UNITED STATES DEPARTMENT OF THE INTERIOR MINERALS MANAGEMENT SERVICE GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

| 1. OCCURRED DATE: 21-MAR-2008 TIM 2. OPERATOR: Shell Offsho REPRESENTATIVE: DiCar TELEPHONE: (504) 728- CONTRACTOR: REPRESENTATIVE: TELEPHONE: | re Inc. lo, Theresa | 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 REPRES ON SITE AT TIME OF INCI | - | 6. OPERATION: |
| 4. LEASE: AREA: WD LATITUI BLOCK: 143 LONGITU 5. PLATFORM: A-PROCESS RIG NAME: | | PRODUCTION DRILLING WORKOVER COMPLETION HELICOPTER MOTOR VESSEL PIPELINE SEGMENT NO. OTHER |
| 6. ACTIVITY: EXPLORATI | ON(POE) | 8. CAUSE: |
| (DOCD/POI 7. TYPE: HISTORIC INJURY REQUIRED EVACUATION LTA (1-3 days) X LTA (>3 days RW/JT (1-3 days) RW/JT (>3 days) | • | EQUIPMENT FAILURE HUMAN ERROR EXTERNAL DAMAGE SLIP/TRIP/FALL WEATHER RELATED LEAK UPSET H2O TREATING OVERBOARD DRILLING FLUID OTHER |
| ☐ Other Injury ☐ FATALITY | | 9. WATER DEPTH: 369 FT. |
| X POLLUTION FIRE EXPLOSION | | 10. DISTANCE FROM SHORE: 18 MI. |
| LWC HISTORIC BLOWOUT UNDERGROUND | | 11. WIND DIRECTION: SPEED: M.P.H. |
| SURFACE DEVERTER SURFACE EQUIPMENT E | AILURE OR PROCEDURES | 12. CURRENT DIRECTION: SPEED: M.P.H. |
| COLLISION HISTORIC | □ >\$25K □ <=\$25K | 13. SEA STATE: FT. |

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17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

On March 21, 2008, at 1105 hours, on Shell Offshore Inc.'s, Right of Way (ROW) OCS-G 15988, West Delta (WD) Block 143 A-Process Platform, Complex No. 23846, an employee was injured while investigating a glycol leak. The Injured Person (IP) observed glycol leaking from a 1" line approximately 8' above the deck. The IP used a step ladder to access the area and began removing insulation to expose the leak. At that point, a 1" valve on the leaking glycol line came free exposing the IP to the hot glycol. The IP jumped off of the ladder, in an attempt to escape the hot glycol and suffered a broken ankle and 1st and 2nd degree burns to his upper body. The operator did not isolate or shut-in and bleed down the unit before investigating the leak. The IP was not wearing the proper Personal Protective Equipment (PPE) when exposing hot surfaces to avoid burns. As a result of the incident, 70 bbls of monoethylene glycol (MEG) was spilled into the Gulf of Mexico. The Glycol Regeneration Unit (GRU) was shut down and barricaded. The valve was sent to Shell's Westhollow Research Center for analysis. Initial findings suggest corrosion due to high pH from caustics introduced into the system.

An onsite accident investigation on March 25, 2008, resulted in an issuance of two "After the Fact" Incidents of Noncompliance (INCs).

G-111 -Failure to maintain equipment in a safe condition. There was external corrosion on the MEG system and internal corrosion on the galvanized nipple installed on heat exchanger HAP-513.

E-100 - Failure to prevent pollution of offshore waters. 70 bbls of MEG discharged overboard.

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

External corrision on MEG system and internal corrision on galvanized nipple. Failure to shut-in and bleed down equipment.

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

The nipple that failed was galvanized steel not carbon. High amounts of caustic probably contributed to the corrision of the nipple. Galvanized steel is more prone to corrision.

20. LIST THE ADDITIONAL INFORMATION:

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21. PROPERTY DAMAGED:

NATURE OF DAMAGE:

None None

ESTIMATED AMOUNT (TOTAL):

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22. RECOMMENDATIONS TO PREVENT RECURRANCE NARRATIVE:

The New Orleans District makes no recommendations to MMS.

- 23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: YES
- 24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

G-111 -Failure to maintain equipment in a safe condition. There was external corrosion on the MEG system and internal corrosion on the galvanized nipple installed on heat exchanger HAP-513.

E-100 - Failure to prevent pollution of offshore waters. 70 bbls of MEG discharged overboard.

- 25. DATE OF ONSITE INVESTIGATION:
- 26. ONSITE TEAM MEMBERS:

29. ACCIDENT INVESTIGATION PANEL FORMED: NO

OCS REPORT:

30. DISTRICT SUPERVISOR:

Troy Trosclair

APPROVED

DATE: 09-MAY-2008

12-MAY-2008

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POLLUTION ATTACHMENT

| 1. | VOLUME: | GAL | 70 | BBL | | | |
|-----|---|---|---------------|---------|------------------------|--|--|
| | | YARDS LONG X | | YARDS | WIDE | | |
| | APPEARANCE: | | | | | | |
| 2. | TYPE OF HYDROCARB | ON RELEASED: | OIL | | | | |
| | | | DIESI | EL | | | |
| | | | CONDI | ENSATE | | | |
| | | | HYDR <i>I</i> | AULIC | | | |
| | | | NATUF | RAL GAS | 3 | | |
| | | x | OTHER | Non | oethylene Glycol (MEG) | | |
| 3. | . SOURCE OF HYDROCARBON RELEASED: Glycol Unit | | | | | | |
| 4. | WERE SAMPLES TAKE | N? NO | | | | | |
| 5. | 5. WAS CLEANUP EQUIPMENT ACTIVATED? NO | | | | | | |
| | IF SO, TYPE: | SKIMMER CONTAINMENT BO ABSORPTION EQU DISPERSANTS OTHER | | | | | |
| 6. | ESTIMATED RECOVER | Y: 6 | BAL | | BBL | | |
| 7. | RESPONSE TIME: | HOURS | | | | | |
| 8. | 3. IS THE POLLUTION IN THE PROXIMITY OF AN ENVIRONMENTALLY SENSITIVE AREA (CLASS I)? NO | | | | | | |
| 9. | . HAS REGION OIL SPILL TASK FORCE BEEN NOTIFIED? NO | | | | | | |
| 10. | . CONTACTED SHORE: NO IF YES, WHERE: | | | | | | |
| 11. | . WERE ANY LIVE ANIMALS OBSERVED NEAR: NO | | | | | | |
| 12. | WERE ANY OILED OR DEAD ANIMALS OBSERVED NEAR SPILL: NO | | | | | | |

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