

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: 04-JUL-2015 TIME: 1120 HOURS

2. OPERATOR: Shell Offshore Inc.
REPRESENTATIVE:
TELEPHONE:
CONTRACTOR: NOBLE DRILLING (U.S.) INC. -
REPRESENTATIVE:
TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING DEVICE
- 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:

6. OPERATION:

4. LEASE: G34461
AREA: MC LATITUDE:
BLOCK: 812 LONGITUDE: -

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

5. PLATFORM:
RIG NAME: NOBLE GLOBETROTTER

6. ACTIVITY: EXPLORATION (POE)
 DEVELOPMENT/PRODUCTION
(DOCD/POD)

8. CAUSE:

7. TYPE:
 HISTORIC INJURY -
 REQUIRED EVACUATION 1 -
 LTA (1-3 days)
 LTA (>3 days) 1
 RW/JT (1-3 days)
 RW/JT (>3 days)
 Other Injury 1 Medical Treatment -

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

- FATALITY
- POLLUTION
- FIRE
- EXPLOSION

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

9. WATER DEPTH: 4475 FT.
10. DISTANCE FROM SHORE: 55 MI.
11. WIND DIRECTION: S -
SPEED: 14 M.P.H.
12. CURRENT DIRECTION: NE
SPEED: 0 M.P.H.
13. SEA STATE: 3 FT.

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

On 4 July 2015 at 2120 hours, an injury occurred at MC 812 on the Noble Globetrotter Drillship under contract with Shell Offshore Inc. The Injured Person (IP), who was making his rounds through the pump room, was struck by the end cap of a pressure relief valve from mud pump #4 when it was projected off due to a rapid increase in pressure.

At approximately 2005 hours, while in the process of circulating the well with mud pumps (#1 and #2), the Driller instructed the Derrick Man to take mud pump #4 off of the boost line. The Derrick Man was then instructed to line-up the #4 mud pump on the #1 standpipe to flush the choke and kill lines. After the line-up was completed, the Derrick Man confirmed to the Driller that the #4 mud pump was lined up on the #1 standpipe. NOTE: This line-up was conducted by utilizing the pump header manifold in the pump room.

At 2010 hours, the choke and kill lines were flushed through standpipe #1 using the #4 mud pump. At approximately 2036 hours, flushing of the choke and kill lines were complete. The drill crew then began installing chocks on lines on the rig floor from the Halliburton manifold to the #2 standpipe. NOTE: This operation is conducted in order for the rig to perform a FIT (Formation Integrity Test). With the FIT complete at 2315 hours, the drill crew connected a stand of drill pipe and opened the boost valve on the BOP (Blowout Preventer) panel. Without checking for proper alignment, the Driller initially staged up mud pump #4 to 10 strokes per minute. With no abnormal pressure observed, the Driller then increased the pump to 40 strokes per minute. At this time, the pressure on mud pump #4 rapidly increased to 7,919 psi. This rapid increase in pressure caused the pressure relief valve to actuate. Note that the pressure relief valve was set to actuate at 7,100 psi. At the moment the relief valve actuated, the relief valve actuator housing failed; the housing end cap was projected off, striking the IP in the left shoulder.

The BSEE investigation revealed that there were no records of any regular scheduled maintenance performed on these pressure relief valves as recommended by the National Oilwell Varco's "Installation, Care and Operations Manual." The pressure relief valve failed to maintain its integrity under pressure as the valve is rated to 10,000-psi.

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

- 1) The Driller failed to verify the proper alignment of the #4 mud pump to the boost line.
- 2) The #4 mud pump was lined-up on the #1 standpipe when the incident occurred. -

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

No maintenance program is in place to service, disassemble or check calibration on these pressure relief valves.

All of the above mentioned checks are listed in the National Oilwell Varco's "Installation, Care and Operations Manual." NOTE: The Operations Manual recommends an annual complete disassembly of the valve.

Monthly requirements are as follows:

- Operate valves through planned system of over pressurization. -
- Inspect valve function. -
- Test and calibrate setting pressure and relief pressure. -
- Inspect leakage of the valve.

Visually inspect hoses and fittings.

Note: None of the above requirements were performed.

Another contributing cause is the pressure relief valve failing to maintain its integrity under pressure. (Valve is rated to 10,000-psi).-

20. LIST THE ADDITIONAL INFORMATION:

- 1) The IP was the Assistant Driller on tour at the time of the incident. -
- 2) The IP was in the pump room with a new Floor Man instructing him on what to look for while the mud pumps are in operation. -
- 3) The IP was approximately 3 feet away with his back turned to the relief valve when the incident occurred. -
- 4) The actuator housing cap is 8.5" in diameter, 1"- thick and weighs 14-lbs. -

21. PROPERTY DAMAGED:

None

NATURE OF DAMAGE:

None

ESTIMATED AMOUNT (TOTAL):

\$

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The BSEE New Orleans District makes no recommendations to the Agency.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: YES

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

G-110 (W) 250.107 (a) - At the time of the Incident Investigation, BSEE inspectors determined that operations had not been performed in a safe and workmanlike manner and provided for the preservation and conservation of property and the environment. Improper alignment on mud pump #4 to standpipe #1. This resulted in pumping into a closed system.

G-111 (C)250.107 - At the time of the Incident Investigation, the facility could not provide BSEE Inspectors with any documentation in regards to any maintenance performed on the pressure relief valves on the mud pumps. This maintenance is required according to the valves manufacturer, National Oilwell Varco's "Installation, Care and Operations Manual".

25. DATE OF ONSITE INVESTIGATION:

08-JUL-2015

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26. ONSITE TEAM MEMBERS:

Earl Roy / Lorenzo Buckley /

29. ACCIDENT INVESTIGATION

PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

David Trocquet

APPROVED

DATE:

08-SEP-2015

INJURY/FATALITY/WITNESS ATTACHMENT

OPERATOR REPRESENTATIVE

INJURY

CONTRACTOR REPRESENTATIVE

FATALITY

OTHER _____

WITNESS

NAME:

HOME ADDRESS:

CITY:

STATE:

WORK PHONE:

TOTAL OFFSHORE EXPERIENCE:

YEARS

EMPLOYED BY:

BUSINESS ADDRESS:

CITY:

STATE:

ZIP CODE:

OPERATOR REPRESENTATIVE

INJURY

CONTRACTOR REPRESENTATIVE

FATALITY

OTHER _____

WITNESS

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