UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

1. OCCURRED
   DATE: **16-OCT-2016** TIME: **0930** HOURS

2. OPERATOR: **BP Exploration & Production Inc.**
   REPRESENTATIVE:
   TELEPHONE:
   CONTRACTOR: **OCEANEERING INTERNATIONAL**
   REPRESENTATIVE:
   TELEPHONE:

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

4. LEASE: **G15610**
   AREA: **GC** LATITUDE:
   BLOCK: **782** LONGITUDE:

5. PLATFORM:
   RIG NAME: **MAD DOG SPAR RIG**

6. ACTIVITY:
- [ ] EXPLORATION(POE)
- [X] DEVELOPMENT/PRODUCTION (DOCD/POD)

7. TYPE:
- [ ] HISTORIC INJURY
- [X] REQUIRED EVACUATION **1**
- [ ] LTA (1-3 days)
- [ ] LTA (>3 days
- [ ] RW/JT (1-3 days)
- [X] 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

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

6. OPERATION:
- [ ] PRODUCTION
- [ ] DRILLING
- [ ] WORKOVER
- [ ] COMPLETION
- [ ] HELICOPTER
- [ ] MOTOR VESSEL
- [ ] PIPELINE SEGMENT NO.
- [X] OTHER **Maintenance of ROV**

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

9. WATER DEPTH: **4420** FT.

10. DISTANCE FROM SHORE: **128** MI.

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

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

13. SEA STATE: FT.

17. INVESTIGATION FINDINGS:

On October 16, 2016, on board the B.P. Mad Dog Spar Rig in Green Canyon block 782, an Oceaneering Remotely Operated Vehicle (ROV) Technician was injured while assisting with lowering the foam block onto the ROV. The foam block was an upgrade to the lift tube fasteners as required by ROV Technical Bulletin #309. The Injured Person (IP) was sent in on a medivac helicopter to be treated for the amputation of the distal tip on his right ring finger.

While performing an upgrade on the ROV, the Oceaneering ROV Supervisor contacted the Deck Foreman (DF) and requested assistance from the west crane to re-install the ROV float block. A pre job walk around and a job safety analysis (JSA) was performed with the following personnel involved with the operation: Crane Operator, Banksman, (2) Roustabouts, Oceaneering ROV Supervisor, and an Oceaneering ROV Technician. The JSA included discussion of the lifting path, maintaining a safe distance from the load, and the Red Zone Policy. During the JSA and pre job discussion, it was identified that they were short one Roustabout for the lift, but they decided to proceed without the third Roustabout. Also, they discussed the location for safe hand placement when the Roustabouts would have to put their hands on the foam block to guide it onto the ROV lifting sleeves. The Red Zone Policy stipulates that only ENSCO personnel should be in the immediate area around the lift, and third party personnel are not to participate in the lift. They can help monitor the lift, but they are not to assist. As per the Red Zone Policy, the Oceaneering ROV crew was instructed to stand clear of the lift and not to participate in the task.

The foam block hung up on the ROV lifting tubes when the crane slacked off of the load. The Oceaneering ROV crew was asked to visually inspect what the foam block was hanging up on, and they determined that it was becoming caught on the tubes due to tight tolerance of the foam block sleeve. At this time, the foam block was lifted off of the ROV and the lift tubes were greased to ease the installation. The ENSCO crane crew acknowledged that this task would require the team to touch the foam block, so they stopped the job to discuss the additional hazard of having to place their hands on the load during the lift. Upon the second attempt to install the foam block on the lift tubes, the block continued to hang up. The Banksman then asked the ROV Supervisor to assist the Roustabout on the west side of the foam block to guide it over the lift tubes. The Roustabout recognized this as a hazard and discussed safe hand positioning with the ROV Supervisor. The ROV Supervisor instructed the nearby ROV Technicians to move further away and stand back from the load. The Roustabout and ROV Supervisor began rocking the foam block assembly to free it up from the lift tubes. Shortly after this, the ROV Technician, out of the line of sight of the ROV Supervisor, approached from the opposite side of the foam block assembly and began assisting in rocking the foam block. The float block then mated with the ROV lifting tubes and the ROV Technician's right ring finger became caught between the float block tunnel panel doors resulting in the amputation of the distal tip of the right ring finger. The IP was evaluated by the Rig Medic then transported by a medivac helicopter to a hospital for further treatment.

The Bureau of Safety and Environmental Enforcement (BSEE) Inspectors conducted an inspection/investigation on October 19, 2016 and collected documentation for the incident. In the investigation, it was determined that the team conducting the lift was one Roustabout short which is why the ROV Supervisor was requested to assist. The original lift plan required Oceaneering personnel to stand clear of the lift and not assist, which would have been consistent with ENSCO's Red Zone Policy. In the future, Oceaneering ROV Personnel will be prohibited from participating in third party lifts and they must use Stop Work Authority and Management of Change (MOC) process, if requested. Additionally, ENSCO crane crews will be re-educated on Proper Red Zone management and this will further emphasize that third party crews are not to participate in crane lifts.

The investigation also determined that the procedure sent out with the Technical Bulletin for the upgrade was an obsolete version of the instructions for the team to remove the foam block as a complete assembly. The newer, correct revision instructs that the lift occur with the foam block disassembled in three separate components. This eliminates flex during the lift and the block is easier to reinstall. The tunnel panel doors are removed as well, eliminating the pinch point. The Technical Bulletin instructions will be suspended until the correct, updated revision of the procedure and work instructions are distributed. Had the correct version of work instructions been sent with the technical bulletin, the pinch point would not have existed.

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

1) Failure to follow company policy: The crew carrying out the ROV upgrade failed to follow ENSCO's Red Zone Policy which does not allow for third party personnel to participate in lifting tasks.

2) The lifting crew was short one Roustabout. The ROV crew was not experienced in lifting tasks, and should not have participated in the lift. A properly trained Roustabout should have been used as per the original lift plan.

3) The wrong procedure was sent out with the Technical Bulletin: If the correct procedure had been sent and used, the pinch point would not have existed.

4) Failure to follow supervisory instruction: The ROV Technician's failure to follow the ROV Supervisor's instructions to stand clear of the lift and not participate in the lift placed him in harms way.

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

1) Lack of Awareness: The IP failed to recognize the pinch point when he placed his hands on the lift.

20. LIST THE ADDITIONAL INFORMATION:

21. PROPERTY DAMAGED: NATURE OF DAMAGE:

n/a **n/a**

ESTIMATED AMOUNT (TOTAL):

22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

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

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

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

19-OCT-2016

26. ONSITE TEAM MEMBERS:

Paul Reeves /

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

OCS REPORT:

30. DISTRICT SUPERVISOR:

Bryan Domangue

APPROVED DATE: **01-FEB-2017**