

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: **01-OCT-2014** TIME: **1700** HOURS

2. OPERATOR: **Fieldwood Energy LLC**

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR: -

REPRESENTATIVE: -

TELEPHONE: -

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

4. LEASE: **G19797**

AREA: **EI** LATITUDE: -

BLOCK: **355** LONGITUDE: -

5. PLATFORM: **A**

RIG NAME:

6. ACTIVITY: 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

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 **Handrails and deck**

H2S/15MIN./20PPM **grating** -

REQUIRED MUSTER

SHUTDOWN FROM GAS RELEASE

OTHER **Equipment damage**

6. OPERATION:

PRODUCTION

DRILLING

WORKOVER

COMPLETION

HELICOPTER

MOTOR VESSEL

PIPELINE SEGMENT NO.

OTHER **Abandonment**

8. CAUSE:

EQUIPMENT FAILURE

HUMAN ERROR -

EXTERNAL DAMAGE

SLIP/TRIP/FALL

WEATHER RELATED

LEAK

UPSET H2O TREATING

OVERBOARD DRILLING FLUID

OTHER **Loss of vessel station keeping**

9. WATER DEPTH: **288** FT. -

10. DISTANCE FROM SHORE: **80** MI.

11. WIND DIRECTION: -

SPEED: M.P.H. -

12. CURRENT DIRECTION:

SPEED: M.P.H. -

13. SEA STATE: FT.

At approximately 17:00 hours on 1 October 2014, the offshore supply vessel (OSV) Endurance lost station keeping while conducting well operations for Fieldwood Energy LLC (Fieldwood) on Well A002 located at the Eugene Island (EI) Block 355A platform. The Endurance is a dynamically-positioning (DP) capable OSV equipped with a DP-1 system and is owned and operated by Freedom Marine Services (FMS) of Houma, Louisiana. The FMS Endurance had a cement pump staged on board that was connected to the Well A002 production tree with rigid high pressure lines and had pressure tested the wireline lubricator to 4000 pounds per square inch. When the crew was running in the hole with wireline and was at a depth of 9000 feet (ft), for reasons unknown, the FMS Endurance lost its station keeping and started moving away from the EI-355A platform. As the vessel moved off location, the Well A002 production tree was severed at the wellhead flange and fell overboard but was later retrieved. The well was secured by closing the downhole safety valve and by installing a temporary flange cap on the tubing head. The lubricator on top of the production tree and connected to the wireline unit staged on the platform, fell over onto the platform deck damaging some hand railing and grating in the vicinity of Well A002. An estimated area of 300 ft by 50 ft of oil was spilled into the offshore waters which was reported to the United States Coast Guard (USCG) National Response Center (NRC), NRC Report # 1097096. There were no reported injuries associated with this incident. On 6 October 2014, Well A002 was secured by installing a new production tree for future remedial work.

In a written statement to the USCG, the captain of the FMS Endurance stated that the bow thruster alarm had sounded several times on 1 October 2014, but each time it was able to reset into the DP mode without losing station keeping. However, at 16:34 hours, the bow thruster alarm sounded again and although power was not lost, the DP system was failing to maintain the vessel's position. As a consequence, the captain took over manual controls and put both throttles full astern, but the vessel continued to move forward due to its initial momentum causing the rigid high pressure line to shear the Well A002 production tree off the wellhead.

During October of 2014, FMS and USCG along with International Marine Systems, Marine Technologies, Fugro, and Rhodes Electronics completed a series of diagnostic checks of the entire DP systems. FMS was directed by the USCG to try to recreate the circumstances that occurred on 1 October 2014 as recorded on the FMS Endurance's event log. Several days of sea trials were conducted; however, and no issues were found with the DP system. However, during the analysis of the FMS Endurance's event log, it revealed that the DP system, gyro and throttles all went out at once due to some type of electrical interference.

The FMS Endurance had a communication tower recently installed and according to the communication tower vendor, it should not have been placed near any vital GPS equipment. On the day of the incident, the communications tower was located 6 inches (in) from the throttle system boards, 28 in from the gyro system and the DP system was approximately 1 ft below the communication tower. Based upon this information, all parties believed that since the communications tower was located within 1 ft of the DP system, it may have caused electronic interferences as it received or transmitted signals on the day of the incident.

FMS has since implemented a policy for all of their DP vessels that no communications equipment can be located within 1 meter (3.28 ft) of the throttle control computer, DP computer or gyros. In addition, a safety break-away hose coupling will be utilized in future applications.

On 24 February 2015, the USCG and BSEE issued a joint Safety Alert that addressed DP system failures on OSVs that are engaged in oil and gas operations in the U.S. outer continental shelf.

The FMS Incident Investigation Report submitted to BSEE by Fieldwood indicated that the probable cause of the FMS Endurance losing station keeping and stripping off the Well A002 production tree was attributed to some type of electrical interference with the DP system from a communications tower that was installed on the vessel near the GPS equipment.

The possible contributing cause can be attributed to the absence of an emergency disconnect coupling within the rigid hard line piping from the FMS Endurance and Well A002 that would allow a quick disconnect of the piping in the event of a loss of station keeping by the vessel.

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

The FMS Incident Investigation Report submitted to BSEE by Fieldwood indicated that the probable cause of the FMS Endurance losing station keeping and stripping off the Well A002 production tree was attributed to some type of electrical interference with the DP system from a communications tower that was installed on the vessel near the GPS equipment.

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

The possible contributing cause can be attributed to the absence of an emergency disconnect coupling within the rigid hard line piping from the FMS Endurance and Well A002 that would allow a quick disconnect of the piping in the event of a loss of station keeping by the vessel.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

There was minor damage to the platform's grating and hand rails.

NATURE OF DAMAGE:

The damage to the platform's grating and hand rails was limited to the area around Well A002.

ESTIMATED AMOUNT (TOTAL): \$8,000 -

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

For Public Release

The BSEE Lafayette District recommends that the Office of Safety Management coordinate with Field Operations Region Management to address the following: 1) add a question in e-Well to identify the type of work vessel including DP vessels and to capture the vessel's DP capabilities and 2) develop an interim SOP to evaluate DP vessels for various offshore well operations until improved regulatory guidelines are established by the USCG and/or BSEE. At the present time, there are no recognized industry standards or absolute regulatory requirements to follow.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

None

25. DATE OF ONSITE INVESTIGATION:

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

26. ONSITE TEAM MEMBERS:

Troy Naquin /

OCS REPORT:

30. DISTRICT SUPERVISOR:

Elliott S. Smith

APPROVED

DATE: **06-APR-2015**