

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

1. OCCURRED
DATE: **15-MAR-2005** TIME: **1105** HOURS

2. OPERATOR: **Eni Petroleum Co. Inc.**
REPRESENTATIVE: **Dave Dougall**
TELEPHONE: **(713) 393-6122**

3. LEASE: **G12145**
AREA: **EW** LATITUDE:
BLOCK: **965** LONGITUDE:

4. PLATFORM:
RIG NAME **T.O. AMIRANTE**

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

6. TYPE: FIRE
 EXPLOSION
 BLOWOUT
 COLLISION
 INJURY NO. 0
 FATALITY NO. 0
 POLLUTION
 OTHER **Marine Riser Disconnect**

7. OPERATION: PRODUCTION
 DRILLING
 WORKOVER
 COMPLETION
 MOTOR VESSEL
 PIPELINE SEGMENT NO. _____
 OTHER **Testing BOP's**

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

9. WATER DEPTH: **1750** FT.
10. DISTANCE FROM SHORE: **83** MI.
11. WIND DIRECTION: **S**
SPEED: **9** M.P.H.
12. CURRENT DIRECTION: **W**
SPEED: **1** M.P.H.
13. SEA STATE: **7** FT.
16. OPERATOR REPRESENTATIVE/
SUPERVISOR ON SITE AT TIME OF INCIDENT:
Tom Gennings
CITY: **Houston** STATE: **TX**
TELEPHONE: **(713) 393-6188**
CONTRACTOR: **Transocean Offshore**
CONTRACTOR REPRESENTATIVE/
SUPERVISOR ON SITE AT TIME OF INCIDENT:
Dewey Samson
CITY: **Houston** STATE: **TX**
TELEPHONE: **(713) 232-8202**

17. DESCRIBE IN SEQUENCE HOW ACCIDENT HAPPENED:

On March 15, 2005, at 11:05 a.m., the Transocean Amirante semi-submersible rig experienced an unplanned BOP riser disconnect of the Vetco H-4 wellhead connector from the subsea tree during BOP testing operations on the Ewing Bank 965 # 2 ST 3 Well. Some equipment damage occurred when the outer barrel of the slip joint moved upwards and struck the inner barrel. The upward force caused minor damage to part of the diverter locking dog profile flange that holds the diverter dogs. There was no fire or release of fluids of any kind as the riser was full of seawater at the time. There were no injuries, illnesses or environmental spills reported during or after the incident. The investigation team concluded that two hydraulic hoses were inadvertently crossed between the wellhead connector lock and unlock shuttle valves and blue pod receptacle during BOP testing operations on the stump.

Findings:

The investigation found that hydraulic hoses for the blue pod latch and unlatch functions had been cross connected, resulting in both blue and yellow pods competing with each other during function testing operations. Hydraulic hose # 28 (wellhead latch) was connected to port # 52 (wellhead primary unlatch) on the pod receptacle; hose # 52 (wellhead primary unlatch) was connected to port # 28 (wellhead latch) on the pod receptacle.

A BOP test stinger was not used for testing both pods. Transocean used a test stinger on the yellow pod side, but not on the blue pod side. To avoid the time and safety issues associated with the height of the blue pod and changing out the hose to the test stinger, Transocean rigged up temporary "hot lines" to test the connector from the blue pod side. By disconnecting hoses and connecting the hot lines directly into the shuttle valves, the opportunity was created for the inadvertent crossed hoses.

Metal tags with the wrong function identification (wellhead latch and unlatch) were previously installed on the fittings connected to the receptacle before the rig was stacked for several years. The correct identification was stamped on the receptacle itself. The rig crew did not verify if the tags were in the correct location.

The ability to visually inspect the H-4 connector function test with the BOP's hanging in the moonpool was limited. The rig crews witnessed the wellhead connector indicator rod movement by attempting to look through the main deck grating at an angle. It was difficult to get a good view of the indicator rod since it is located under a lower pipe ram bonnet. An alternative method is to send a person down along side the BOPs in a riding belt to visually verify indicator rod movement.

Because the hydraulic hoses were crossed, the function test of the Vetco H-4 connector took an unusually long period of time, and the rig crew did not wait for the entire function test to complete to verify its proper function. The Amirante uses an old style all-hydraulic BOP control system (i.e. no Mux electronic controls). The pilot valves in both pods were thus activating simultaneously, preventing both pods from operating properly. It took 4 to 5 minutes for the connector to react due to the opposing pressures resulting from the crossed hoses.

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

- 1) The hydraulic hoses for the blue pod latch and unlatch functions had been cross connected, resulting in both blue and yellow pods competing with each other during function testing operations.
- 2) A BOP test stinger was not used for testing both pods.
- 3) Metal tags with the wrong function identification. The correct identification was stamped on the receptacle itself. The rig crew did not verify if the tags were in the correct location.

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

- 1) The ability to visually inspect the H-4 connector function test with the BOP's hanging in the moonpool was limited.
- 2) Because the hydraulic hoses were crossed, the function test of the Vetco H-4 connector took an unusually long period of time, and the rig crew did not wait for the entire function test to complete to verify its proper function.

21. PROPERTY DAMAGED: NATURE OF DAMAGE:
Diverter Housing, Locking Pins and Dogs, Twisted and distorted metal.
and Upper Seal
Drape Jumper Hose for Choke Line
Nu-Tec Test Joint

ESTIMATED AMOUNT (TOTAL): \$90,000

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

The New Orleans District recommends to the Office of Safety Management that a "Safety Alert" be developed to alert industry of the incident and recommend that they review the adequacy of their current policy for Stump Test on subsea BOP system, to include alternate tests between control stations and pods.

The New Orleans District concurs with Eni Petroleum recommendations to prevent recurrence as stated below:

- 1) Maintain an accurate continuous record of all hydraulic fluid gallon counts for monitoring the BOP testing operations. (Completed as of April 6, 2005)
- 2) During BOP function and pressure testing on the stump all functions should be operated through the test stinger to confirm the hoses are installed appropriately on both pod receptacles. (Will do each time BOP is stump tested)
- 3) Remove the identifying tags used to identify functions. Since they are not permanently mounted they can be easily placed incorrectly. (Completed as of April 6, 2005)
- 4) As rig operations permit, the remote indicator on the connector should be modified by installing a flag at the receiver plate hooked up by a cable system. This will make it much easier to visually confirm the connector function test. (Will complete during next rig move)
- 5) Allow for sufficient time during the final function test of the BOPs to confirm full and proper operation of the BOPs and control system. Conduct a full function test prior to each deployment of the BOP stack. Thorough function testing of each function from each control location while in the moonpool is the last opportunity to identify crossed hoses or any other functional discrepancies. Function testing should include verification of each component through the volume counts and visually noting full travel of any indicators. (Completed as of April 6, 2005)

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: NO

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

25. DATE OF ONSITE INVESTIGATION:

17-MAR-2005

26. ONSITE TEAM MEMBERS:

Stephen Lucky / Randall Josey /

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

OCS REPORT:

30. DISTRICT SUPERVISOR:

Troy Trosclair

APPROVED

DATE: **09-MAY-2005**