



Title:

DEEPWATER HORIZON EMERGENCY RESPONSE MANUAL VOLUME 1 of 2

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— WELL CONTROL/SHALLOW GAS BLOWOUT			

1 INTRODUCTION

This section describes the organizational structure, responsibilities, and duties of personnel during a Hydrocarbon (HC) gas emergency.

1.1 LEVELS OF WELL CONTROL EMERGENCIES ARE DEFINED BELOW:

- Level 1 Any kick situation.
All parties are advised of the emergency.
Well control procedures are underway.
- Level 2 Further analysis of a Level 1 situation with continued adverse development now indicates that available equipment might not control the well. Calculations show that certified pressure capacity of the casing or BOP equipment may be exceeded during control procedures.
- Level 3 An uncontrolled well (blowout).
Control can no longer be exercised from the MODU.
The only course of action is to move or to evacuate the MODU.
One course is selected and followed immediately.
Moving would be a definite option as the Deepwater Horizon is a self-propelled DP unit without anchors
One course is selected and followed immediately

1.2 ALARM SIGNAL

- Level 1 Verbal communication to all personnel.
- Level 2 Verbal communication to all personnel.
- Level 3 Rig whistle and alarm: a series of one long and one short ring on the vessel alarm. Announcement made over PA system.

2 DETECTION


Detection of a kick (intrusion of liquid or gas into the wellbore) is the responsibility of the Driller. The Driller and his crew will continuously monitor the surface system indicators (flow rate, pit level, etc.) and break downhole indications, such as mud pressure, rate of penetration (drilling break), etc., for signs of a kick. Upon detecting a kick, the Driller is trained to shut the well in quickly. In fact, the speed with which this is accomplished will determine the severity of the situation.

Factors such as excessive shut in casing pressure, may lead the Operator's Senior Representative and the Offshore Installation Manager (OIM) to realize the treatment of a given kick will not be routine. In such a case, they will decide to declare a Level Two Alert.

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3 MONITORING

3.1 MONITORING BY MUD LOGGER

The Mud Logging Company personnel will constantly monitor the level of gases in the drilling fluid. They will keep the Toolpusher, Drill Crew, and Operator's Senior Representative informed of gas concentrations in the drilling fluid regularly.

At the first indication that H₂S (or other HC gases) are present in concentrations that could be dangerous, he will notify the Driller, Toolpusher, and the Operator's Senior Representative, in that order. From the time of this first warning, the OIM will announce a Level One (localized) Gas Emergency Condition.

3.2 MONITORING BY DRILL

A Mud Logging Readout panel is in the Driller's House and the Driller continuously monitors this remote panel. If a gas emergency is detected, the Driller will alert the Toolpusher and personnel in the affected area.

4 CONTROL MEASURES

The remainder of this section describes the responsibilities and duties of personnel in a developing Well Control Emergency, making only general reference to control procedures. Actual control procedures are the subject of Transocean and Operator's Well Control Policies.

5 RESPONSIBILITY

5.1 PERSONNEL WITHOUT SPECIFIC DUTIES:

5.1.1 GENERAL

- A. Be familiar with contents of this section in particular with alarm signals and required response.
- B. Act as directed by OIM.

5.1.2 LEVEL ONE

- A. Stand by for instructions.
- B. Stop all burning or welding and any use of open flame.
- C. Fueling Operations are to be suspended.


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5.1.3 LEVEL TWO

- A. Report to the Muster Station for roll call.
- B. If partial evacuation is ordered, evacuate as directed.
- C. Stand by for further orders on evacuation.

5.1.4 LEVEL THREE

- A. Abandon Unit as ordered.
- B. See duties as defined in Section 10, "Abandon Unit."

5.2 OIM:

5.2.1 GENERAL

- A. Ensures the safety of personnel and MODU.
- B. Monitors well control activities and consults the Operator's Senior Representative if necessary. Orders and ensures all notifications to the Operator and Transocean shore-based personnel are made at appropriate times.
- C. Requests Master to initiate evacuation or retreat procedures, if required.

5.2.2 LEVEL ONE


- A. Declares a Level One Alert upon being advised of a Level One emergency. Announce to all personnel that a Level One Alert is in effect and ordering the CCR to repeat the announcement at regular intervals.
- B. Proceeds to the drill floor with the Operator's Senior Representative and evaluates the extent of the emergency.
- C. Proceeds with the well control procedures as outlined by the Company and the Operator's policies alongside the Operator's Senior Representative.
- D. Determines if non-essential personnel should be evacuated, with the assistance of the Master, Operator's Senior Representative and the Senior Toolpusher and Toolpusher.

5.2.3 LEVEL TWO

- A. Has the CCR announce Level Two conditions on the PA system.
- B. Have all non-essential personnel gather life jackets, PPE and go to their muster stations.
- C. Has all non-essential personnel and galley personnel prepare to leave the MODU.

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- D. Notifies shore-based personnel of Level Two conditions. Shore-based personnel may be required to alert the air/sea rescue group in case of an emergency.
- E. Prepares to move the MODU, if necessary.
- F. Has the Supply Vessel, after taking aboard all personnel not actively engaged in well control operations or MODU handling, move off and stand upwind of MODU.
- G. Advises personnel that danger has passed if the well is controlled, and prepares to take on personnel.

5.2.4 LEVEL THREE

- A. Advises Master to Initiate "Abandon Unit." (See Section 10.)

5.3 OPERATOR'S SENIOR REPRESENTATIVE:

5.3.1 GENERAL

- A. Helps the OIM/Master ensure overall safety of the MODU and crew.
- B. Assists the OIM on well control procedures.
- C. Notifies Operator's shore-based management.

5.3.2 LEVEL ONE

- A. Proceeds to the Drill Floor and, with the Senior Toolpusher/Toolpusher, to evaluate the extent of the emergency.
- B. Consults with the OIM, Senior/Toolpusher and Operator's shore-based management to decide appropriate well control procedures for the situation.

5.3.3 LEVEL THREE

- A. Executes any duties described in Section 10

5.4 TOOLPUSHER:

5.4.1 GENERAL


- A. Evaluates the extent of the emergency.
- B. Directs well control procedures.

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-- WELL-CONTROL/SHALLOW-GAS BLOWOUT			

5.4.2 LEVEL ONE

- A. Proceeds to the Drill Floor to evaluate the extent of the emergency.
- B. Analyzes the situation and consults with both the Operator's Senior Representative and the OIM, to decide which well control procedure is to be used.
- C. Directs Drill Crew in the execution of well control procedures.

5.4.3 LEVEL THREE

- A. Advises the OIM immediately that Level Three Conditions exist.
- B. Executes duties described in Section 10 "Abandon Unit"

5.5 DRILLER:

5.5.1 GENERAL

- A. Observes all signs of intrusion of fluids/gases into well bore and responds quickly with shut in procedure.
- B. Advises OIM and Toolpusher that a possible emergency exists.
- C. Follows orders of the OIM and Toolpusher to direct activities of Drill Crew in control procedures.

5.5.2 PRE-LEVEL ONE

- A. Shuts well in when kick detected.
- B. Alerts OIM and Toolpusher to the situation.

5.5.3 LEVEL ONE AND TWO:

- A. Directs activities of the Drill Crew as they execute control procedures as ordered by the OIM and Toolpusher.
- B. Under Level Three Well Control Emergency Control alarm.
- C. Directs the Crew in Abandon Unit duties as described in Section 10.

5.6 DRILL CREW:

5.6.1 GENERAL


- A. Controls Well Control hazard as ordered by the Driller.

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5.6.2 LEVEL ONE

- A. Assists as directed in Well Control activities.
- B. Continues suppression activities until ordered to conduct an evacuation, or situation returns to normal.

5.6.3 LEVEL TWO

- A. Assists as directed in Well Control activities.
- B. Continues suppression activities until ordered to conduct an evacuation, or situation returns to normal.

5.6.4 LEVEL THREE

- A. Exercises Abandon Unit duties.

5.7 SUBSEA ENGINEER:

5.7.1 GENERAL

- A. Assists the Well Control operation under the direction of the OIM and Toolpusher.
- B. Under Level One Well Control Emergency Alarm:
- C. Proceeds to the rig floor, monitors equipment and operates subsea equipment functions as directed by the Senior Toolpusher or OIM.

5.7.2 LEVEL TWO

- A. Continues efforts to control the well unit until the safety of the crew is in question, or the well is under control.

5.7.3 LEVEL THREE

- A. Executes any duties as described in Section 10, Abandon Unit.

5.8 CCR:

5.8.1 GENERAL

- A. Notifies the Company, the Operator's shore-based management, and the Rescue Center of emergency developments when directed by the OIM/Master.


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5.8.2 LEVEL ONE

- A. Advises the Operator's and the Company's shore-based personnel of Level One Alert when so ordered by the OIM/Master.

5.8.3 LEVEL TWO

- A. Advises the Operator's and the Company's shore-based personnel of Level Two Alert when so ordered by the OIM/Master.

5.8.4 LEVEL THREE

- A. Executing any duties described in Section 10 when the OIM/Master orders Abandon Unit.

5.9 MUD LOGGER:

5.9.1 GENERAL

- A. Monitors gas concentrations, and well monitoring equipment.
- B. Under normal operations, continuously monitors gas concentrations in drilling fluid.

5.9.2 LEVEL ONE

- A. Advises the Driller and Toolpusher of abnormal readings on gas or well monitoring equipment.

5.9.3 LEVEL TWO

- A. Continues to monitor gas concentrations and well monitoring equipment, until ordered to evacuate.

5.9.4 LEVEL THREE

Exercises Abandon Unit procedures, or stands by or orders.


5.10 RSTT/MEDIC:

5.10.1 GENERAL

- A. Administers first aid as required.
- B. Assists the OIM as directed.

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5.10.2 LEVEL ONE

- A. Stands by at the hospital.
- B. Treats injured Personnel.

5.10.3 LEVEL TWO

- A. Continues first aid/medical activities until ordered to evacuate by the Master.
- B. Directs transport of disabled persons during evacuation.

5.10.4 LEVEL THREE

- A. Exercises Abandon Unit duties.

5.11 CHIEF ENGINEER:

5.11.1 GENERAL:

- A. Assists OIM as directed.

5.11.2 LEVEL ONE

- A. Assists the OIM with technical support and communications.
- B. Directs departments to close all hatches and vents to the affected areas.

5.11.3 LEVEL TWO

- A. During partial evacuations, remains on board and assists the OIM/Master.
- B. Prepares for Abandon Unit if so ordered by the Master.

5.12 CRANE OPERATOR:

5.12.1 GENERAL

- A. Assists as directed during the emergency.

5.12.2 LEVEL ONE

No specific duties.


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5.12.3 LEVEL TWO

- A. Acts as directed by the Toolpusher or Deck Pusher, e.g.; manning upwind crane if so ordered for partial evacuation.

5.12.4 LEVEL THREE

- A. Exercising Abandon Unit duties.

5.13 MUD ENGINEER:

5.13.1 GENERAL

- A. Monitors mud properties.

5.13.2 LEVEL ONE

- A. Monitors mud density and other properties.
- B. Runs tests on mud while circulating.

5.13.3 LEVEL TWO

- A. Assists as directed by the Toolpusher and/or Company Representative.

5.13.4 LEVEL THREE

- A. Exercises Abandon Unit duties.


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6 PARTIAL EVACUATION LIST

The list below represents the minimum complement that will remain on board if a partial evacuation is advised by the OIM and ordered by the Master.

- 1 – OIM
- 1 – Master
- 1 – Chief Mate
- 2 – Senior DPO/2nd Mate
- 2 – DPO/3rd Mates
- 1 – Operator's Senior Representative
- 1 – Senior Toolpusher
- 1 – Toolpusher
- 1 – Driller
- 1 – Assistant Driller
- 1 – Derrickman
- 1 – Subsea Engineer
- 1 – Deck Pusher
- 1 – Crane Operator
- 1 – Chief Engineer
- 1 – First Assistant Engineer
- 2 – 2nd Assistant Engineers
- 2 – Motormen
- 1 – Mechanical Supervisor
- 1 – Chief Mechanic
- 1 – Electrical Supervisor
- 1 – Chief Electrician
- 1 – Chief Electronic Technician
- 1 – Boatswain
- 2 – Able Seamen


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1 – RSTC or RSTT

1 – Mud Engineer

1 – Cementer

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