

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: 29-NOV-2020 TIME: 0657 HOURS

2. OPERATOR: Fieldwood Energy LLC

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
- OTHER

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

8. OPERATION:

4. LEASE: 00842

AREA: WD LATITUDE:

BLOCK: 105 LONGITUDE:

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

5. PLATFORM: E

RIG NAME:

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

9. CAUSE:

7. TYPE:

INJURIES:

HISTORIC INJURY

OPERATOR CONTRACTOR

REQUIRED EVACUATION

LTA (1-3 days)

LTA (>3 days)

RW/JT (1-3 days)

RW/JT (>3 days)

FATALITY

Other Injury

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

POLLUTION

FIRE

EXPLOSION

LWC HISTORIC BLOWOUT

UNDERGROUND

SURFACE

DEVERTER

SURFACE EQUIPMENT FAILURE OR PROCEDURES

10. WATER DEPTH: 237 FT.

11. DISTANCE FROM SHORE: 12 MI.

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

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

14. SEA STATE: FT.

15. PICTURES TAKEN:

16. STATEMENT TAKEN:

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

On November 29, 2020 at approximately 6:57 a.m., a flash fire occurred during maintenance on a gas compressor engine at the West Delta (WD) Block 105 "E" platform, owned and operated by Fieldwood Energy, LLC. (Fieldwood). The platform shut in as a result of the fire; however, no injuries, pollution, or property damage occurred as a result of the fire.

Sequence of Events:

On November 29, 2020 at approximately 0657 hours, a mechanic began troubleshooting the compressor engine. The No. 6 left bank power cylinder was not firing on the compressor. When the mechanic loosened and disconnected the secondary spark plug wire from the coil, the cylinder caught fire. The mechanic immediately climbed down the catwalk, activated the Emergency Shut Down (ESD) system, and grabbed a fire extinguisher. The ESD automatically sounded the fire alarm. He then went back to the compressor and extinguished the fire. No injuries, pollution, or damage occurred. The platform remained shut in until a root cause analysis was performed.

On November 29, 2020 at 1056 hours, the incident was reported to BSEE.

On November 29, 2020 at 1718 hours, the BSEE Accident Investigator (AI) granted permission to pressure up on the Fuel Gas Regulator to confirm a gasket leak. This task was performed without cranking the compressor engine.

On December 01, 2020, the BSEE AI granted permission to make necessary repairs to the compressor and bring the platform back on-line. The platform started back up without incident.

BSEE Investigation:

On November 30, 2020, the BSEE AI received an email summarizing the incident. The AI contacted the facility and requested photos from Fieldwood's Health, Safety, and Environment (HSE) Coordinator. The AI received photos of the compressor and fire extinguisher, the make and model of the compressor, and the Job Safety Analysis (JSA). BSEE received Fieldwood's Root Cause Analysis (RCA).

BSEE concurs with Fieldwood's RCA which indicated that the No. 6 left bank cylinder head fuel injection line had gas leaking due to a failed gasket where the machined flange bolts to the cylinder head. It was also found that the JSA was generic and the list of "Potential Safety Hazards and Controls" was not specific to the task at hand. There was no mention of a potential gas leak or ignition source. A hot work permit was not utilized. A gas detector was not used to see if any gas may have been present prior to introduction of an ignition source into a classified area.

The findings indicated that the cause of the gas leak was a cut gasket on the fuel valve jumper line. BSEE verified this through photos from the incident. A broken gasket allowed gas to release. When the mechanic removed a spark plug wire from an ignition coil, a spark was introduced into a area where gas was present in explosive quantities. A flash fire resulted. The BSEE AI confirmed that the compressor engine had a low-tension ignition system.

BSEE found that Fieldwood's response to fire was adequate and followed regulations. The fire extinguisher was in working order and the inspection was up-to-date, the location of the fire extinguisher was close enough to fight an incipient fire, and the platform was properly shut down to prevent further escalation.

Conclusion:

The Fieldwood RCA and the BSEE AI concluded that the flash fire on the compressor engine was caused by a cut gasket on the fuel valve jumper line, which allowed gas to leak. When the mechanic disconnected the spark plug wire from the coil, the spark ignited the gas, resulting in a flash fire. BSEE found the probable cause of the incident to be that Fieldwood's management systems inadequately identified hazards. The JSA did not properly identify all hazards associated with the task. A gas detector was NOT used to see if any gas might have been present prior to introducing an ignition source into a classified area. A hot work permit was not utilized.

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

- Management Systems - Inadequate hazard analysis - JSA did not properly identify all hazards associated with the task. A gas detector was NOT used to see if any gas might have been present prior to introducing an ignition source into a classified area. A hot work permit was not utilized.

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

n/a

20. LIST THE ADDITIONAL INFORMATION:

On December 1, 2020, Fieldwood Energy released a Safety Bulletin to all their personnel across the Gulf of Mexico of their findings from the flash fire on the compressor. Below are the corrective actions and preventative measures that Fieldwood is taking to prevent another incident like this in the future.

Corrective Actions:

- Replace gaskets on all 16 cylinder head fuel injection line flanges.
- Inspect ignition secondary wires and replace as needed.
- Utilize gas detector to make sure area is safe and gas free prior to troubleshooting suspected ignition related issues where equipment is still running or online.
- Utilize hot work permit program when troubleshooting suspected ignition issues and have a fire watch present.
- Add replacement of fuel injection flange gaskets to annual inspection checklist.
- Educate maintenance personnel of risk of disconnecting ignition wires while equipment is running.
- Pre-job planning needs to be more thought out and discussed by both the mechanic and the PIC signing the JSA.

Investigation conducted from Office by Nathan Bradley on 11/29, 11/30, and 12/2/20.

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

n/a

n/a

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The BSEE New Orleans District makes no recommendations to the Office of Incident Investigation.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: YES

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

G110(C): DOES THE LESSEE PERFORM ALL OPERATIONS IN A SAFE AND WORKMANLIKE MANNER AND PROVIDE FOR THE PRESERVATION AND CONSERVATION OF PROPERTY AND THE ENVIRONMENT?

On November 29, 2020 while troubleshooting the gas compressor (CBA-2030) the lessee failed to perform the operation in a safe and workmanlike manner. A gas detector was not used to ensure that hazardous gases were NOT present while disconnecting a spark plug wire from the coil. This action introduced a spark into a classified area which resulted in a fire. INC corrected before end of inspection on 11/29/2020.

25. DATE OF ONSITE INVESTIGATION:

28. ACCIDENT CLASSIFICATION:

29. ACCIDENT INVESTIGATION
PANEL FORMED: NO

26. INVESTIGATION TEAM MEMBERS:

OCS REPORT:

Nathan Bradley /

30. DISTRICT SUPERVISOR:

27. OPERATOR REPORT ON FILE:

David Trocquet

APPROVED

DATE:

31-DEC-2020