

GENERAL INSTRUCTION MANUAL

Issuing Org.: Drilling and Workover

ISSUE DATE
05/01/2015REPLACES
11/13/2011

Subject: Onshore Emergency Response - Roles and Responsibilities

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1 OF 14**Scope**

This General Instruction (G.I.) outlines the Drilling and Workover (D&WO) emergency response roles and responsibilities for onshore Well-Control emergency or when a Producing Organization has turned over responsibility for well control operations to the D&WO Organization.

This document specifically addresses the following Onshore Emergency Response Operations Management Elements:

1. Objective
2. Implementation
3. Organization
4. Well Control
5. Cost Accounting
6. Support Services
7. Documenting and Critique
8. Drills / Training Exercises

Appendices**No.1 - Roles and Responsibilities****No.2 - Roles and Responsibilities, Support Organizations****No.3 - D&WO Incident Command Structure (ICS)****1. Objective**

This G.I. will serve as the basis for the development of a D&WO Onshore Emergency Response Plan (ERP), which complies with the applicable requirements of the Saudi Aramco Safety Management System (SMS) Element No.8 and the Saudi Aramco Corporate Contingency Plan (SACCP).

2. Implementation**A. Well Control Emergency During Production Operations**

If a well control emergency occurs while the well is the responsibility of one of the Producing Organizations, notification that a well control emergency exists will be made through the normal chain of command.

The Area Producing Vice President / Executive Director or General Manager (if the Vice President cannot be reached) may request D&WO to take over well control operations by contacting (by priority):

- 1) Vice President (VP) / Executive Director-D&WO.
- 2) General Manager (GM)-D&WO Operations.
- 3) Manager relevant area D&WO.

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D&WO's Emergency Response Responsibilities when a Producing Organization turns over well control operations will be strictly limited to coordinating / conducting safe and effective well control operations at the specific emergency premises.

The responsible Producing Organization will retain sole responsibility for all other aspects of a safe and effective emergency response operation as per their ERP.

B. Emergency or Primary drill during D&WO Operations

- 1) If an Emergency or Primary Drill occurs during D&WO operations, the Saudi Aramco D&WO Liaisonman or Senior D&WO representative shall call the designated Regional Security Control Center (RSCC) to report any Emergency or Primary Drill by dialing the equivalent number for 110 (RSCC Contact Number) and state the following:

“This is an (Emergency or Primary Drill) at Rig ___, on Well ___, at ___ area/field”

- a. Identify yourself by name and badge number.
 - b. Give your location and rig telephone number.
 - c. Briefly describe the **Emergency or Primary Drill** (i.e. H₂S Release, Fire, etc.)
 - d. State the number of injured/fatalities.
 - e. Repeat the above information.
 - f. Request the RSCC person receiving the call to repeat the information to ensure it is clearly and accurately understood to be an **Emergency or Primary Drill**.
- 2) The Saudi Aramco D&WO Liaisonman or Senior D&WO representative shall call the responsible D&WO Superintendent or the Manager or the GM – D&WO Operations (if the responsible superintendent or Manager cannot be reached).

The D&WO Organization will be solely responsible for the safe and effective management of all aspects of the emergency or drill.

C. Emergency Response Operations Priorities

- 1) D&WO On-Scene Commander (initially the Liaisonman) will take all actions necessary to avoid loss of life and/or personnel injury.

In the event that there are any injured or fatalities, the D&WO Liaisonman or most senior D&WO representative or contractor employee on the rig, will be responsible for requesting appropriate emergency medical assistance and EMS transportation.

- 2) Security patrols will be dispatched to strictly limit access to the well-site and any defined offsite hazard zone to Saudi Aramco authorized personnel.

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- 3) The D&WO Liaisonman or senior drilling representative will designate a team to immediately begin monitoring the offsite hazard zone (if any) for flammable gas and hydrogen sulfide (**H₂S**) or other potential hazards.
- 4) Personnel near the emergency site will be alerted and/or evacuated by Saudi Aramco Government Affairs / RSCC authorized personnel, as required.

D. Safeguarding Company Assets

Firefighting and special well control equipment from the D&WO Special Well Action Team (SWAT) Unit will be dispatched, as warranted, to the well-site.

The D&WO On-Scene Commander or the D&WO Well Control Team Leader will assess the incident severity and define an asset protection strategy.

E. Specialized Fire Fighting and Well Control Operations**1) Well Control**

The D&WO Well Control Team Site Leader (with rig on well) or Special Well Action Team (SWAT), without rig on well, will supervise well control operations (under the overall supervisor of the OSC (On-Scene Commander)).

No other leader or site commander, designated by a different organization, will have the authority to interfere or take charge of any D&WO well control operations activities.

In case the On-Scene Commander is incapacitated the most senior D&WO representative or the most senior contractor rig employee on the rig will take over.

2) Voluntary Well Ignition

Should uncontrolled hydrocarbon flow from a well occur, without catching fire, the decision to ignite will be based on the following criteria:

- a. If uncontrollable hydrocarbon flow from a gas well creates a **30 ppm H₂S** concentration at the defined Rupture Exposure Radius (RER) -

- Ignite the flow immediately-

- b. If uncontrollable hydrocarbon flow presents immediate and serious danger to adjacent inhabited areas or facilities, by creating or expanding a minimum **100 ppm H₂S** concentration at the well-site perimeter -

- Ignite the flow immediately-

- c. Any hydrocarbon flow condition other than that described in item (a) and (b) will be evaluated on a case-by-case basis. The decision to ignite will be made by the VP / Executive Director - D&WO or GM - D&WO Operations. If there is no communication with

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higher levels of Management, then the decision to voluntarily ignite can be made by a D&WO Liaisonman, Superintendent, Manager or Well Control Team Site Leader.

- d. Expert well control service provider may be called in to handle well control activities, as needed (**reference Appendix No.1, paragraph No.7**).

3. D&WO Onshore Emergency Response Organization

Personnel assigned to the D&WO Onshore Emergency Response Organization will be relieved of their routine responsibilities.

- A. In the event that the well has a D&WO rig on it, the D&WO Incident Manager will be responsible for all emergency response operations. He will appoint the On-Scene Commander and Well Control Team Site Leader.

The Well Control Team will consist of designated D&WO and contractor personnel as deemed appropriate by the Well Control Team Site Leader, in consultation with the On-Scene Commander.

The D&WO Onshore Emergency Response Operations Roles and Responsibilities are defined in **Appendix No.1 and No.2**.

4. Well Control Operations

The D&WO Well Control Team Site Leader will recommend an appropriate well control strategy for the On-Scene Commander. The On-Scene Commander will assist the D&WO Well Control Team Site Leader with the coordination of well control support service resources at the well-site.

5. Cost Accounting

D&WO Planning and Accounting Services Group of Planning and Technical Services Division will determine the proper disposition of the accumulated costs.

6. Support Services

Support services provided by various departments as well as those performed by service companies will be coordinated by the On-Scene Commander and the Manager, D&WO Services Department (D&WOSD).

Each department providing a support service will be responsible for adequate preparation to provide prompt and efficient service during the emergency.

7. Documenting and Critique

- A. Complete daily logs of all critical emergency response activities will be maintained in the responsible Emergency Operations Center (EOC) and continuously updated on the Emergency Message Board System (EMBS) as warranted.

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- B.** Designated EOC personnel assigned by the Incident Manager will act as liaison with all of the various groups to maintain continuous documentation of the emergency operations including (but not limited to) any fatalities, injuries and environmental impact.
- C.** A complete factual report of each day's activities will be maintained by the EOC. The final report shall be prepared by the Incident Manager.

Upon completion of the final report, a critique will be held to evaluate all the causes, actions and reactions of the various phases up to the final restoration or disposition.

8. Drills / Training Exercises

- A.** Drilling Operations Departments shall conduct an annual **“Primary”** emergency drill to better prepare for emergencies should they occur.

The annual **“Primary”** emergency drill shall be coordinated with Producing and Support Service Organizations, in order to validate that the D&WO Onshore ERP can be safely and effectively implemented for any onshore emergency.

The scope of an annual **“Primary”** emergency drill requires the **full mobilization** of the defined Emergency Response resources, along with the responsible D&WO Emergency Operations Center (EOC).

Designated Support Service Organizations will also be required to demonstrate their preparedness and competency to safely and effectively fulfill their defined roles and responsibilities.

- **Primary emergency drills “Require” full mobilization of equipment and personnel.**
 - **Primary emergency drills “Require” RSCC-110 notification.**
- B.** D&WO shall conduct annual **“Secondary”** emergency drills. These **“Secondary”** emergency drills will evaluate emergency response preparedness and require **minimal mobilization** of the defined emergency response resources.
- **Secondary emergency drills “Do Not” require full mobilization of equipment and personnel.**
 - **Secondary emergency drills “Do Not” require RSCC-110 notification.**

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Critical roles and responsibilities of designated participants in the D&WO Onshore ERP are defined in this appendix. This list is not intended to describe all the actions potentially required to safely and effectively respond to a Well-Control emergency.

1. VP - D&WO

- A.** Update the Saudi Aramco Corporate Contingency Plan (SACCP) Crisis Management Team on emergency response operations as warranted.
- B.** Oversee D&WO Emergency Response Management and provide guidance or directives, as needed.

2. GM - D&WO Operations

- A.** Initially assume the D&WO Incident Manager role and may join the SACCP Crisis Management Team, depending upon the nature and severity of the incident
- B.** Assume the D&WO On-Scene Commander role at the discretion of the VP - D&WO.
- C.** Activate SWAT as warranted.
- D.** Appoint a Well Control Team Site Leader for Producing Organization Well Control Operations
- E.** Authorize voluntary ignition of well effluent, as warranted.
- F.** Assist the D&WO On-Scene Commander as warranted.
- G.** General Manager or designate should notify all concerned entities as described in **G.I.6.001, line item No.4.**
 - 1)** Southern Area call SAOO VP at: **574-4100.**
 - 2)** Around Gas Plants call Gas Operations VP at: **577-0080.**
 - 3)** Northern Area or Offshore call NAOO VP at: **673-2380.**
 - 4)** Loss Prevention Department (LPD) at: LPD Manager at **872-8218**, Dhahran Area LP Superintendent at **872-9088.**

3. Chief Drilling Engineer-Drilling Engineering

- A.** Inform Chief Petroleum Engineer, Area Reservoir Engineering Department of situation and conditions.
- B.** Instruct Area D&WO Engineering Manager to support operations.

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The information below is not required to be obtained for drills.

A. Provide engineering support and obtain relevant well data including:

- 1) Bottom-hole pressure, productivity index, water cut and oil-water contact.
- 2) Preferred relief well drilling locations subject to wind and terrain considerations.
- 3) Preferred intercept interval.
- 4) Contour dip and strike.

B. Designate qualified and experienced engineer(s) to go to the well-site to:

- 1) Keep accurate log of well-site operations and well/environmental/weather conditions.
- 2) Assist the Well Control Team Site Leader, as warranted.

C. Develop Well-Kill Program. This might require drilling a relief well. Relief well location shall be specified in the related Well Specific ERP.**D. Monitor drilling progress on relief well(s) and provide technical liaison among engineering services group(s) and operations.****E. Prepare management reviews of progress, as required.****5. Manager D&WO Department****A. Assume responsibility for well control operations on onshore wells involving D&WO rigs.****B. Implement the operations segment of the D&WO Onshore ERP.****C. Appoint a Well Control Team Site Leader at the discretion of the Incident Manager or General Manager****6. Superintendent D&WO****A. Notify responsible Department Manager of the Onshore emergency.****B. May initially assume Incident Command or Well Control Team Site Leader role at the discretion of the Incident Manager.****C. Verify that the SA Liaisonman or senior drilling representative has designated a team to initially monitor the potential downwind hazard area for flammable gas and hydrogen sulfide (H₂S) or other hazards.**

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- D. Coordinate support service provided by other designated department at the discretion of the On-Scene Commander.

7. Manager D&WO Services Department (D&WOSD)

- A. Notify Government Affairs Representative.

B. Notify Drilling Rig Support Division (DRSD) - If necessary call:**1) Wild Well Control:**

- (281) 784-4700 / Fax No. (281) 784-4750
- KSA contact number: 055-560-1365 or 055-581-5054

Or

2) Boots and Coots: (281) 931-8884 / Fax No. (281) 931-8302

Or

3) Alert Disaster (UAE): (9714) 883-2343 / Fax No. (9714) 883-2395

- C. Notify Department Managers of designated support services departments.

- D. Implement the services segment of the D&WO On shore ERP.

- E. Provide equipment, material, and logistical support to the Well Control Team Site Leader.

- F. Coordinate mobilization of Emergency Response Operations or Support Services provided by designated Contractors.

8. Superintendent Drilling Rig Equipment Maintenance Division

Provide personnel to work at the various locations, as required.

9. Superintendent Water Well Maintenance Division

- A. Hook up nearby wells for use during onshore well control operations.

- B. Provide competent and trained skilled and semi-skilled personnel to work at the well site (water supply).

10. Well Control Team Site Leader

- A. Participate in formulation of immediate plans to control the well.

- B. Advise D&WO Liaisonman (if a rig on the well) of immediate action to be taken.

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- C. Assist with evacuation and rescue operation if needed.
- D. Conduct Well Control Operations and keep On-Scene Commander advised of any significant changes in hazard conditions.
- E. Secure area, as required.

11. D&WO Accounting Services Group

- A. Maintain a record of costs incurred and appropriate documentation as directed.
- B. Maintain inventory of all Equipment and Materials delivered to disaster site.

12. Superintendent Drilling Rig Support Division

- A. Obtain all materials, tools and equipment needed for use at the well-site.
- B. Assign single point dispatcher.
- C. Assign logistics coordinator to work with SA Affairs.
- D. Coordinate with Transportation to ensure prompt delivery of materials and equipment.

13. Superintendent Well-site Division

- A. Prepare a location for emergency equipment and camp to be set up
- B. Provide a road way for movement of material and equipment to reach the well-site location.
- C. Provide stand-by equipment for use during well control operations to construct pits or dikes.

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- A. Design, install, maintain, and test reliable, additional or site specific, communication systems as required by the On-Scene Commander.
- B. Provide communication system technician(s) at the designated D&WO EOC and Well-site.

2. Aviation

- A. Provide emergency transportation services for medical evacuation, personnel evacuation, and Well Control Team members as warranted.
- B. Provide aerial surveillance to assist with search and rescue, security and well control operations as warranted.
- C. Participate in the Search and Rescue efforts, as needed.
- D. Provide for movement of authorized personnel and materials as warranted.

3. Transportation and Equipment Services Division (T&ESD)

- A. Provide immediate emergency response movement of designated materials, tools and equipment.
- B. Provide required Heavy Equipment, as requested by site coordinator.

4. Fire Protection

- A. Assign single point of contact T&ESD coordinator (Dispatcher).
- B. Provide competent personnel and equipment to support emergency operations as requested. The actual level of emergency assistance will depend on remoteness of the well-site.
- C. Provide SA GIS well-site and Rig Location Mapping System link in each fire station to ensure an Immediate **110** Incident Notification System response.

5. Security

Provide emergency response units for access control and offsite personnel alert / evacuation operations.

6. Medical

Provide emergency medical services as required on-scene and at clinic(s).

7. Community Services

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Provide accommodation and food services as needed.

8. Producing

- A.** Responsible for all aspects of emergency response operations, other than well control operations for any well emergency that is turned over to the D&WO Organization.
- B.** Handle liaison with dispatchers, plant pipelines and other groups concerned with gas/oil movements.
- C.** Coordinate with the Well Control Team Site Leader on all activities within the field.
- D.** Supervise all shut-in and start-up activities of nearby wells when the need arises.

9. Government Affairs Representative

- A.** Notify Government officials of situation.
- B.** All communications will be cleared through the VP / Executive Director-D&WO.

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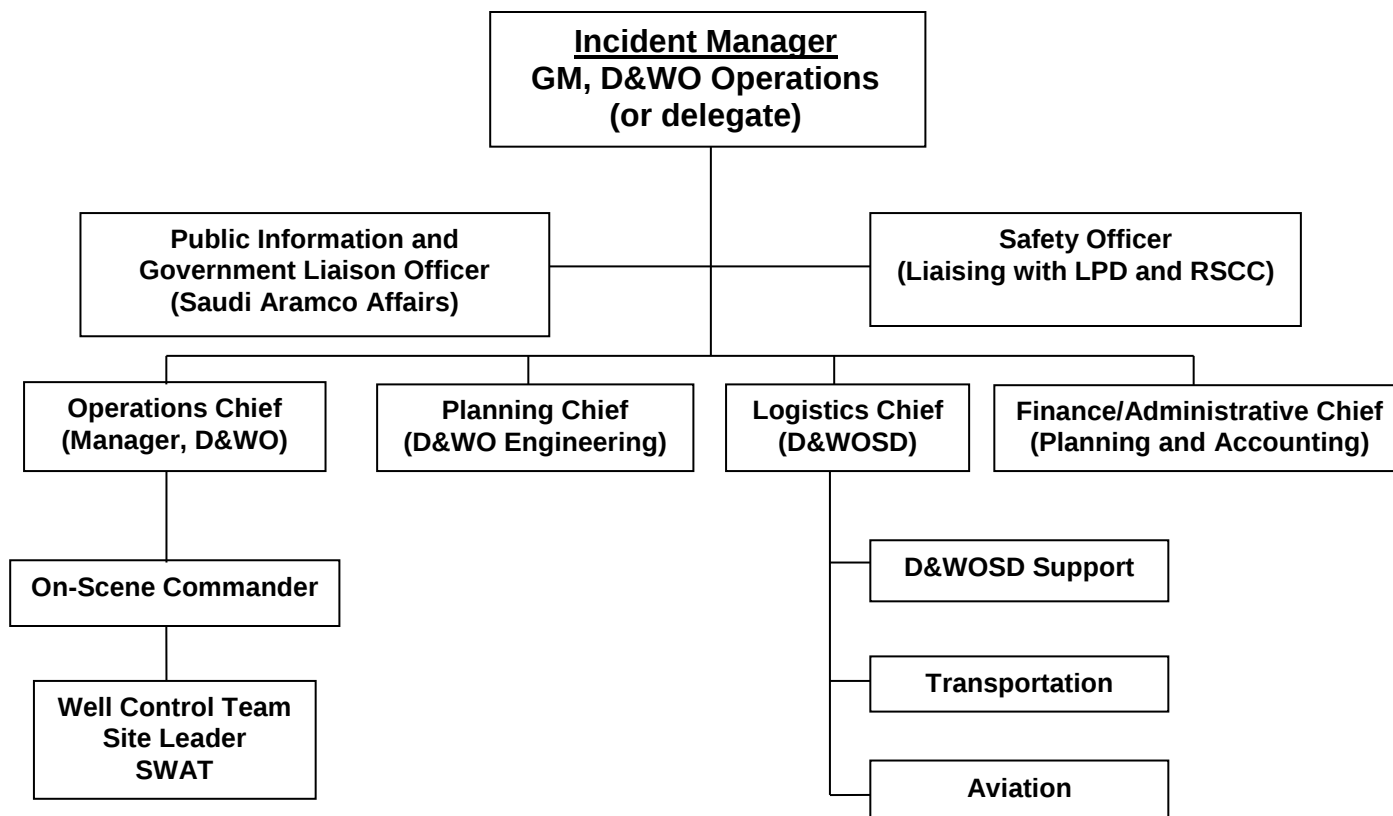
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Revision Summary

Rev No.	Date	Revision Summary	Approvals		
			Originator	Custodian Review	Approval Authority
00	Jan 2009	Original Release	IA	IA	Unknown
01	Nov 2011	Various Changes	IA	IA	ZAH
02	May 2015	Complete Revision	RGW	RGW	DMD

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