

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: 13-APR-2016 TIME: 0315 HOURS

2. OPERATOR: Shell Offshore Inc.
REPRESENTATIVE:
TELEPHONE:
CONTRACTOR: TRANSOCEAN OIL 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: G17001
AREA: WR LATITUDE:
BLOCK: 508 LONGITUDE:

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

5. PLATFORM:
RIG NAME: T.O. DEEPWATER THALASSA

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

8. CAUSE:

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

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

FATALITY
 POLLUTION
 FIRE
 EXPLOSION

LWC HISTORIC BLOWOUT
 UNDERGROUND
 SURFACE
 DEVERTER
 SURFACE EQUIPMENT FAILURE OR PROCEDURES

9. WATER DEPTH: 9582 FT.

10. DISTANCE FROM SHORE: 163 MI.

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

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

13. SEA STATE: FT.

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

On April 13, 2016, a fire occurred aboard Transocean's drillship the "Deepwater Thalassa," while performing drilling operations for Shell Offshore Inc. The rig was in the process of drilling Shell's "Stones 10" well, which is located in Walker Ridge 508, when the incident occurred.

At approximately 03:10 on the morning of the incident, a smoke detector located inside the rig's Energy Storage Room was signaled. The ship's Energy Storage Room is located on the rig's second deck and just forward of the ship's moon pool area. Upon arrival, first responders confirmed the presence of heavy smoke in the area. After further investigation, a small fire was observed inside one of the ship's "Energy Storage Unit Cabinets." The ship was immediately put into "Yellow" status, the ship's general alarm was sounded, and all personnel on board were instructed to report to their muster stations. The Drill Crew prepared to secure the well as the Fire Team entered the Energy Storage Room to fight the fire. The fire was put out with the use of a 5kg CO2 fire extinguisher with minor equipment damages being sustained. All compartments adjacent to the Energy Storage Room were verified to be secure and the space was monitored to ensure the source did not reignite. Once the situation was determined to be safe and under control, personnel were allowed to return to work and an investigation into the cause of the fire began. Once the problem was assessed and the equipment isolated, the rig operations were able to continue in lieu of the damages to the Energy Storage Unit.

The "Electrical Energy Storage and Power Dissipation System" is designed to maintain stability within the DC Bus while operations or underway on the rig floor. This system consists of 17 individual units, each consisting of a bank of "ultra-capacitors" and two "discharge resistors." The ultra-capacitors are designed to store excess energy that is carried from the ship's drilling bus while operating the rig's drawworks. This stored energy can then be discharged back into the system, via the "discharge resistors," for use when the demand for more energy is called for.

The investigation that followed the incident showed that the fire occurred due to a malfunction within the control system of the Energy Storage Unit. The control system allowed energy to be continuously passed to "Energy Storage Unit S315," even though it was not being stored in the unit's ultra-capacitors. The failure allowed for excessive heat to build up within the unit causing the equipment to overheat and ultimately catch fire.

Following the incident, the equipment manufacturer, Aspin Kemp, along with Transocean International, developed and installed 'safety software' to the system to prevent a recurrence. The "safety software" is designed primarily to monitor the ultra-capacitors for any abnormalities in the energy being transferred into and out of the Energy Storage Unit. Should a problem be detected, the system is designed to isolate the affected Energy Storage Unit and report the issue via the monitoring system. The system was tested after installation of the new software and determined to be capable of accurately detecting and warning of this type of failure.

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

1) A malfunction in the control system for the "Energy Storage Unit" allowed energy to be constantly fed to the unit's ultra-capacitor, causing it to overheat and eventually catch fire.

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

1) No sensors or warning devices installed within the software to report potential problems in the electrical system.

20. LIST THE ADDITIONAL INFORMATION:

There was a similar incident on the sister ship of the "Deepwater Thalassa," the "Deepwater Proteus." Both rigs were utilizing the same software to control the "Energy Storage Units" at the time of their incident and both have since been upgraded with the added safety features.

21. PROPERTY DAMAGED:

Energy Storage Unit Cabinet

NATURE OF DAMAGE:

Burnt Electrical Equipment

ESTIMATED AMOUNT (TOTAL): **\$12,000**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The Houma 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:

N/A

25. DATE OF ONSITE INVESTIGATION:

26. ONSITE TEAM MEMBERS:

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

Troy Boudreaux / Daniel Ballard /
Cedric Bernard / James Richard /

Bryan Domangue

For Public Release

APPROVED

DATE: 28-JUN-2016