

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: 27-JAN-2017 TIME: 0800 HOURS

2. OPERATOR:

Energy XXI GOM, LLC

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR: Fluid Crane and Construction

REPRESENTATIVE:

TELEPHONE:

- STRUCTURAL DAMAGE
- CRANE
- OTHER LIFTING DEVICE
- 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:

6. OPERATION:

4. LEASE: G01619

AREA: SP LATITUDE: 28.669635
BLOCK: 93 LONGITUDE: -89.393492

- PRODUCTION
- DRILLING
- WORKOVER
- COMPLETION
- HELICOPTER
- MOTOR VESSEL
- PIPELINE SEGMENT NO.
- OTHER crane and boat operations

5. PLATFORM: B

RIG NAME:

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

8. CAUSE:

7. TYPE:

- HISTORIC INJURY
- REQUIRED EVACUATION 3
- LTA (1-3 days)
- LTA (>3 days)
- RW/JT (1-3 days) 2
- RW/JT (>3 days)
- Other Injury 1 First Aid

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

- FATALITY
- POLLUTION
- FIRE
- EXPLOSION

- 9. WATER DEPTH: 450 FT.
- 10. DISTANCE FROM SHORE: 17 MI.
- 11. WIND DIRECTION: N
SPEED: 31 M.P.H.
- 12. CURRENT DIRECTION: NW
SPEED: M.P.H.
- 13. SEA STATE: 6 FT.

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

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

17. INVESTIGATION FINDINGS:

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1. Personnel transfer was being made from the back deck of the Motor Vessel (M/V) Patience Lab with the use of the four Man Billy Pugh Personnel Basket onto the South Pass (SP) 93 B Platform. The M/V Patience Lab is a 130 foot offshore support vessel with GPS steering control which maintained its position on the north side of the platform.
2. A sudden gust of wind caused the crane boom and the basket to swing just as the four riders stepped on to the basket causing it to lift and drag along the deck until it swung into the side of the boat railing/ bullwork.
3. The crane operator attempted to lock the swing brake, but it would not hold. He then attempted to raise the personnel basket, while swinging the boom in the opposite direction, so it would not hit the railing. But the basket hit in spite of his attempts. Three of the riders managed to jump off as the basket swung and hit the boat railing, while the fourth rider held on as it crashed into the bullwork and then lifted up over the railing and swung over and hit the platform. Personnel were able to get him off the basket about 15 minutes later after the vessel maneuvered under the basket and the crane operator lowered the basket back down onto the boat.
4. The crane was taken out of service immediately after the fourth rider was lowered back down onto the back deck of the M/V. The injured, as well as the entire construction crew on the boat, were sent in for medical evaluation. Three personnel were injured: one Industrial & Oilfield Services (IOS) Construction Consultant, one Fluid Crane Superintendent, and one Deckhand on the boat.
5. The BSEE investigation determined that the crane's hydraulic swing gear motor (slew drive system) had failed. The mounting bolts that secured it to the cab base had backed out and resulted in a structural failure of the swing gear drive housing, which made the motor insecure and allowed it to 'cock sideways' when operated and prevented any control of swing movement.
6. A lieutenant with the USCG met the M/V Patience Lab at the Energy XXI Dock in Grand Isle on the day of the incident and gathered statements.
7. During the follow up BSEE investigation on 1/28/2017, while observing the crane pre-inspection procedures, the Investigator noticed the hydraulic swing gear motor moving as the operator attempted to swing the boom. The procedure was immediately stopped and under closer inspection, the securing bolts were detected as sheared or missing.
8. A later inspection by a Sparrows Crane Mechanics verified that the swing drive housing had a structural failure where the bolts mounted it to the crane body.
9. The Sparrows Crane Mechanics removed, rebuilt, reinstalled and tested the swing gear motor.

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

1. The condition of the mounting bolts being backed out of the slew drive system (hydraulic swing gear motor) went undetected. The condition of the bolts coming loose over a long period of time went without notice allowing the housing failure to occur. An inspection of the bolts is not part of the normal daily pre-use, quarterly, or annual inspection. To detect abnormal movement of the hydraulic motor requires two personnel, a crane operator and an observer, while in operation.
2. Without the hydraulic motor secured, due to the bolts backing out and subsequent failure of the motor housing, a misalignment with the gears was created. There was a complete lack of control of boom swing movement. The complete failure of the motor housing happened during the personnel lift.

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

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1. Sea conditions were three to five feet with an occasional six feet out of the North/West.
2. Winds conditions were 22 to 27 kts. gusting out of the North.
3. The boom angle used during the lift made it susceptible to be affected by gusting winds.
4. Had the slew drive system failed not due to the bolts backing out, the contributing causes mentioned above would had not been a factor. Normal crane operations can be successful under these same weather conditions.
5. Third party crane inspection contractor had no written process addressing the swing gear housing bolts.
6. Not all bolts on the swing gear drive housing are easily accessible or visible due to the design.

20. LIST THE ADDITIONAL INFORMATION:

1. Immediately after the incident, the crane at SP 93 B was placed out of service. The M/V went to SP 93 A (15 miles away) to attempt to take personnel off at that location. However, it was determined that the weather conditions were not favorable to transfer personnel at that time.
2. The injuries sustained by personnel appeared to be non-life threatening, so the decision was made to send the M/V to the GI Shore Base 3-1/2 hrs away with the entire crew on board.
3. The extent of the injuries were: The deckhand only required first aid and returned to work the same day. The IOS Inspector went on days off and returned back to work after his 14 days off. Energy XXI classified this as Recordable Restrictive Work. The construction superintendent was released by the company doctor, but never returned to work.
4. The crane operator at SP 93 B as well as the deckhand are to be commended for their actions to prevent greater injuries to personnel once the slew drive system failed.
5. The platform crane at SP 93 B was a Titan, Model T5400B with 100 ft. boom. The basket was a 4-Man Billy Pugh.
6. The crane was safely returned to the platform boom rest without further incident.
7. Approval to put the crane back in service was requested and authorized by BSEE once the motor had been repaired, tested and met a punch list of requests by the BSEE Supervisor.
8. The last annual crane inspection prior to the incident was 2/16/2016.
9. The last quarterly inspection prior to the incident was 11/10/2016.

21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

Crane Hydraulic Swing Gear Motor (slew drive system)

Internal and External damages

ESTIMATED AMOUNT (TOTAL):

\$12,314

22. RECOMMENDATIONS TO PREVENT RECCURANCE NARRATIVE:

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1. The decision was made to repair and reinstall the current 4 bolt swing gear motor installation and then it was replaced with a 10 bolt pattern. Ensuring greater stability and security.

2. A Gulf wide alert was initiated by Energy XXI to ensure that no other platforms under their supervision would be susceptible to this type of incident. Revision of the annual and quarterly inspection process was incorporated with specific details questioning bolt types, torque values and condition of swing drive bolts, finalized 6/1/2017.

3. A Gulf wide alert provided industry wide by BSEE to ensure other companies are not susceptible to this similiar setup.

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

No INCs issued at this time

25. DATE OF ONSITE INVESTIGATION:

28-JAN-2017

26. ONSITE TEAM MEMBERS:

Gerald Taylor /

28. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

29. DISTRICT SUPERVISOR:

David Trocquet

APPROVED

DATE:

01-SEP-2017