**UNITED STATES DEPARTMENT OF THE INTERIOR**
**MINERALS MANAGEMENT SERVICE**
**GULF OF MEXICO REGION**

# ACCIDENT INVESTIGATION REPORT

1. OCCURRED
   DATE: **27-APR-2008** TIME: **0800** HOURS

2. OPERATOR: **Union Oil Company of California**
   REPRESENTATIVE: **Campise, Debra**
   TELEPHONE: **(832) 854-2617**
   CONTRACTOR: **Transocean Offshore**
   REPRESENTATIVE: **Davenport, Joey**
   TELEPHONE: **(713) 232-8447**

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

4. LEASE: **G21245**
   AREA: **WR** LATITUDE:
   BLOCK: **678** LONGITUDE:

5. PLATFORM:
   RIG NAME: **T.O. DISCOVERER DEEP SEAS**

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

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
- [X] FIRE
- [ ] EXPLOSION
- LWC
  - [ ] HISTORIC BLOWOUT
  - [ ] UNDERGROUND
  - [ ] SURFACE
  - [ ] DEVERTER
  - [ ] SURFACE EQUIPMENT FAILURE OR PROCEDURES
- COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K
- [ ] STRUCTURAL DAMAGE
- [ ] CRANE
- [ ] OTHER LIFTING DEVICE
- [ ] DAMAGED/DISABLED SAFETY SYS.
- [ ] INCIDENT >$25K
- [ ] H2S/15MIN./20PPM
- [X] REQUIRED MUSTER
- [ ] SHUTDOWN FROM GAS RELEASE
- [ ] OTHER

6. OPERATION:
- [ ] PRODUCTION
- [X] DRILLING
- [ ] WORKOVER
- [ ] COMPLETION
- [ ] HELICOPTER
- [ ] MOTOR VESSEL
- [ ] PIPELINE SEGMENT NO.
- [ ] OTHER

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

9. WATER DEPTH: **7016** FT.

10. DISTANCE FROM SHORE: **200** MI.

11. WIND DIRECTION: **ENE**
    SPEED: **12** M.P.H.

12. CURRENT DIRECTION: **ESE**
    SPEED: **1** M.P.H.

13. SEA STATE: **4** FT.

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

**At approximately 8:00 am fuel alarms and flame detector alarms were observed coming from the engine room. A mechanic was sent to the engine room where he visually confirmed a fire on one of the three engines in the room. The mechanic sealed the room and hit the ESD for all three engines. The rig went on full muster and emergency teams were sent to the engine room to assess the scene. Orders were given by the Captain to discharge the CO2 system into the engine room. The fire was deemed to be contained by the emergency teams and evacuation of personnel was not necessary. At the time of the incident the rig was in the process of tripping back in the well to drill out the casing shoe that had recently been set and drill ahead for the next hole interval. No actual drilling took place and the drill string was pulled out of the hole. The well was secured and the rig moved to shallow waters in Grand Isle Block 70 for repairs. This event had no impact on the rigs ability keep station. Coast Guard was notified of the situation. No injuries and no pollution occurred.**

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

**A non-Original Equipment Manufacturer (OEM) O-ring was found to be installed in a flange on the fuel line. This prevented a metal-to-metal contact. Heat and vibration allowed two of the four bolts to back-out of the flange and the two remaining bolts sheared off. This allowed fuel to be released on the hot engine surface and subsequently ignite.**

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

**Insufficient training of the person(s) who installed the O-ring. The O-ring did not match the part numbers specified in the technical bulletin for the engine. Also, insufficient training of the person(s) who perform periodic maintenance for verifiying the proper torque on the flange bolts. It is unknown if this occurred during fabrication, installation, or subsequent maintenance.**

20. LIST THE ADDITIONAL INFORMATION:

**Transocean will review the following: existing periodic maintenance procedures and frequency of inspection for fuel line and connections with Wartsila and revise procedures accordingly, shelf life of OEM fuel line connection O-rings to ensure a sufficient quantity is maintained in warehouse stock, require attendance to formal Wartsila engine maintenance courses for engine maintenance personnel, the cladding and shrouding arrangements on the engines to determine what improvements can be made and the suitability of using a bolt locking compound. Consider installing additional shrouding or claddng to divert fuel from high temperature areas of the engine in the event of a fuel line failure. Inspect all other fuel oil line connections to check torque, O-rings and any other abnormalities.**

21. PROPERTY DAMAGED:

**Cylinder head & hot box covers, turbochargers, oil mist detector, starting air valve assembly, engine sensors & transmitters, solenoid valves, level & limit switches, electrical cables, light fixtures, fire & gas detectors, communication & alarm circuits.**

NATURE OF DAMAGE:

**All property damaged sustained significant and various degrees of melting and deformation from heat.**

ESTIMATED AMOUNT (TOTAL): **$240,000**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

**Due to the nature of the incident, the Houma District has no recommendations at this time.**

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

26. ONSITE TEAM MEMBERS:

**Ben Coco /**

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

OCS REPORT:

30. DISTRICT SUPERVISOR:

**Bryan A. Domangue**

APPROVED

DATE: **21-JUL-2008**