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: **23-DEC-2018** TIME: **1800** HOURS

2. OPERATOR: **Eni US Operating Co. Inc.**
REPRESENTATIVE:
TELEPHONE:

CONTRACTOR: **Reagan Power and Compression**
REPRESENTATIVE:
TELEPHONE:

- [ ] STRUCTURAL DAMAGE
- [ ] CRANE
- [ ] OTHER LIFTING
- [ ] DAMAGED/DISABLED SAFETY SYS.
- [X] INCIDENT >$25K **125K**
- [ ] H2S/15MIN./20PPM
- [X] REQUIRED MUSTER
- [ ] SHUTDOWN FROM GAS RELEASE
- [X] OTHER **compressor end cap**

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

4. LEASE: **G07049**
AREA: **GC** LATITUDE:
BLOCK: **254** LONGITUDE:

5. PLATFORM: **A(ALLEGHENY SEA**
RIG NAME:

6. ACTIVITY:
- [ ] EXPLORATION(POE)
- [X] 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
- [X] EXPLOSION

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

COLLISION [ ] HISTORIC [ ] >$25K [ ] <=$25K

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

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

10. WATER DEPTH: **3294** FT.

11. DISTANCE FROM SHORE: **86** 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:

17. INVESTIGATION FINDINGS:

At approximately 1800 hours on December 23, 2018, an explosion occurred on OCS-G 7049, Green Canyon 254 - A facility (Allegheny Sea). The operator of record is Eni US Operating Co. Inc. (Eni).The facility is located 86 miles from shore in 3294 feet of water.

According to Operator investigation findings, after the mechanic replaced the carburetor on the temporary rental Booster Compressor engine CAE-5140A, it ran unloaded for approximately eight minutes to make carburetor adjustments. The idle speed was set to 800 rpm in preparation for testing during the pre-startup phase when an explosion occurred inside Cooler HAL-4160B. The explosion caused separation of the cooler end caps with small sections of piping striking the Glycol Contactor base, main deck south guardrail and ESD (Emergency Shutdown) station #7. Although damage to the ESD station shut in the facility, the compressor engine remained running and the mechanic had to manually shut it down after the emergency stop button failed to function. Personnel also closed off the engine starter air supply and fuel gas supply thereafter. All personnel mustered as a result of the ESD signal alarm and accounted for without injury.

BSEE Inspectors arrived at the platform on December 26, 2018 to begin the investigation. BSEE took pictures and witness statements as well as a survey of the damages at the site of the incident.

Based on the information obtained during the BSEE investigation, the manufacturer configured the rental compressor package to use instrument gas for supply. When installed on the facility, personnel connected instrument air. Though the engine was running, the unit was not loaded or compressing gas at the time of the incident. Air from the Kimray pressure control valve connected to the inlet suction scrubber allowed a continuous source of air to enter the process and mix with gas from the vent system that migrated through an open BDV (Blowdown Valve). The ignition of a LEL (lower explosive limit) mixture of air and natural gas caused internal detonation within the process piping and components. This internal detonation resulted in an explosion damaging the end caps of the cooler upon ignition.

Prior to installation, ENI created a MOC (Management of Change) but did not update it to address modifications recommended by the rental company and the approval process was not completed. Pre-startup review and operating procedures were not available at the time of the incident.

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

Air supply was used for instrument supply which allowed air to the enter inlet of the Booster Compressor from the Kimray pressure control valve. This allowed a continuous source of air to enter the process and mix with gas from the vent system.

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

The temporary rental Booster Compressor was not installed as recommended by the manufacturer.
The MOC process was not followed.
Pre-startup review was not conducted.
Operating procedures were not available.

20. LIST THE ADDITIONAL INFORMATION:

None

21. PROPERTY DAMAGED:

The entire Booster Compressor Cooler Module, PSV and discharge piping, ESD station #7, Main Deck South Guardrail, spray bottle and hearing protection box.

NATURE OF DAMAGE:

Cooler and piping - broken welds & bent
ESD station & Hearing protection box - gashed/split
Guardrail & spary bottle - dented

ESTIMATED AMOUNT (TOTAL): **$125,000**

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The Houma District Office has no recommendations for the Office of Incident Investigations.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **YES**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

On 12-26-18 an Incident of Non-Compliance (INC-G-110 (W)) was issued from the Houma District Office for an incident occurring on 12-23-18. The INC states as follows: “During start up the ZZZ 9790 Booster Comp. gas cooler end caps blew off. Vent tubing line coming off air regulator was found hooked to sensing line going into MBF 1940 Suction Scrubber, mixing air and gas together. Contact Houma Office before startup of booster comp.”

25. DATE OF ONSITE INVESTIGATION:

26-DEC-2018

26. INVESTIGATION TEAM MEMBERS:

Terry Hollier (on-site) / David Benoit (on-site) / Keith Barrios (on-site) / Andreww Gros (generated) /

28. ACCIDENT CLASSIFICATION:

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

OCS REPORT:

30. DISTRICT SUPERVISOR:

Bryan A. Domangue

27. OPERATOR REPORT ON FILE:

APPROVED DATE: **09-JUL-2019**