

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: **03-NOV-2017** TIME: **1350** HOURS

2. OPERATOR: **Flextrend Development Company, L**

REPRESENTATIVE:  
 TELEPHONE:

CONTRACTOR: **Genesis Energy, L.P.**

REPRESENTATIVE:  
 TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING
- DAMAGED/DISABLED SAFETY SYS.
- INCIDENT >\$25K
- H2S/15MIN./20PPM
- REQUIRED MUSTER
- SHUTDOWN FROM GAS RELEASE
- OTHER **Pressure release**

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR ON SITE AT TIME OF INCIDENT: 8. OPERATION:

4. LEASE: **G09743**

AREA: **VK** LATITUDE: **29.16740033**  
 BLOCK: **817** LONGITUDE: **-88.45586715**

5. PLATFORM: **A**

RIG NAME:

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

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

7. TYPE:

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

- FATALITY
- POLLUTION
- FIRE
- EXPLOSION

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

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

9. CAUSE:

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

- 10. WATER DEPTH: **673** FT.
- 11. DISTANCE FROM SHORE: **34** 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:

On November 3, 2017, at approximately 1350 hrs, a welding and grinding operation was being conducted on an 8" vent line. A pressure release/flash fire occurred injuring one contractor, sustaining moderate burns to the face, forehead, and wrist at Viosca Knoll 817-A Flextrend Development Company L.L.C. platform OCS-G 09743 operated by Genesis Energy.

On September 23, 2017, the facility shut-in to conduct corrosion remediation and repairs. The scope of work was to perform hot work changing out 8" ANSI flanges onto 8" vent piping.

On November 3, 2017, the GOM Fabricators (GOMF) started the corrosion remediation and repairs project on VK 817-A. Genesis Energy & GOMF conducted a safety meeting with all parties involved issuing hot work permits and JSEAs. The Direct Scaffold Supply(DSS) and GOMF company set up scaffolding and spark containment and also removed the grating to access the work area. The contractors also installed hard barricades on the production deck area on an open hole where the work was to be performed to swap out the vent piping system.

The preparation started with the first line break to install the 8" friction plugs with a 2 lbs. rating before the welding and grinding could start. The GOMF purged the 8" vent line piping with nitrogen. After purging the line, the fire watchers verified the gas readings using a portable gas detector reading 0% LEL after nitrogen was introduced to the piping, giving the fire watch crew the go-ahead to install the friction plugs to secure the vent piping. The welder 's fire watchers went into position, first fire watch #1 was positioned at the welding site and the second fire watch #2 got into position below the work area in case of sparks flying that could potentially cause a fire below. The gas reading at the job site and below were at 0% LEL. The fire watchers gave the all clear to start welding, noting there was no present gas reading in the area and began their monitoring for gas, documenting the LEL every two hours.

After no presence of gas in the area, the welder was given the go-ahead to start grinding on the 8" vent line. The welder began by grinding and welding on the right side of the vent piping. When the right side was completed, the welder moved his equipment to the left side to begin closing the weld. The fire watchers took another reading before the welder continued grinding and welding on the vent line. The reading was 0% LEL on their portable gas detectors, giving the all clear to restart the grinding and welding. The welder started with the grinding process before he started welding.

When the grinding was completed, he prepared to start welding on the 8" vent line. As soon as the welder struck the arc on the left side of the piping, a flash fire occurred from a pressure release, followed by white smoke. The welder sustained burns while trying to protect himself by placing his hand over his face. The welder's face shield was forced 20 feet in the air, and he was thrown down onto the scaffold from the force of the pressure release bursting out of the 8" vent pipe. The welder then made his way off the scaffolding to get to safety. The fire watch #1 immediately came to his aid noticing burns to the welder's left cheek, forehead and wrist. The welder was taken upstairs to the medic by the GOMF and Genesis Energy crew members to perform first aid. The medic and Genesis Energy Person in Charge (PIC) called for a helicopter to evacuate the injured GOMF welder to the hospital for burn treatment. After the IP was evacuated, the crew secured the area and made it safe until the investigation could be conducted.

During the BSEE Investigation, all requested documentation, witness statements, and photos of the pressure release flash fire with an injury that occurred on November 3,

2017, at approximately 1350 hrs was received by Genesis Energy and promptly reviewed by the New Orleans District Investigator.

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The Flextrend VK 817-A facility's (operated by Genesis Energy) scope of work was to change out the 8" vent line welding ANSI flanges from the ABH 650 closed drain sump tank to the vent separator. The facility had been shut in since 9/23/2017 to conduct corrosion remediation and repairs on the facility.

GOMF & Genesis Energy started on the 8" vent line on November 1, 2017, but a few setbacks delayed the project until November 3, 2017. When GOMF swept the vent line with nitrogen, (starting the first line break on the 8" vent line) it was discovered that the 8" piping friction plugs that insulate the contaminants were not onboard and had to be ordered and shipped out to the facility. GOMF received the piping plugs on November 2, 2017, and started the project by cutting locations on the piping to install the friction plugs.

GOMF contractors swept the line again with nitrogen on November 2, 2017, for the GOMF welder. Next, they welded out the flange on the 8" line of the closed drain sump.

After reviewing the Genesis Energy job scope, the #1 friction plug was installed through the 8" flange where the outlet valve for the PSV on the MBH 650 and the #2 plug was installed through the open-ended vent stack.

On November 3, 2017, at 0700 hrs, the fire watchers monitored the welding area documenting every two hours for gas. The GOMF welder completed the welds to join two spool pieces together. The contractors stopped for lunch and resumed afterwards to continue the project. The welding site gas reading was retaken by the fire watchers to ensure the area was free of gas.

The GOMF welder started with his final weld on the 8" vent line flanges on the north side of the piping and when completed, moved to the south side of the vent piping to finalize the welding project. During the welding project, the contractors involved were unaware of the friction plugs movement in the piping. This potentially made the area a hazardous environment for the personnel onboard the facility.

The GOMF welder completed the grinding to prepare for the welding. The welding area had been checked for any gas leaks in the area giving the welder the all clear to weld. As soon the GOMF welder struck the arc, the #1 pipe plug dislodged in the vent piping closest to the vent scrubber and the platform, causing a pressure release with a flash of fire that extinguished itself injuring the one contractor that was welding on the vent piping at the time. The investigation revealed that the #1 and #2 pipe friction plugs moved during the welding operations, causing a pressure release/flash fire with an injury.

The BSEE investigation revealed that the GOMF & Genesis Energy contractors failed to adhere to the company policy checking for pressure buildup behind the friction plugs during hot work operations. The hazards of introducing oxygen to an unclean vessel was not identified in the safety walk-down before the job started. The following was documented in the JSEA as a precautionary measure: "A potential fire and explosion from vapors, trapped pressure, ejected plug, and unauthorized use of a plug." The incident with injury could have been avoided if the GOMF & Genesis Energy contractors had followed Genesis Energy Offshore Welding, Oxyfuel Gas Cutting and Hot Work Safe Practices and Procedures Plan.

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

- GOMF & Genesis Energy contractors failed to adhere to the company policy checking for pressure buildup behind the friction plugs during hot work operations.
- As documented in the JSEA as a precautionary measure, "A potential fire and explosion from vapors, trapped pressure, ejected plug, and unauthorized use of a plug."

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

- The incident with injury could have been avoided if the GOMF & Genesis Energy contractors had followed Genesis Energy (Offshore Welding, Oxyfuel Gas Cutting and Hot Work Safe Practices and Procedures Plan) following all the steps when performing this type of hot work.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

**No Damage**

**N/A**

ESTIMATED AMOUNT (TOTAL):

\$

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

**Add checklist for critical path steps to the plug use policy that includes preventing flammable atmosphere within piping or vessels.**

**Check for pressure buildup behind the friction plugs before hot work operations.**

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

07-NOV-2017

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26. INVESTIGATION TEAM MEMBERS:

**Pierre Lanoix ( Accident Investigation  
Specialist) /**

29. ACCIDENT INVESTIGATION

PANEL FORMED:**NO**

30. DISTRICT SUPERVISOR:

OCS REPORT:

**David Trocquet**

APPROVED

DATE:

**09-JUL-2018**