenced in the MSDS states requirement of eye protection: wear safety glasses with splash shield or safety goggles/shield and Clothing: wear appropriate chemical resistant clothing and gloves. It was found that only safety glasses were worn during this operation and the chemical resistant clothing or gloves were not worn.**

**Hazard identification was not appropriately done, hazards with the flushing operations and trapped pressured were not identified or followed. The deck penetration lines that were flushed were not completely drained and the pressurewas not bled before being disconnected. The JSEA collected states: Drain lines before opening camlock connections and bleed off lines before removing hoses. The whip checks that were installed were not around the camlock connection to prevent the hose that was being removed from whipping and injuring personal.**

**In the Tetra flushing operations, inexperienced personnel were involved in the incident. BSEE found that one of the Tetra filtration crew members was a short service employee.**

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

**Human Performance Error:**

**1-Inexperience Offshore**
***Short service employee involved in the incident.**

**2-Not aware of hazards**
***Not wearing the proper PPE (The MSDS states; Eye Protection: wear safety glasses with splash shield or safety goggles/shield and Clothing: wear appropriate chemical resistant clothing and gloves). Only safety glasses were worn during this operation.**

***Disconnecting a hose with pressure on it (JSEA states; Drain lines before opening camlock connections and bleed off lines before removing hoses).**

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

**Work Environment:**

**Hazard Analyses and JSEAs**
***The JSEA used for this operation identified: chemical exposure, using PPE, pressure on lines, and using whip checks.**

**Supervision:**

**Not ensuring the use of the proper PPE**
***The JSEA reviewed for this operation specified the use of PPE for chemical exposure.**

20. LIST THE ADDITIONAL INFORMATION:

**N/A**

21. PROPERTY DAMAGED:

**None**

NATURE OF DAMAGE:

**None**

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

**The BSEE New Orleans District has no recommendations for the Office of Incident Investigations at this time.**

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **NO**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

**14-FEB-2024**

26. Investigation Team Members/Panel Members:

27. OPERATOR REPORT ON FILE:

28. ACCIDENT CLASSIFICATION:

29. ACCIDENT INVESTIGATION PANEL FORMED:
**NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

**David Trocquet**

APPROVED DATE: **17-MAY-2024**

# INJURY/FATALITY/WITNESS ATTACHMENT

[ ] OPERATOR REPRESENTATIVE
[X] CONTRACTOR REPRESENTATIVE
[ ] OTHER _____

[ ] INJURY
[ ] FATALITY
[X] WITNESS

NAME:

HOME ADDRESS:

CITY: STATE:

WORK PHONE: TOTAL OFFSHORE EXPERIENCE: YEARS

EMPLOYED BY:

BUSINESS ADDRESS:

CITY: STATE:

ZIP CODE:

[ ] OPERATOR REPRESENTATIVE
[X] CONTRACTOR REPRESENTATIVE
[ ] OTHER _____

[ ] INJURY
[ ] FATALITY
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| | |
|---|---|
| ☐ OPERATOR REPRESENTATIVE | ☐ INJURY |
| ☒ CONTRACTOR REPRESENTATIVE | ☐ FATALITY |
| ☐ OTHER _____ | ☒ WITNESS |

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