

# GoM HSSE Safe Practices Manual 2008

<p><b>GoM Safe Practices Manual</b> <b>Link to Online Documents</b></p>
---

1. [Introduction](#)
2. [Access to Medical Records](#)
3. [Barricading and Barrier Requirements](#)
4. [Benzene](#)
5. [Blood Borne Pathogens](#)
6. [Bypassing Safety Systems and Devices](#)
7. [Chain Usage](#)
8. [Control of Work](#)
9. [Driving Safety](#)
10. [Electrical Safety](#)
11. [Flammable/Combustible Liquids Storage and Handling](#)
12. [General Safety Rules](#)
13. [Ground Disturbance](#)
14. [Hazard Communication \(HAZCOM\)](#)
15. [Hearing Conservation](#)
16. [Heat Stress](#)
17. [Helicopter Safety](#)
18. [Hot Bolting](#)
19. [Hot Tapping and In-Service Welding](#)
20. [GoM Incident Notification, Reporting and Investigation Procedure](#)
21. [Ladder Usage and Inspection](#)
22. [Lifting Operations](#)
23. [Management of Change \(MOC\)](#)
24. [Naturally Occurring Radioactive Materials \(NORM\)](#)
25. [Offshore Travel Requirements](#)
26. [Personal Protective Equipment \(PPE\)](#)
27. [Pipe and Vessel Purging](#)
28. [Potable Water](#)
29. [Radiation Source Handling](#)
30. [Respiratory Protection](#)
31. [Scaffolds](#)
32. [Short Service Employee Program](#)
33. [SIMOPS](#)
34. [Transportation of Hazardous Materials](#)
35. [Working at Heights](#)

<p style="text-align: center;"><b>GoM Safe Practices Manual</b>  <b>Link to Technical References online</b></p>
---

1. TR [Access to Employee Exposure and Medical Record Program](#)
2. TR [Alternative Cutting Devices](#)
3. TR [Asbestos](#)
4. TR [Benzene Program](#)
5. TR [Blood Borne Pathogens Program](#)
6. TR [Contract Aircraft Guidelines](#)
7. TR [Drug and Alcohol Policy](#)
8. TR [Emergency Evacuation Plan](#)
9. TR [Emergency Shut-down Systems](#)
10. TR [GoM Employee Health Risk and Exposure Assessment Plan](#)
11. TR [Fire Protection Philosophy](#)
12. TR [Fitness for Duty Policy](#)
13. TR [Forklift and Industrial Truck Operations](#)
14. TR [GoM Action Tracking Procedure](#)
15. TR [GoM Aerosol Can Puncturing Procedure](#)
16. TR [GoM Compressed Gases and Air](#)
17. TR [GoM Health Protective Measures – Sewage and Black Water Treatment Facilities](#)
18. TR [GoM Heat Stress Index](#)
19. TR [GoM Medication Guidelines](#)
20. TR [GoM Medical Services](#)
21. TR [GoM Process Safety Management Program \(PSM\)](#)
22. TR [Handling of Radioactive Sources Protection Program](#)
23. TR [Hazard Communication Program](#)
24. TR [Hearing Conservation Program](#)
25. TR [Hexavalent Chromium \(Cr\(VI\)\)](#)
26. TR [Hose Use and Inspection Program](#)
27. TR [Hydrogen Sulfide \(H<sub>2</sub>S\)](#)
28. TR [Incident/Alert Lessons Learned Procedure](#)
29. TR [Laboratory Safety](#)
30. TR [Lead](#)
31. TR [Methanol \(Methyl Alcohol\)](#)
32. TR [MMS Approved Hot Work and Safe Welding Plan](#)
33. TR [Naturally Occurring Radioactive Material \(NORM\) Manual](#)
34. TR [Offshore Access Policy](#)
35. TR [Offshore Production Facilities Potable Water Analysis and Inspection Program](#)
36. TR [Orientation Program](#)
37. TR [Pest Management](#)
38. TR [Permit Decision Tool](#)
39. TR [Pressure Safety Valves and Ruptured Disks](#)
40. TR [Records Retention](#)

- 41. TR Respiratory Protection Program
- 42. TR S&O CoW Assessment Tool
- 43. TR Station Bills and Emergency Signals
- 44. TR Tank and Vessel Cleaning

The Safe Practices Manual references these technical standards and practices. Many of these are available for viewing on the BP Technical Practices Portal;  
[http://technical\\_practices.bpweb.bp.com/](http://technical_practices.bpweb.bp.com/)

ANSI Z87.1- Standard Practice for Occupational and Educational Eye and Face Protection
ANSI Z89.1-American National Standard for Personnel Protection-Protective Headwear for Industrial Workers-Requirements
ANSI Z89.2- Industrial Head Protection for Electrical Workers
ANSI Z87-Occupational and Educational Eye and Face Protection
ANSI A14.3-1956, Safety Code for Fixed Ladders; ANSI
ANSI 10.14, Requirements for Safety Belts, Harnesses, Lanyards, and Lifelines for Construction
ANSI A10.8, Safety Requirements for Scaffolding
ANSI Z41.1, USA Standard for Men's Safety
ANSI 88.2 Standard Practices for Respiratory Protection
API RP 14F- Recommended Practice for Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Division 1 and Division 2 Locations
API RP 500- Recommended Practice for Classification of Locations for Electrical Installation at Petroleum Facilities Classified as Class I, Division 1 and Division 2
API RP 505- Recommended Practice for Classification of Locations for Electrical Installation at Petroleum Facilities Classified as Class I, Zone 0, Zone 1 and Zone 2
API Publication 2201
API RP 2D Operation and Maintenance of Offshore Cranes
ASTM D 120, Specification for Rubber Insulating Gloves
ASTM D 178, Specification for Rubber Insulating Matting
ASTM D 1048, Specification for Rubber Insulating Blankets
ASTM D 1049, Specification for Rubber Insulating Covers
ASTM D 1050, Specification for Rubber Insulating Line Hose
ASTM D 1051-87, Specification for Rubber Insulating Sleeves
IEEE 1584- Guide for Performing Arc-Flash Hazard Calculations
NFPA 70- National Electrical Code
NFPA 70 E- Standard for Electrical Safety in the Workplace



**GoM Safe Practices Manual  
Forms**

Amendment Proposal Form



## GoM Safe Practices Manual (SPM) - Introduction

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00079-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/14/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

The BP Gulf of Mexico (GoM) Safe Practices Manual provides safe work practices for employees to address the potential risks associated with work tasks. This manual is based on regulatory requirements, BP requirements, industry best practices, field experience, and lessons learned. Each employee shall review, understand and utilize this manual to control/mitigate the hazards associated with their tasks. Remember, your co-workers, family, and friends are depending on you to arrive home, incident and accident free, each and every work shift.

The manual covers many, but by no means all, of the jobs and situations encountered in our operations. Please check with your supervisor, local management, or safety representative for site-specific procedures and requirements. Should situations arise which are not adequately covered in the manual, refer to the associated Technical Practices and/or key documents referenced at the end of each chapter.

The Safe Practices Manual uses specific terminology to indicate whether it is a mandatory requirement or a best practice. The following words have specific meaning:

- 'Shall' is used where a provision is mandatory
- 'Should' is used where a provision is preferred
- 'May' is used where alternatives are equally acceptable

### B To Suggest a Revision

The Safe Practices Manual is intended to be a "living" document, and suggestions for revisions by employees are encouraged. There are two ways to initiate a revision:

- The first and preferred method is to submit suggestions online. To initiate a revision online, go to the SPM at the official BP GoM HSSE website and complete the form "Suggest a Revision" located in the Table of Contents. Your suggestion will be forwarded to the GoM HSSE Programs Manager for review and consideration in the next update.
- The second method is for employees that do not have computer access. In these instances forward your request to the HSSE Advisor responsible for your area. The HSSE Advisor will forward your suggestion to the GoM HSSE Programs Manager for review and consideration in the next update.

Revision Date	Authority	Custodian	Revision Details
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	Added a section on how to suggest a change to future revisions of the SPM
02/28/06	S. Garner/ S. Tink/R. DeLeonardis/ C. Jackson	Kathy Kanocz	Added in reference to MOC for deviations. Changed CD # from 10045 to UPS-US-SW-GOM-HSE-DOC-00079-2. Changed 3 authorities and 1 custodian.
01/14/02	S. Garner/ B. Herbert/ R. White/S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) – Access to Exposure and Medical Records

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00187-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/15/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter provides guidelines for access to employee exposure and medical records.

### B General Requirements

An employee shall be provided access to their medical records no later than 15 days after the written request for access has been made. Records or copies shall be provided at no cost to the employee.

### C Procedures

If you are exposed to a toxic substance or a harmful physical agent in the workplace, you, or your designated representative, are entitled to review and copy:

- Exposure records relevant to your actual or potential exposure
- Your medical records
  - These records are maintained by the applicable Medical Department serving your operation and are available to you upon request.
- Analysis using exposure or medical records concerning your working conditions or workplace

#### C.1 Record Keeping

Employee exposure records shall be maintained for the duration of employment and for 30 years thereafter and shall include the following:

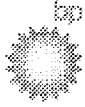
- Environmental (workplace) monitoring including personal, area, grab and swipe (wipe over a designated area), type samples
- Biological monitoring - level of chemical in the blood, urine, hair, and fingernails, for example

### D Key Documents

GoM Access to Employee Exposure and Medical Records Program

OSHA 29 CFR, Part 1910.1020 - Employee Exposure and Medical Records

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Short overview of the GoM Access to Employee Exposure and Medical Records Program
01/31/06	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Kathy Kanocz	No content revisions. Revised 3 authorities and 1 custodian. See 01/15/02 revision log entry. Changed CD # from 10,002 to UPS- US-SW-GOM-HSE-DOC-00090-2 to conform to new numbering structure in new doc base.
01/15/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) – Barricading and Barrier Requirements

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00201-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/28/06	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

The purpose of this chapter is to identify when a Barricade or Barrier is required. Barricades or Barriers shall be erected around hazardous work areas such as holes in decking/flooring, trenches, overhead activities, open unattended vessels, slick walking surfaces, or dangerous storage to exclude unauthorized, unprotected personnel.

This chapter will provide minimum requirements for the use of Barricades and Barriers. Access to areas with hazardous activities or unsafe conditions shall be restricted. These situations require the use of Barricades, Barriers, caution/danger tape, and/or signage.

### B Definitions

Definitions Table

Term	Definition
Barricade	Rigid physical structure isolating a hazardous zone
Barrier	Non-rigid physical structure designed to warn personnel of a caution (yellow caution tape) and danger (red danger tape) zone
Caution Zone	An area with a hazard that is not immediately or foreseeably life threatening. Caution zones shall be identified with yellow caution tape and signs or tags
Danger Zone	An area with hazards that are potentially life threatening and/or can cause serious injury. Danger zones shall be marked with red danger tape and signs or tags
Danger Zone Requiring Barricades	An area with hazards that is immediately or foreseeably life threatening and/or can cause serious injury. Danger zones shall be barricaded and marked with red danger tape and signs or tags
Specialty Zones with Distinctive Barrier Requirements	Other areas existing in which specific barrier requirements are required due to regulatory or health concerns (i.e., radiation and asbestos)

## C Overview

### C.1 Barricade Requirements

Physical Barricades are a way of restricting access to danger zones. Barricades shall:

- Completely enclose the identified hazardous area and have appropriate signage
- Consist of a toprail and a midrail, with the toprail located approximately 42 inches above the deck or floor
- Be constructed of pipe, wire rope (minimum ¼ inch diameter), steel chain, or other materials of similar strength
- Capable of withstanding the concentrated load of 200 pounds applied at any point and in any direction
- Have a maximum deflection (sag) of the flexible barrier prior to and during a 200 pound load shall be 3 inches. (For reference, see OSHA 29 CFR 1910 Subpart D)
- If fence material is used, the material shall be adequately supported with wire rope, steel chain, or pipe (toprail and midrail) to maintain rigidity

**NOTE:** Synthetic rope and plastic chain are not acceptable materials for Barricades. If permanent guardrails are installed, no signage will be required. Permanent guardrails shall meet both BP's and regulatory design specifications.

### C.2 Barrier Requirements

Barriers may be used to restrict access to caution/danger zones and may be constructed of synthetic rope, plastic chain, yellow caution/red danger tape, or other material that provides adequate communication that a hazard exists.

### C.3 Caution Zones

Caution Zones require warnings with Barriers that block off the location from access using yellow caution tape and signs to signify the point of danger. This danger type may include, but is not limited to, the following:

- Open holes in decks or walkways where the opening is one square foot or less
- Hot work areas
- Attended confined space work areas
- Attended excavation/trenching activities
- Attended work areas with exposed or energized electrical equipment
- Slip/trip and same level fall hazards

### C.4 Danger Zones

Danger zones require warnings with barriers that block off the location from access using red danger tape and signs to signify the point of danger. This danger type may include, but is not limited to, the following:

- Hydro-testing
- Overhead work areas where there is potential for falling objects

- Unattended and open permit-required confined spaces

### **C.5 Danger Zones Requiring Barricades**

Danger zones require warnings with Barricades that block off the location from access using red danger tape and signs to signify the point of danger. This danger type may include, but is not limited to, the following:

- Open holes in decks or walkways that are greater than one square foot
- Deteriorated or unsafe grating, which poses the threat of a fall to a lower level
- Deteriorated or missing handrails, which pose the threat of a fall
- Unattended work areas with exposed or energized electrical equipment
- Unattended and exposed excavation/trenches

### **C.6 Specialized Zones Requiring Barriers**

The following is a list of other specialized zones that require Barriers:

- Work areas that pose a health risk (NORM, X-ray, Asbestos, Lead, Benzene, etc.)
- Injury/incident scenes that have not been investigated or where potentially infectious material may be present
- Radiation work areas identified by radiation tape as required
- Asbestos work areas identified by red danger tape as required

## **D Procedures**

**NOTE:** A tag shall be installed with the start time, date, description of hazard, and responsible party at all caution and danger zones.

### **D.1 Caution Zone**

Before entering a Caution Zone, each individual shall understand the specific hazards associated with the area.

### **D.2 Danger Zone**

To comply with requirements governing danger zones, complete the steps below:

1. Enter Danger Zones only with specific permission from the facility supervisor or PIC.
2. Enter the barricaded area (Danger Zone) only after a review of the Job Safety Environmental Analysis (JSEA) to identify the hazards and a valid Permit to Work WCC is issued by the supervisor or PIC.
3. Performing Authority (PA) verifies that the barricade and/or zone markings are maintained and housekeeping is in order.
4. PA verifies that Barricades and/or temporary Barriers are not removed until the hazard is abated or corrected.
5. PA verifies that barricaded areas are inspected during normal rounds by platform personnel to comply with these requirements.
6. Install an approved guardrail if barricading remains on-site beyond 90 days. If a guardrail installation occurs, it is considered a permanent change to the facility and an MOC is required.



## E Key Documents

OSHA 29 CFR 1910 Subpart D

Revision Date	Authority	Custodian	Revision Details
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	Added an additional danger zone called “Danger Zone Requiring Barricade” to clarify when barricades or barriers are required to mark and protect a danger.
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	New document issued.



## GoM Safe Practices Manual (SPM) - Benzene

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00189-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/16/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter outlines requirements to reduce personnel occupational exposure to Benzene.

### B Definitions

Definitions Table

Term	Definition
Benzene	An aromatic hydrocarbon that occurs naturally in petroleum crude oils and natural gas condensates
Carcinogen	A cancer causing agent

### C General Requirements

All personnel at a BP GoM facility shall comply with the GoM Benzene Program. The OSHA Permissible Exposure Limit (PEL) for Benzene is 1 ppm averaged over an eight-hour work shift. The maximum Short-Term Exposure Limit (STEL) is 5 ppm averaged over a 15-minute period.

Certain job tasks, such as glycol sock filter change-outs, may present the potential for exposure to gas or liquids containing Benzene. Personnel shall use the recommended PPE where the potential for exposure to Benzene exists. Refer to the PPE assessment matrix at your location.

### D Overview

Benzene is a carcinogen that occurs naturally in petroleum crude oils and natural gas condensates. It may also be found in processing and cleaning fluids, gas-drying glycol systems, lube oil of wet gas compressors, storage tanks, produced water systems, and where it is used as an additive.

Short term (acute) effects of Benzene are headache, dizziness and/or respiratory irritation. These effects are usually reversible by removing the exposed person to a safe breathing area. Long-term (chronic) effects to the blood system including leukemia can occur from repeated low level exposures. If these symptoms are experienced, notify your supervisor and your HSE Advisor. If necessary, the supervisor shall follow-up with BP Medical and Industrial Hygiene.

## E Key Responsibilities

Position	Responsibilities
Industrial Hygiene	Custodian of the GoM Benzene Program
OIM	Verifying compliance with the Benzene Program
Personnel	<ul style="list-style-type: none"><li>• Complying with the Benzene Program</li><li>• Understanding the hazards associated with work involving Benzene</li><li>• Using controls such as ventilation or PPE to prevent or reduce exposure to materials that contain Benzene, i.e., crude oil, condensate and Natural Gas Liquids (NGLs). Contact your supervisor and HSSE Advisor for technical assistance</li></ul>

## F Procedures

Refer to the GoM Benzene Program on the GoM HSSE Website.

### F.1 Minimizing Exposure

Minimizing the risk of exposure by inhalation of hydrocarbon vapors and skin contact can be accomplished through:

- Allowing any initial hydrocarbon vapors released to properly vent when opening vessels (i.e., floatation cells/water treatment skids and process filter changes)
- The flushing and purging of any equipment and vessels prior to being opened
- The use of proper engineering controls and PPE

### F.2 Exposure Monitoring

Exposure monitoring shall be conducted for work operations involving gas or liquids containing 0.1% (1000 ppm) or more Benzene by volume.

Personnel exposure to Benzene is evaluated by collecting air samples in the individual's breathing zone during their normal workday. Air samples may be collected after clean up of spills, ruptures, leaks, etc. to confirm that exposure levels have returned to the level that existed prior to the incident.

### F.3 Personnel Notification of Monitoring Results

Personnel shall be notified in writing of the results of any Benzene exposure monitoring performed within fifteen days of acquiring the results of the exposure monitoring. Whenever the PELs are exceeded, written notifications shall serve to inform individuals of the corrective action being taken or to be taken to reduce the personnel's exposure level to or below the PEL.

### F.4 Record Keeping

All air sampling results are maintained by the HSSE department. Medical surveillance records shall be maintained by the Medical department.

### **F.5 Regulated Areas**

Regulated areas shall be established where the airborne concentration of Benzene exceeds, or can reasonably be expected to exceed, the PEL of 1 ppm or the STEL of 5 ppm. (See the Barricade and Barrier Requirements chapter.)

The regulated work area is demarcated from the rest of the work site by physical means or signs that limit access to only authorized, properly equipped personnel in order to minimize Benzene exposure.

### **F.6 Methods of Compliance**

Where feasible, Benzene exposure shall be limited through engineering controls and work practices in preference to the use of PPE (e.g., respiratory protection).

## **G Key Documents**

GoM Benzene Program

OSHA 29 CFR 1910.1028 - Benzene

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Short overview of the GoM Benzene Program
01/31/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Jack Kogut	No content changes. Revised 3 authorities and 1 custodian. Changed CD # from 10005 to UPS-US-SW-GOM-HSE-DOC-00094-2. Removed reference to the Industrial Hygiene Manual in 3.0 Requirements Section.
01/16/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) – Blood Borne Pathogens

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-000195-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/16/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter outlines the requirements to prevent occupational exposure for personnel who may come in contact with blood or other body fluids, and/or render medical assistance (first aid).

### B Definitions

Definitions Table

Term	Definition
Blood Borne Pathogens	Disease causing micro-organisms that are present in human blood and can cause disease in humans These pathogens include, but are not limited to, Hepatitis B Virus (HBV) and Human Immunodeficiency Virus (HIV)
Exposure Incident	Contact with blood or Other Potentially Infectious Material (OPIM) through the skin, eye, mouth, other mucous membranes, or via injection/piercing with an object contaminated with such fluids
Other Potentially Infectious Materials (OPIM)	Human body fluids such as semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, and body fluid that is visibly contaminated with blood
Universal Precautions	An approach to infection control in which all human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other Blood Borne Pathogens

### C Overview

The GoM Blood Borne Pathogen Program requires a written, site specific exposure control program which addresses precautions against exposure to blood and OPIM and items contaminated with such fluids.

## D Key Responsibilities

Position	Responsibilities
Industrial Hygiene	Custodian of the GoM Blood Borne Pathogen Program
OIM	Verifying compliance with the GoM Blood Borne Pathogen Program
Personnel	<ul style="list-style-type: none"><li>• Notifying their supervisor after coming in contact with another person's body fluids</li><li>• Compliance with GoM Blood Borne Pathogen Program</li></ul>

## E Procedures

Refer to the full GoM Blood Borne Pathogens Program on the GoM HSSE website for process and procedures information including: exposure control procedures, clean-up process, records and documentation.

If personnel come in contact with human blood or OPIM, the following minimum steps should be taken:

- Rinse the area of contact thoroughly with water as soon as possible
- Scrub exposed area with an anti-microbial soap if available
- Remove any clothing or jewelry that has had potential contact
- Report the incident to your supervisor immediately
- Incident to be recorded and documented through Tr@ction
- Supervisor shall notify the BP Medical Team promptly

Blood Borne Pathogens training is required for all personnel with a potential for exposure to blood borne pathogens.

Training shall occur at initial assignment, and annually thereafter; and when work duties and/or exposures change.

## F Key Documents

GoM Blood Borne Pathogens Program

OSHA, Occupational Exposure to Blood Borne Pathogens, 29 CFR 1910.1030

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Short overview of the Short overview of the GoM Blood Borne Pathogens Program and GoM Site Specific Exposure Control Program
01/31/06	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Jack Kogut	Removed references to Dr. Connie Petrick and left as BP Medical Coordinator. Revised 3 authorities and 1 custodian. Changed CD # from 10006 to UPS-US-SW-GOM-HSE-DOC-00095-2. Removed reference to Industrial Hygiene Management Manual in section 3.0. Revised after hours medical contact number.
01/16/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Bypassing Safety Systems and Devices

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00098-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/17/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	05/01/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This section describes the requirements for bypassing, also known as temporary disabling, safety systems or devices on a temporary basis for the purposes of startup, maintenance, or testing. Temporary bypassing of control systems (Programmable Logic Controller [PLC]) shall be outlined in the facility's operating procedures and is not addressed in this section.

**NOTE:** Disabling safety or control systems for periods in excess of one week requires a Management of Change (MOC). For further clarification on the MOC requirements, refer to the Site Technical Practice for Override/Bypass Control (DWGOM GP 30-0130).

### B Definitions

Definitions Table

Term	Definition
Bypassed Safety Device	Rendering temporarily inoperable, a safety device installed as part of the platform safety system and rendered inoperable by a person's action that prevents the safety device from performing its design function. This may include, but is not limited to, blocking, jumping, pinning, and other physical changes that are not part of the design
Computer-Based Technology System (CBTS)	A computer-controlled electronic safety system, such as SCADA and Remote Terminal Units (RTUs)
Control Station	A location at which an operator is capable of monitoring and controlling the production process equipment and platform safety system
Control System	A system designed to maintain operating parameters within a specified range
Essential Operating Conditions	Operating parameters including pressures, status of safety devices, liquid levels, temperatures, flow rates, and/or pressures on specific downstream components



Term	Definition
Non-Computer-Based System (NCBS)	A safety system that operates with pneumatic supply
Remote Site	A satellite or subordinate platform that is not connected to the parent facility
Safety Device	A device which acts as part of a safety system and has a specific function (e.g., pressure safety high, shutdown valve, relief valve, gas detectors, ultra-violet (UV) detectors, etc.)
Safety Override Risk Assessment (SORA)	A formal risk assessment performed to identify risks and mitigations required when a safety device is put in bypass.
Safety System	A system designed to alarm, shut down, or otherwise take action to prevent undesirable conditions which could jeopardize the safety of the operation

## C General Requirements

Temporary bypassing of safety systems or devices shall only be allowed for the purposes of startup, maintenance, or testing. Bypassing Safety Systems or devices requires approval by local supervision and can only be performed by an individual who is thoroughly familiar with the system and understands the consequences of the change. All bypassed safety systems or devices shall be documented on the Bypass Log.

In addition, the bypassed device shall have a visual indicator that identifies the device is bypassed. For Computer-Based Technology Systems (CBTS), indications on the control board displays are adequate.

An operator shall monitor the bypassed functions until the safety device is placed back in service. It is the responsibility of the person initiating the bypass to confirm these requirements are followed and that the safety device is returned to active service once startup, maintenance, or testing is complete.

## D Key Responsibilities

Position	Responsibilities
Location Manager (OIM, OPM, PIC, Well-Site Leader, On-Site Manager)	<ul style="list-style-type: none"> <li>Confirms that the Bypass Log and the program are effectively utilized by the operating location. See Site Technical Practice for Override/Bypass Control (DWGOM GP 30-0130)</li> <li>Confirms when the device is back in service</li> </ul>
Person initiating bypass	<ul style="list-style-type: none"> <li>Confirms the safety device is being bypassed for startup, maintenance, or testing purposes only</li> <li>Confirms the minimum number of safety devices is out of service at one time</li> <li>Confirms the bypassed safety device is documented on the Bypass Log, and a visual indicator is present to identify the</li> </ul>

	bypassed safety device <ul style="list-style-type: none"> <li>• Confirms someone has been designated to continuously monitor the bypassed function until the safety device is placed back in service</li> </ul>
--	---

## E Procedures

### E.1 Documenting the Bypassed Safety Device

The following information shall be in the Bypass Log:

- Tag number and description of device that is bypassed
- Name or initials of the person initiating the bypass
- Date and time bypassed
- Amount of time device is in bypass mode
- Amount of time device is permitted to be in bypass mode per the SORA.

While the system or device is bypassed, the Bypass log shall be posted in a conspicuous location in the Control Room. The Bypass log shall be immediately accessible by operations personnel. Once the bypass is removed, the form shall be maintained on file at the operating location for two years.

A Safety Override/Bypass Shift Change Log will also be maintained per the Site Technical Practice for Override/Bypass Control (DWGOM GP 30-0130)

### E.2 NCBS Bypassed Safety Devices

The procedure for monitoring Non-Computer Based System (NCBS) bypassed safety devices is:

- Position a monitoring operator at either the control panel for the bypassed safety device, at the bypassed safety device, or at the component that the bypassed safety device monitors when in service
- Monitoring operator shall be able to view all essential operating conditions until all bypassed safety devices are placed back in service and capable of initiating shut-in action in the event of an abnormal condition

### E.3 CBTS Bypassed Safety Devices

The procedure for monitoring bypassed CBTS safety devices is to position a monitoring operator at a designated control station. The control station shall be capable of all of the following:

- Displaying the status of the bypassed safety device and all essential operating conditions that affect the bypassed safety device, well, pipeline, and process component
- Controlling the production process equipment and the entire safety system
- Displaying a visual indicator when safety devices are placed in the bypassed mode
- Upon command, overriding the bypassed safety device and initiating shut-in action in the event of an abnormal condition
- Maintaining constant communications between remote monitoring personnel and the personnel performing maintenance or testing

### **E.4 Monitoring Procedures for Startup of Remote Sites**

Electronic safety devices may be temporarily bypassed as specified below during remote start-up operations provided the following conditions are met:

- Confirm that the system pressure will not exceed the maximum allowable working pressure (MAWP) of the system's limiting component
- Continuously monitor all essential operating conditions, including those on down-stream components

These safety device bypass provisions shall only apply during remote control and start-up operations for SCADA systems with remote monitoring, control, and shutdown capabilities and only when each safety device has remote monitoring and control capabilities (i.e., the SCADA system allows for each safety device to be put into bypass and taken out of bypass remotely).

If a bypass period longer than 30 minutes is required, the SCADA logic shall require an acknowledged command at least once every five minutes. The acknowledged command shall reset the timer to active. Once the bypassed devices are cleared, the reset timer should automatically cancel.

## **F Key Documents**

Site Technical Practice for Override/Bypass Control (DWGOM GP 30-0130)

Revision Date	Authority	Custodian	Revision Details
07/09/08	GoM HSSE Director	GoM HSSE Programs Manager	Minor adjustments to more fully align with STP for Override/Bypass Control.
06/23/08	GoM HSSE Director	GoM HSSE Programs Manager	Aligned SPM chapter with STP For Override / Bypass Control.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Changed title from "Disabling of Safety Systems" Improved and clarified definition for "Bypassed Safety Device" Responsibilities for location manager (e.g. OIM, OPM, WSL, Onsite Manager) defined Responsibilities for person initiating the bypass defined Documentation – Defeated Safety Device Log replaced with Bypass Log
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Revised Defeated Safety Device Log Form. Changed CD # from 10018 to UPS-US-SW-GOM-HSE-DOC-00098-2 to conform to new numbering nomenclature in the new GoM HSSE doc base. Changed 3 authorities and 1 custodian.

Control Tier 2 – GoM HSSE

CD# UPS-US-SW-GOM-HSE-DOC-00098-2

Revision Date: 05/01/09

Uncontrolled Document. Valid Only at the Time of Printing. Print Date: 4/20/2009

01/17/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.
5/01/09	GoM HSSE Director	GoM HSSE Programs Manager	Section A, Green Note Box misprint. Improved the definition of when an MOC is required.



## GoM Safe Practices Manual (SPM) – Chain Usage

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00103-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/28/06	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

The purpose of this chapter is to eliminate the use of unidentifiable, uncertified, or loose chain in BP GoM lifting, pulling, and handling operations.

**CAUTION:** Do not use chain slings in lifting operations.

Chain intended to be covered in this document includes certified chain accessories, chain falls, come-a-longs, and bushing pullers used on the drill floor.

Not included in this scope are marine chain, chains for mooring, securing chain on vessels in marine applications, and swing rope chains.

In BP GoM operations, current lifting procedures and guidelines prohibit the use of chain slings in lifting operations. Wire rope or other approved certified lifting devices\* are used instead of chains (e.g., \*Spreader bars and engineered lifting arrangements are examples of other approved certified lifting devices.)

Prior to using chains within systems, review the JSEA and confirm there are no other alternative rigging applications and/or devices. When in doubt, contact your supervisor or local HSSE representative.

### B Definitions

Definitions Table

	Definition
JSEA	A job related safety and environmental analysis that is intended to identify hazards and provide actions to mitigate known hazards with a particular task

### C Procedures

#### C.1 Process

Chains can only be used as part of approved and certified equipment (i.e., chain hoists and bushing pullers).

The following factors shall be determined prior to conducting any process using chain:

1. Will the chain be taking on any load or stored energy?
2. Is the chain being used certified for the rated load?
3. Has the chain been thoroughly inspected?
4. Is the chain free from danger?

## **C.2 Criteria - Recommended Practices and Inspection**

All chain system applications shall follow strict guidelines to manufacturers recommended practices and inspection criteria. The following shall be determined prior to conducting any process using chain:

1. Does the chain system have a manufactured safety factor of 4 to 1 or greater?
2. What type shock load is the chain designed to handle?

## **C.3 Inspection**

Inspections of chain systems shall be performed according to ANSI B30.9 governing standards, which determines whether or not equipment is removed from service. Inspections shall be performed to meet the following criteria as mandated in the regulatory guidelines for frequency and performance standards.

### **C.3.a Frequency**

Inspect chain systems and attachments to confirm that they meet specifications according to regulating guidelines that give the frequency of inspection requirements.

- For normal (monthly use) service conditions, inspect chain systems on a monthly basis
- For severe (daily to monthly use) service conditions, inspect chain systems daily and monthly

### **C.3.b Performance Standards**

When inspecting chain systems, check for the following conditions to determine whether or not to remove the chain from service:

- Wear
- Stretches
- Latches on hooks, hinged freely and seated properly without evidence of distortion
- Nicks
- Breaks
- Throat openings of hooks without evidence of distortion
- Bends
- Gouges
- Discoloration from excessive temperature
- Cracks
- Weld splatters
- Chain links and attachments, hinged freely to adjacent links

The JSEA shall consider the risks of using chain, and appropriate mitigation steps shall be included to confirm safe chain usage.

**D Key Documents**OSHA 1910.184

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Purpose clarified to eliminate the use of unidentifiable, uncertified or loose chain in GoM lifting, pulling and handling operations Scope revises to clarify what types of chain equipment/accessories the practice applies to and does not apply to.
02/28/06	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Kathy Kanocz	Issued new document.



**GoM Safe Practices Manual (SPM) – Control of Work**  
**Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00038-2**

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	06/09/06	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

## A Purpose/Scope

This chapter outlines the processes and systems that support the BP Group Control of Work (CoW) Standard. This Policy establishes a formal approach for personnel to manage risks at BP-managed Gulf of Mexico (GoM) Strategic Performance Unit (SPU) operations.

## B Definitions

Acronym Table located at the front of the SPM.

Definitions Table

Term	Definition
Affected Employee	An employee whose job requires them to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed
Authorized Gas Testers	Personnel testing for the presence of flammable vapors, toxic gases, and oxygen as instructed by the Issuing Authority prior to and during work covered by a WCC
Blind Flange	A full-rated pipe fitting used to close the flanged end of an open pipe or valve
Blind or Slip Blind	A properly rated and sized metal plate inserted between pipe flange gaskets to prevent the flow of gas or liquid in either direction
Bump Calibration Check (Functional)	Applying a known gas (per manufacturer's directions) to verify that the meter is working
Cold Cutting	The practice of using non-spark producing tools to cut or drill through piping, equipment, or vessels that have the potential to contain a flammable substance (examples of prohibited tools: electric drill, electric saw, etc.)
Combustible Gas and Oxygen Monitor	An approved direct-reading instrument that measures oxygen levels and combustible atmospheres



Term	Definition
Combustible Material and Flammable Material	Substances that will support combustion once ignited
Competent Person	A person capable of identifying existing and predictable hazards dangerous to personnel and who has authorization to take prompt corrective measures to eliminate them
Confined Space	A space that has all three of the following criteria: <ul style="list-style-type: none"> <li>• Large enough and so configured that an employee can physically enter</li> <li>• Limited or restricted means for entry or exit</li> <li>• Not designed for continuous employee occupancy</li> </ul>
Control of Work (CoW)	Processes and systems used to control work activities (i.e., the power to authorize tasks and work activities)
Craft Crew Leader	A contractor or BP employee who is performing work under the WCC governed by the Energy Isolation Procedure, who is responsible for inspecting and approving installed EIDs, and for maintaining accountability for other Affected Employees through control of the WCC This person is assigned by the Issuing Authority
Craft Crew Leader Lock	A lock issued by the IA to the Craft Crew Leader and applied to the Lock Box after the Isolator/Authorized Employee has placed the Isolation Key in the Lock Box
Critical Deviation	Instances where a task change fails to meet any requirement or obligation established in the job plan
Designated Alternate	Person authorized in writing by a supervisor to represent that person in completing the requirements of this section. The Designated Alternate assumes all of the responsibilities of the person they are representing in relation to this chapter
Double Block and Bleed - (DBB) - Two Valves	Closure of two block valves in series with an intermediate bleed to a safe location
Double Block and Bleed - Single Valve with Double Seals	Closure of double seal valves with body drains to a safe location
Electrical Technicians	Personnel who have received training and are competent to isolate equipment involving less than 600 volts
Emergency Shutdown (ESD)	The immediate stoppage of all process equipment by the use of manual activation stations or other automatic means

Term	Definition
Energy Isolating Device (EID)	Mechanical device that physically prevents the transmission or release of energy (e.g., a manually operated electrical circuit breaker, physical disconnect, a disconnect switch, slip blind, a line valve, a block, or any similar device used to block or isolate energy) Does NOT include push buttons, selector switches, PLC Logic bypasses or other control circuit type devices
Energy Source	Any electrical, mechanical, hydraulic, pneumatic, gravitational, chemical, nuclear, thermal, or other energy source that could cause injury
Engulfment	The surrounding and effective capture of a person by a liquid or finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing
Entry	The action by which a person passes through an opening into a confined space. Entry is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the confined space. Entry can occur both during work and during preparation for work
Fire Watch	Personnel who are trained in the use of fire extinguishers and authorized and competent in gas testing
Habitat	Safe Welding Enclosure custom-designed and built to fit each particular situation without disrupting or altering the area or existing equipment. The enclosure is constructed according to OSHA and Minerals and Management Service (MMS) guidelines and directives. MMS approval is required for the use of Habitats
Hazardous Area (Classified Area)	<p>Class I, Division 1 is designated as:</p> <ul style="list-style-type: none"> <li>• A location where ignitable concentrations of flammable gases or vapors exist under normal operating conditions</li> <li>• Where ignitable concentrations of gases may frequently exist due to repairs, maintenance, or leakage</li> <li>• Where breakdowns or malfunctioning equipment or processes might release ignitable concentrations of flammable gases or vapors, and might also cause simultaneous failure of electrical equipment</li> </ul> <p>Class I, Division 2 is designated as:</p> <ul style="list-style-type: none"> <li>• A location where volatile flammable liquids or vapors are handled, processed or used and are normally confined within closed containers or systems</li> <li>• Where ignitable concentrations of gases or vapors are normally prevented by positive mechanical ventilation and which may become hazardous if this ventilation failed</li> <li>• Where the location is adjacent to a Class I, Division 1 location which might communicate ignitable concentrations of flammable gases or vapors unless prevented, by adequate positive</li> </ul>

Term	Definition
	pressure ventilation from a source of clean air and effective safeguards against ventilation failure are provided
Hazardous Atmosphere	<p>An atmosphere that may expose personnel to the risk of death, incapacitation, impairment of ability to self-rescue (escape unaided from a permit space), injury, or acute illness from:</p> <ul style="list-style-type: none"> <li>• Oxygen deficiency where oxygen levels are below 19.5%</li> <li>• Oxygen excess where oxygen levels exceed 23.5%</li> <li>• Flammable gas/vapor above 0% of the Lower Explosive Limit</li> <li>• Airborne combustible dusts at a concentration that meets or exceeds its Lower Flammable Limit (LFL)</li> <li>• Atmospheric concentrations containing a toxic substance above the OSHA or ACGIH recommended exposure levels, whichever is more stringent</li> <li>• Naturally Occurring Radioactive Material (NORM) above 50 <math>\mu\text{R/hr}</math></li> <li>• Any other atmospheric condition that is Immediately Dangerous to Life or Health (IDLH)</li> </ul>
Hot Tap	A procedure used in the repair, maintenance, and services activities which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections or appurtenances
Hot Work	Welding, cutting, grinding, hot tapping, working with open flame or spark producing devices (excluding non-intrinsically safe electrical tools, cell phones, cameras, etc)
Isolation	A process of physically interrupting and/or, disconnecting pipes, lines, and energy sources from the equipment
Isolation Control Certificate (ICC)	A form used to record all the isolation points and relevant engineering diagram(s) demonstrating their location for an energy isolation task
Isolation Locks	A set of multiple locks that are operated by a single key to be applied to each EID. These locks are to be used for energy isolation purposes only
Isolation Tag/LOTO	A prominent warning device, such as a tag and a means of attachment, which can be secured to an energy isolating device and the equipment being controlled shall not be operated until the tagout device is removed
Isolator/Authorized Employee	A person who locks out and/or tags out machines and equipment in order to perform service or maintenance on that machine or equipment. An Isolator/Authorized Employee becomes an Affected Employee when that employee's duties include performing service or maintenance

Term	Definition
Issuing Authority (IA)	Issuing authorities are responsible for management of the permit to work process within their defined area and skill set. The Issuing Authority is normally a leadership position within a particular discipline (Engineers, Rig Management, Team Leaders, Lead Techs and Tech 1's). There may be more than one issuing authority at a site or premises.
Issuing Authority Lock	A lock maintained by the Issuing Authority responsible for the energy isolation, which will be used for Lock Box control
Job Safety Environmental Analysis (JSEA)	A job related safety and environmental analysis that is intended to identify hazards and provide actions to mitigate known hazards with a particular task
Lock Box	Specific means with multiple locking capabilities used to secure the keys from isolation locks that are in service
Lock Box Station	A location which houses multiple Lock Boxes and is located in a designated area within the facility
Lockout	The placement of a locking device on an energy isolating device confirming that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed
Lower Explosive Limit (LEL)	Minimum concentration of a particular combustible gas or vapor necessary to support its combustion in air
Management of Change (MOC)	An established means of managing and controlling physical, chemical, organizational, process, or administrative changes
Minor Change	Instances where an additional step, risk, or mitigation is added to the JSEA, but does not alter the job plan
Multiple Lockout Device	A lockout device which accepts more than one lock
Non-Permit-Required Confined Space	A confined space that does not contain any of the four criteria that constitute a permit-required confined space
Offshore Installation Manager (OIM) or Offshore Production Manager (OPM) or Onshore Facility Manager	Person (or their designated alternate) having overall responsibility for the implementation of the Control of Work Policy at the installation
Performing Authority (PA)	The Performing Authority is the responsible person for the activity being carried out under the WCC. The Performing Authority may be the person carrying out the task or may be supervising a group of people conducting the job. The Performing Authority can be responsible for more than one task at any one time, providing the tasks can be safely managed concurrently
Permit to Work (PTW)	Management system used to understand, approve, and process identified work activities in a safe manner

Term	Definition
Permit-Required Confined Space	<p>A Confined Space that has one or more of the following characteristics:</p> <ul style="list-style-type: none"> <li>• Contains or has a potential to contain a hazardous atmosphere</li> <li>• Contains a material that has the potential for engulfing an entrant</li> <li>• Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section</li> <li>• Contains any other recognized serious safety or health hazard</li> </ul>
Person in Charge (PIC)	BP employee or designated BP representative directly responsible for the operation or field location. The PIC can be an operations supervisor or designated alternate, platform operator, facility engineer, drilling superintendent, construction representative, or drilling representative
Personal Isolation	An isolation intended for a short duration task with relatively low risk and where the completion of an ICC is considered to add no significant value in terms of risk reduction. These isolations can only be carried out by a competent discipline Isolator/Authorized Employee and they are only valid for one shift
Plate Insertion	Insertion of a blind between bolted or clamped flanges
Production Area	Areas where flammable petroleum gas, volatile liquids, or sulfur are produced, processed (e.g., compressed), stored, transferred (e.g., pumped), or otherwise handled before entering the transportation process
Production Operations	Any operations not specifically mentioned above that are necessary to produce, separate, and transfer the custody of oil and gas
Rescue Service Personnel	The personnel designated to rescue employees
Senior Qualified Electrical Person (SQEP)	A person authorized to carry out duties incidental to the generation, transformation, distribution and use of electrical power equal to or greater than 600V for that location. The person shall have sufficient technical knowledge and experience of the system for which they are authorized so as to avoid danger
Simultaneous Operations (SIMOPs)	Conducting independent operations in which the events of any one operation may impact the safety of personnel or equipment or the environment of another operation
Single Valve Isolation (SVI)	Closure of a single valve, or closure of a number of single valves in series, where there is no intermediate bleed

Term	Definition
Spark-Producing Devices	A device that may create a source of ignition by generating a spark The following are examples of a spark-producing device: <ul style="list-style-type: none"> <li>• Live electrical work, including opening energized electrical junction boxes, changing light bulbs and use of electric drill and saws</li> <li>• Welding machines</li> <li>• Performing shot or sand blasting</li> <li>• Use of non-intrinsically safe electrical tools, cell phones, cameras, etc</li> </ul>
Spectacle Blind	A combination blind and spacer, formed from the same piece of material, that is often a permanent part of the line and is taken out and the other end inserted, depending upon whether or not flow through that line is desired
Tagout Device/Isolation Tag	A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled shall not be operated until the tagout device is removed. Securing device shall be able to withstand 50-lbs pull such as a nylon cable tie These tags can be generated by the ISSOW program or purchased if ISSOW is not available
Tapped Blind Flange	A fully-rated pipefitting used to close the flanged end of an open pipe or valve with a threaded tap for installing a valve
Well Bay	The area defined by the line connecting the wellheads so that all wellheads are on the line or inside the encompassed area. The area could encompass multiple decks depending on the design of the facility
Work Control Certificate (WCC)	ISSOW terminology for a work permit

## C Overview

### C.1 Twelve Elements of Control of Work (CoW)

#### C.1.a Element 1 - Written Policy

Element 1 of the CoW policy states ***"A written policy shall exist describing the CoW process"***.

This element confirms the CoW Policy and associated procedures have been issued in accordance with a Document Control Management System. Any changes or developments are subject to a formal Management of Change (MOC) control process before authorization and adoption.

CoW related documents are part of the GoM SPU HSSE Document Control System.

### C.1.b Element 2 - Defined Accountability

Element 2 of the CoW policy states ***"All identified roles within the CoW Policy and associated procedures shall have defined accountabilities"***.

This element confirms that the roles required to implement the CoW process are identified. The individuals who carry out these roles shall demonstrate, through competency assessment, that their accountabilities are understood and accepted.

Position	Responsibilities
Single Point of Accountability	The HSSE Director is the single point of accountability for the performance of the GoM CoW policy The OIM/Site Managers are the single point of accountability for the implementation of the GoM CoW Policy
Maintainer	The HSE Programs Manager is responsible for the upkeep and integrity of GoM CoW policy
Adjudicator	The HSSE Director is responsible for authorizing and approving changes to the GoM CoW policy
Technical Authority	The CoW Technical Specialist is responsible for confirming the accuracy and integrity of technical content and changes to the GoM CoW policy
Document Control	The HSSE Document Controller is responsible for establishing and maintaining control of the document through the DCMS

### C.1.c Element 3 - Training

Element 3 of the CoW policy states ***"All persons involved in the CoW process shall be appropriately trained and competent to carry out their roles"***.

The intent of this element is to provide assurance that everyone involved with the CoW process has the required training and level of competency to apply the process. The GoM HSSE Training matrix identifies the required training for the roles involved with the CoW process. Upon completing the training, a written competency assessment shall be performed by a competent person to assure the effectiveness and understanding of the course material. The VTA system shall be used to maintain training records and schedule training based on the requirements of the GoM HSSE Training Matrix.

If someone is absent from an operational role in the CoW system for more than six months, they shall undergo both refresher training and competence reassessment. This training can occur at the facility or in a training room setting.

### C.1.d Element 4 - Task Identification and Interaction

Element 4 of the CoW policy states ***"Planning and scheduling of work shall identify individual tasks and their interaction"***.

This element confirms that the planning and scheduling of work delivers an integrated planning function that accurately reflects the work to be carried out, the use of resources, and the time period required for the safe completion of work.

Each location shall have a documented work planning process (eg. IFP) that takes into account the time required for CoW activities. In particular, hazard identification, risk assessment,

planning, scheduling, and preparation shall be integral to the work planning process for any activity (i.e., Maximo, Integrated Field Planning (IFP)). This includes the identification of competent personnel and suitable equipment required for safe execution.

When work is dependent on or affects another activity, the planning, scheduling and implementation shall be coordinated, and priorities of execution defined through the Asset's Simultaneous Operations (SIMOPs) plan.

### C.1.e Element 5 - Risk Assessment of Tasks

Element 5 of the CoW policy states ***"Tasks shall not be conducted without first being risk assessed"***.

The method of risk assessment performed is dependant upon the level of complexity of the task, the potential hazards, the likelihood of those hazards resulting in unintended consequences, and the extent of the controls and mitigation needed to confirm that the work can be completed safely.

Job Safety and Environmental Analysis (JSEA) is the method GoM utilizes to identify, analyze and record the steps involved in performing a specific job. Also included are the existing or potential safety and health hazards associated with each step and the recommended action(s)/procedure(s) that will eliminate or reduce these hazards and the risk of a workplace injury or illness.

#### C.1.e.1 JSEA Process

The basic issues that shall be covered by the JSEA process include:

- The work site shall be inspected by a competent person as a pre-requisite for conducting the Risk Assessment
- All JSEAs shall be reviewed at the work site unless barriers, such as high noise levels, hamper the discussion
- All personnel involved in the task shall be present for the review (i.e., all workers identified on the WCC and JSEA). This shall be recorded by signing the JSEA cover sheet or the ICC Work Party Declaration
  - For tasks where multiple JSEAs may be available (e.g. a contractor JSEA and BP JSEA), a single JSEA meeting will be conducted to ensure a single, consistent review of the information from both JSEAs

**NOTE:** Contractors can sue their company's JSEA form, provided it meets BP Standards, i.e. steps, hazards, controls, responsible party, and signature page. The complete form shall be electronically attached to the WCC within ISSOW.

- Routine tasks may be covered by a procedural approach, providing a documented risk assessment (e.g. JSEA) has been conducted
- All equipment used in performing work shall be assessed as fit for purpose by a competent person through inspection and/or review of any certification
- To reduce risk, Risk Assessments shall consider these measures in the following order:
  - Elimination
  - Substitution
  - Control
  - Mitigation
- Develop contingency plans based on the potential emergencies and identified risks before commencing work



The following outlines the basic steps that shall be part of a JSEA:

- Assemble the work team and review the information available to plan the work. If the JSEA is prepared in advance of the work, the JSEA shall be reviewed with the work team prior to the job commencing
- Identify all of the personnel, equipment, PPE, and procedures required to perform the task. Add this information to the JSEA as appropriate
- As a group, define the task (scope of work). The IA shall ensure appropriate documents are identified and available. This includes, but is not limited to:
  - Operating procedures
  - P&ID's
  - MSDS sheets
  - Isolation Control Certificates
- Using the procedures, documents, and knowledge of the work team, clearly define how the work will be performed and the sequence of events. Identify key steps and sequence of events to cover all required work from start to finish. When agreed, list the key steps on the JSEA form in the appropriate column
- Review with the work team all key steps identified and develop a list of potential hazards for each key step activity. List these hazards on the JSEA form in the appropriate column
  - Identify any potential hazards, personnel exposure areas and environmental issues for each key step of the work (examples include pressure, chemicals, weather, adjacent work and activity, slipping, working at heights). Pay particular attention to energy sources observed in the work area
  - For each potential hazard or risk identified, list the mitigation or protection method to be used to control each identified hazard. The work team shall be aware of these controls and risk mitigation processes for the task to ensure a safe working environment
  - The Performing Authority or person performing the work assigns a work team member to be responsible for the implementation of each key step identified. The assigned persons are then responsible for the safety and environmental protection for their assigned key steps

**NOTE:** Remember, that everyone is responsible for stopping the job if an unsafe act or condition is identified

- After completing the draft JSEA, the work team shall visit the job site and walk through the key steps and sequence of events listed on the draft JSEA, to determine if any new hazards, information, additions, or changes are necessary
- It is essential that the work team carefully consider and identify the presence of potential energy sources during the JSEA process. Using the combined senses of the work team, add hazards identified by sight, hearing, smell, and touch while at the work site. Each energy component below shall be considered to ensure a safer work environment.

These hazards in need of recognition include:

- Electrical energy sources
- Energy sources of pressure
- Gravitational energy considerations (overhead activity, lifting equipment, etc.)
- Energy of motion (rotating equipment, centrifugal forces, moving objects, etc.)
- Chemical energy sources
- Heat and cold potentials for exposure (radiant heat, piping ice-over, etc.)

- Biological considerations, exposures, and associated energy (NORM, oxygen deficiency, etc.)
- Radiation hazards and associated energy
- Once the JSEA is reviewed at the job site and amended as necessary, the finalized JSEA shall be signed by the PA, IA, or their designee. All work team members shall sign off on the JSEA before beginning work activity or implementation of control measures

**NOTE:** Remember, as the scope of work changes, you are required to stop the job, re-evaluate the hazards of the work, and update the JSEA form as agreed.

- When work is interrupted, the site conditions and appropriate control measures shall be reassessed as compliant with the current WCC by a competent person prior to the work starting. Interruptions may include meal breaks, smoke breaks, alarms, emergency situations and shift changes.
- When deviations are considered, the job shall be stopped and the JSEA modified to incorporate the new procedure and any additional risks. This ensures that work is performed and work improvements are documented and implemented by affected parties
  - These changes shall be reviewed by the IA before work can resume
  - Make sure all of the personnel participating in the work are represented in the JSEA process.

**NOTE:** A new JSEA meeting shall occur for personnel changes

### C.1.f Element 6 - Permit Requirement

Element 6 of the CoW policy states ***"Before conducting work that involves confined space entry, work on energy systems, ground disturbance, hot work, or other potentially hazardous activities, a permit shall be obtained"***.

This element confirms that a formal process of "permitting" is utilized for the specific high risk work mentioned above to allow such work to be safely carried out using the appropriate level of control. Sections E (Permit to Work), F (Confined Space Entry) and G (Energy Isolation) describe the GoM's process for permitting this work.

### C.1.g Element 7 - Scope, Hazard Controls, and Mitigations Communication

Element 7 of the CoW policy states ***"The scope, hazards, controls and mitigations shall be communicated in writing and signed off by all involved in the task"***.

This element confirms that everyone involved in a work task is aware of the identified hazards, likelihood of those hazards being realized, and the controls and mitigation actions which have been applied in order to reduce the possibility of an incident or accident. Personnel shall sign permitted tasks.

Element 7 of the Control of Work Group Standard states that "A copy of the WCC shall be retained on site for the duration of the work for the benefit of the workforce".

### C.1.h Element 8 - Permit Monitoring and Managing

Element 8 of the CoW policy states ***"All ongoing work requiring a permit shall be regularly monitored and managed by a responsible person"***.

This element confirms that the IA or PA shall visit and inspect the work site at least twice per shift to make certain that the conditions detailed on the WCC have not been compromised. It also confirms that only the work described on the WCC is being carried out and that the work is continuing in a safe manner.

Element 8 of the Control of Work Group Standard requires that a copy of all permits and associated certificates currently in force shall be held at a suitable location (e.g., control room, the site office, or electronically).

Effective handover of the status of ongoing work and controls is a requirement of Element 8 of the Control of Work Group Standard.

### C.1.i Element 9 - Worksite Condition

Element 9 of the CoW policy states ***"The worksite shall be left in a safe condition on completion of activity or interruption of the work"***.

This element confirms that no potential sources of accidents remain and that equipment can be safely brought back into service without incident prior to the WCC being closed on completion or interruption of any work activity. The work site shall be visited by the IA and PA to confirm it has been left in safe condition.

### C.1.j Element 10 - Control of Work Process Auditing

Element 10 of the CoW policy states ***"The CoW process shall be subject to a program of regular auditing"***.

Regular CoW audits shall be conducted to review and make recommendations for improvements on the correct application of the CoW process, including documentation, controls, training and competency. Results of the audits shall be communicated to the site leadership team with a requirement that corrective action plans are developed and those actions are closed out in a timely manner.

There are two categories of CoW audits: system audits that evaluate the adequacy of policies and procedures and field audits that assess the implementation of these policies and procedures.

#### C.1.j.1 System Audits

CoW system audits verify that GoM policies and procedures meet the CoW Standard. The following table summarizes the types of system audits performed in GoM Operations.

Audit	Scope	Audit SPA	Tool	Frequency
SPU System Audit	GoM-wide	HSSE	CoW Progress Assessment Tool (Attachment A)	Annual
GoM Comprehensive HSSE Audit	Asset	GoM HSSE Audit Team	S&O Audit Team Control of Work Audit Protocol (Attachment B)	Every 3 years but not on the same year as the Group Safety and Operations Audit
BP Group Safety & Operations (S&O) Audit	Performance Unit	BP Group S&O Audit Team	S&O Audit Team Control of Work Audit Protocol (Attachment B)	Every 3 years but not on the same year as the GoM Comprehensive HSSE Audit

Results of system audits shall be reviewed with the applicable leadership teams, and the actions identified shall be assigned in Tr@ction to confirm timely close-out.

### C.1.j.2 Field Audits

Monitoring the CoW process in the field verifies that the CoW processes are properly implemented. Audits will cover all aspects of the work process lifecycle (planning, risk assessment, work authorization, job execution and post-job activities). Audits shall involve a cross-section of ongoing activities (e.g., hot work, cold work, energy isolation and confined space entry WCCs).

Offshore or field leadership team members shall perform audits of the CoW processes and systems at the site. Each facility is required to complete 5 CoW Field Audits per 2 weeks; except, for days when there are no WCCs issued. Houston-based Leadership Team members are expected to participate in CoW Field Audits with the Offshore or field leadership team members.

For locations with ISSOW implemented, the CoW Field Audits shall be documented using the audit feature of ISSOW. For locations without ISSOW, Tr@ction shall be used to document CoW Field Audits. The areas to be evaluated in the field audit are Specification of Work, Planning and JSEA, Authorization and Issue, Job Execution, Supplementary Certificates, and Actions.

### C.1.k Element 11 - Lessons Learned

Element 11 of the CoW policy states ***"Internal and external lessons learned that impact the CoW process shall be captured, incorporated, and shared"***.

This element confirms that lessons on how to improve the CoW process and the safe means of carrying out work are made available to and used by all facilities across the BP Group.

Refer to the GoM Incident/Alert Lessons Learned Procedure for information to facilitate the sharing of lessons learned from within BP and the industry.

### C.1.l Element 12 - Obligation and Authority to Stop Unsafe Work

Element 12 of the CoW policy states ***"The CoW policy and associated procedures shall make it clear to everyone that they have the obligation and authority to stop unsafe work"***.

Employees and contractors have the authority and obligation to stop any task or operation where concerns or questions regarding the control of HSSE risk exist.

No work will resume until all "stop work" issues and concerns have been adequately addressed.

**NOTE:** Any form of retribution or intimidation directed at any individual or company for exercising their authority as outlined in this program will not be tolerated.

#### C.1.l.1 Stop Work Key Responsibilities

Position	Responsibilities
Employees and Contractors	Initiate a "stop work" intervention, support the intervention of others, and properly report all "stop work" actions
HSSE Personnel	Monitoring participation with the requirements of this program; maintaining associated documents (eg. STOP and SOC Cards), processes and training materials; identifying trends; sharing lessons learned and publishing required scorecards

Position	Responsibilities
Leadership Team	Establish the clear expectation to exercise Stop Work Authority (SWA), create a culture where SWA is exercised freely, resolve SWA conflicts when they arise and hold accountable anyone who chooses not to comply with established SWA policies

### C.1.1.2 Intervention Protocol

In general terms, the Stop Work Authority (SWA) process involves a stop, notify, correct, and resume approach for the resolution of a perceived unsafe work action or condition.

Much like behavior-based safety processes, a workforce that clearly understands how to initiate, receive and respond to a "Stop Work" intervention is more likely to participate.

The following steps provide guidance for "Stopping Work":

1. When a person identifies a perceived unsafe condition, act, error, omission, or lack of understanding that could result in an undesirable event, a "Stop Work" intervention shall be immediately initiated with the person(s) potentially at risk
2. If the "Stop Work" issue cannot be resolved immediately, work shall be suspended until proper resolution is achieved. When opinions differ regarding the validity of the "Stop Work" issue or adequacy of the resolution actions, the location's IA shall make the final determination
3. Positive feedback shall be given to all affected employees regarding resolution of the "Stop Work" issue. Under no circumstances shall retribution be directed at any person(s) who exercises in good faith their SWA.
4. All "Stop Work" interventions and associated detail shall be recognized in the daily meetings at each facility, such as the Morning Meeting and CoW/SIMOPs Meeting. "Stop Work" actions that are associated with a Near Miss or greater type of incident shall be reported per the GoM's Incident Notification and Investigation Practice and documented in Tr@ction.

### C.1.1.3 Follow Up

The desired outcome of any "Stop Work" intervention is to address HSSE concerns to the satisfaction of all involved persons prior to the resumption of work. Although most issues can be adequately resolved in a timely fashion at the job site, occasionally additional investigation and corrective actions may be required to identify and address underlying causes.

"Stop Work" interventions that required additional investigation or follow-up will be handled utilizing existing protocols and procedures for incident investigation and follow-up.

### C.1.1.4 Training

Training regarding this SWA Policy and Program shall be conducted as part of all new employee and contractor orientations. Additionally, a review of the SWA Policy shall be completed as part of all field location safety briefings and regularly in safety meetings.

## D Key Responsibilities

Position	Responsibilities
Affected Issuing Authority	<ul style="list-style-type: none"> <li>• Review and countersign the WCC from the adjoining area to confirm that they are aware of the task and agrees that the hazards will be effectively managed with the specified controls</li> <li>• Be aware of the duration and types of all external isolations affecting the area under their responsibility, or isolations under their control affecting other areas</li> <li>• Communicate with personnel working within their area who may be affected by the adjacent activities to confirm that they understand the potential impact on their activities</li> <li>• Identify other areas which might be affected by the work and inform the Affected IA(s) of the proposed work</li> </ul>
Attendant/Stand-By Person (CSE requirement)	<ul style="list-style-type: none"> <li>• An individual stationed outside one or more permit-required confined spaces who monitors authorized entrants and who performs all Attendant's duties assigned in the location's permit-required Confined Space program</li> <li>• Knows the hazards that may be faced during entry, including information on the mode, signs or symptoms, and consequences of the exposure</li> <li>• Is aware of possible behavioral effects of hazard exposure to Authorized Entrants</li> <li>• Continuously maintains an accurate count of authorized personnel in the permit-required confined space</li> <li>• Remains outside the permit-required Confined Space until relieved by another attendant</li> <li>• Communicates with authorized personnel as necessary to monitor entrant status and to alert them of the need to evacuate the space</li> <li>• Monitors activities inside and outside the space to determine if it is safe to remain in the space</li> <li>• Summons rescue and other emergency services as soon as the attendant determines that authorized personnel may need assistance to escape from permit-required Confined Space hazards</li> <li>• Warns all unauthorized persons to stay away from the permit-required confined space</li> <li>• Performs non-entry rescues as specified by the location's rescue procedure</li> <li>• Performs no duties that might interfere with the Attendant's primary duty to monitor and protect the Authorized Entrants</li> </ul>

Position	Responsibilities
Authorized Entrant (CSE Requirement)	<ul style="list-style-type: none"> <li>• Personnel (BP or contract) who are authorized by the Entry Supervisor and Issuing Authority (IA) to enter a confined space. The names of all authorized entrants shall be on the WCC.</li> <li>• Knows the hazards that may be faced during entry, including information on how exposure might occur, signs and symptoms of exposure, and their consequences</li> <li>• Is properly trained in the tasks and procedures they are required to perform</li> <li>• Uses equipment according to manufacturer's recommendations</li> <li>• Communicates with the Attendant as necessary to monitor status of the space and alert them of the need to exit the space</li> <li>• Alerts the Attendant whenever an entrant recognizes any warning sign or symptom of exposure to a dangerous situation or detects a prohibited condition</li> <li>• Exits from the Confined Space as quickly as possible whenever any of the following occur:               <ul style="list-style-type: none"> <li>- An order is given to evacuate by the Attendant or the Entry Supervisor</li> <li>- The entrant recognizes any warning sign of a dangerous situation or symptom of exposure</li> <li>- The entrant detects a prohibited condition</li> <li>- An evacuation alarm is activated</li> </ul> </li> </ul>
Competent Person	<ul style="list-style-type: none"> <li>• Identifies existing and predictable hazards dangerous to personnel and takes prompt corrective measures to eliminate them</li> </ul>
Control Room Operators	<ul style="list-style-type: none"> <li>• Bypasses and reinstates sections of the fire and gas detection or protection systems as required by WCCs and in accordance with requests made by the IA</li> <li>• Keeps the bypass register up to date</li> <li>• Is aware of all hot work being conducted on the facility by electronic means or by signing the risk assessment (hard copy)</li> </ul>
Craft Crew Leader (Energy Isolation requirement)	<ul style="list-style-type: none"> <li>• Installs their assigned lock on the lockbox</li> <li>• Visually verifies (at the site) that energy control points are isolated</li> <li>• Signs and dates the ICC Work Party Declaration Form as Craft Crew Leader (CCL)</li> <li>• General oversight and responsibility for:               <ul style="list-style-type: none"> <li>- Meeting with the Isolator/Authorized Employee to obtain necessary WCCs before beginning any work</li> <li>- Reviewing the isolation of all energy sources at the beginning of each shift with the Isolator/Authorized Employee through a visual verification of all EIDs</li> <li>- Conducting an energy isolation safety review with each authorized employee in the crew and offers a visual verification before beginning any maintenance activity on the equipment.</li> <li>- This review shall include the following:</li> </ul> </li> </ul>

Position	Responsibilities
	<ul style="list-style-type: none"> <li>▪ Identifying each EID and its location</li> <li>▪ Explaining the associated potential hazards</li> <li>- Applies the Craft Crew Leader Lock issued by the IA</li> <li>- Confirms that all crew members have applied a personal lock or signed the ICC Work Party Declaration prior to beginning work</li> <li>- Confirms that the area is clean at completion of job</li> <li>• Verifies the crew's compliance with the energy isolation procedure</li> </ul>
Entry Supervisor (CSE requirement)	<ul style="list-style-type: none"> <li>• The person responsible for:               <ul style="list-style-type: none"> <li>- Determining if acceptable entry conditions are present at a permit-required Confined Space</li> <li>- Overseeing entry operations</li> <li>- Terminating entry as required by this program</li> </ul> </li> <li>• Knows the hazards that may be faced during entry, including information on the method, signs or symptoms, and consequences of the exposure</li> <li>• Verifies that all tests specified by the WCC have been conducted and that all procedures and equipment specified by the WCC are in place before signing the WCC and allowing entry to begin</li> <li>• Verifies that all persons involved in permit entry are properly trained and competent in their assigned duties</li> <li>• Verifies that rescue services are available and that the means for summoning them are operable</li> <li>• Terminates the entry and cancels the WCC when the entry operations specified by the WCC have been completed or when a condition not allowed under the entry WCC arises in or near the confined space</li> </ul>
Fire Watcher/ Authorized Gas Tester (AGT)	<p><b>NOTE:</b></p> <ol style="list-style-type: none"> <li>1. Firewatchers/AGT are personnel who are trained in the use of fire extinguishers and authorized in gas testing for the premises.</li> <li>2. AGTs can only take on the role when they are authorized by the OIM.</li> </ol> <ul style="list-style-type: none"> <li>• Shall be competent on the specific monitor in use, egress routes and safety equipment location(s)</li> <li>• Authorized to test for the presence of flammable vapors, toxic gas and oxygen in support of the WCC or Entry Certificate as requested by the Issuing Authority</li> </ul> <p>Fire Watch responsibilities:</p> <ul style="list-style-type: none"> <li>• Shall have no other assigned duties</li> <li>• Has Personal Protective Equipment needed to perform work safely</li> <li>• Wears a brightly colored vest, (i.e., orange) as identification</li> <li>• Understands operation and limitations of combustible gas monitor</li> <li>• Shall continuously monitor designated area with a LEL monitor during the process of the WCC</li> </ul>



Position	Responsibilities
	<ul style="list-style-type: none"> <li>• Stops work if combustible gas monitor registers over 0 percent LEL</li> <li>• Stops Hot Work if sparks, flames, or hot metals are projected outside the permitted area or when flammable gases are suspected</li> <li>• Has an inspected fire extinguisher in proper operating condition in their possession</li> <li>• Is familiar with the facility emergency notification procedures</li> <li>• Knows access and exit procedures</li> <li>• Knows potential sources of hydrocarbons in the area</li> <li>• Knows of non-hydrocarbon hazards which may be present</li> <li>• Remains on location 30 minutes after work is completed to watch for possible smoldering fires</li> </ul>
HSSE Advisor	<ul style="list-style-type: none"> <li>• Provides consultation to facility personnel concerning CoW requirements</li> <li>• Participates in investigations of incidents on the facility</li> </ul>
Isolator/Authorized Employee	<p><b>NOTE:</b> The Isolator/Authorized Employee can also be the Performing Authority if competent. In all cases the isolation shall conform to the Energy Isolation Standards section of the Safe Practices Manual</p>
	<ul style="list-style-type: none"> <li>• Demonstrates the integrity of the isolation to the IA and PA, including recording details of lock, tag and blind identifications on the associated ICC</li> <li>• Monitors the integrity of isolations while they are in force</li> <li>• Verifies the work is compliant with electrical or other power isolation requirements</li> <li>• De-isolates each point when the task is complete (unless continuing isolation is required by another WCC, records this on the de-isolation section of the ICC and removing all associated locks and tags</li> <li>• Follows the requirements of the GoM Safe Practices Manual's Piping Isolation Requirements Flowchart and Safeguards (Figure 6 in Energy Isolation section)</li> <li>• Follows the site specific start-up and shut-down procedures for the given piece of equipment prior to isolating that equipment</li> </ul>
	<p><b>NOTE:</b> Each EID shall be locked and tagged by the Isolator/Authorized Employee</p>
	<ul style="list-style-type: none"> <li>• Tests the isolated equipment to verify it in a zero energy state</li> <li>• Inspects the area to ensure it is cleaned up and safe</li> <li>• Obtains permission from Issuing Authority to de-isolate</li> <li>• Follows the start-up procedure to safely return the equipment to service</li> <li>• Conducts a minimum of two site inspections per shift</li> <li>• Returns all locks to the designated location</li> </ul>

Position	Responsibilities
Issuing Authority (IA)	<p><b>NOTE:</b> Issuing authorities are responsible for management of the Permit to Work process within their defined area and skill set. The Issuing Authority is normally a leadership position within a particular discipline (Engineers, Rig Management, Team Leaders, Lead Techs and Tech 1's). There may be more than one Issuing Authority at a site or premises</p>
	<p><u>General CoW Responsibilities</u></p> <ul style="list-style-type: none"> <li>• Before Work <ul style="list-style-type: none"> <li>- Is familiar with the provisions of the CoW Policy</li> <li>- Has responsibility for the safe control of non-routine work activities within their defined area and skill set in accordance with the Permit to Work system, including the issue of all WCCs and associated Certificates</li> <li>- Reviews the risk assessment to ensure the hazards were adequately identified, assessed and mitigated</li> <li>- Works closely with the Performing Authority when planning WCCs, to confirm that appropriate controls are identified for each identified hazard</li> <li>- Conducts a worksite inspection to ensure all the appropriate control measures are in place prior to a WCC being issued</li> <li>- Verifies with the Performing Authority that they fully understand the scope of the task and that other members of the work party have been fully briefed via a JSEA Review</li> </ul> </li> <li>• During Work <ul style="list-style-type: none"> <li>- Prevents other operations from coming in conflict with the permitted work</li> <li>- Conducts worksite inspections at least twice per shift of ongoing permitted activities</li> <li>- Verifies that adequate handovers take place at shift change, crew change or other change out/over of Performing Authorities and Isolator/Authorized Employees</li> <li>- Hands over the current status of WCCs to another competent Issuing Authority when going off-shift or off-days as appropriate</li> <li>- Re-issues all WCCs</li> <li>- Verifies the job is performed per the requirements of the WCC and JSEA</li> <li>- Instructs all personnel to stop work if a change occurs that can create an unsafe condition</li> </ul> </li> <li>• After Work <ul style="list-style-type: none"> <li>- Conducts a worksite visit to ensure the area is left safe and tidy</li> <li>- Approves lessons learned and audits</li> </ul> </li> </ul>
	<p><b>NOTE:</b> Worksite visits may be delegated to a direct report who is competent as an IA and has the appropriate skill set for the task</p>
	<p><u>Energy Isolation Specific Responsibilities</u></p>

Position	Responsibilities
	<ul style="list-style-type: none"> <li>• Before Work               <ul style="list-style-type: none"> <li>- Approves isolation design, controls isolation implementation and verifies the agreed isolations are in place prior to allowing an associated WCC to be issued</li> <li>- Witnesses the insertion of blinds to achieve positive isolation when required</li> </ul> </li> <li>• During Work               <ul style="list-style-type: none"> <li>- Maintains the Long-Term Isolations (LTI) Register and ensures audits are carried out as specified</li> <li>- Verifies that completed WCC documents are replaced with new ones if work is planned to continue. If it will not continue, transfer any remaining isolations to the LTI register</li> <li>- Maintains ownership of the key(s) from the Issuing Authority Locks</li> </ul> </li> <li>• After Work               <ul style="list-style-type: none"> <li>- Inspects that the isolations are properly removed after completion of the work and completion of the WCC</li> <li>- Conducts a walk through to verify isolations and tags are removed</li> <li>- Conducts an annual audit to verify the effectiveness of the energy isolation procedure</li> <li>- This audit shall include, but is not limited to:                   <ul style="list-style-type: none"> <li>▪ Reviewing the procedure with the Isolator/ Authorized Employee implementing the procedure</li> <li>▪ Identifying effective corrective actions for identified deficiencies</li> <li>▪ Conducting an inventory of Isolator/Authorized Employee locks and Issuing Authority locks to verify integrity of system</li> </ul> </li> </ul> </li> </ul> <p><u>Hot Work Specific Responsibilities</u></p> <ul style="list-style-type: none"> <li>• Is familiar with Hot Work safe practices</li> <li>• Is accountable for issuing Hot Work WCCs</li> <li>• Verifies welding and burning equipment has been inspected by a competent person to ensure that it is in good condition</li> <li>• Verifies welders are certified and/or have proven experience</li> <li>• Verifies calibration and bump check of Lower Explosive Level (LEL) monitoring has been conducted</li> <li>• Reviews WCC to ensure necessary gas tests for oxygen explosiveness are conducted</li> <li>• Reviews Gas Testing Log to ensure continuous combustible gas monitoring is conducted</li> <li>• Verifies fire extinguisher(s) and/or other safety equipment have been inspected by a competent person</li> </ul>
Offshore Installation Manager (OIM)	<p><b>NOTE:</b> This role is carried out by competent persons typically at the following level (or equivalent) within the organization - Site Managers, Offshore Installation Managers, Offshore Platform Managers, or their designated alternate.</p>

Position	Responsibilities
	<ul style="list-style-type: none"> <li>• Knows and applies the provisions of the CoW Policy</li> <li>• Implements the overall process of the CoW Procedure in their physical area of responsibility</li> <li>• Appoints new Performing and Issuing Authorities</li> <li>• Authorizes the Issuing Authority, Performing Authority, and Isolator/Authorized Employee as competent to carry out their duties, as described in this document, and confirming that a controlled log of all authorized personnel is maintained</li> <li>• Authorizes all categories of WCCs</li> <li>• Provides all employees access to the CoW procedure</li> </ul>
Performing Authority (PA)	<p><b>NOTE:</b> A Performing Authority (PA) and an Issuing Authority (IA) cannot be the same person (e.g., each Permitted Task shall have separate PAs and IAs).</p> <p>General CoW Responsibilities</p> <ul style="list-style-type: none"> <li>• Before Work <ul style="list-style-type: none"> <li>- Is familiar with the intent of the provisions of the CoW Policy</li> <li>- Initiates the WCC and identify the hazards and control measures for the task being planned</li> <li>- Knows applicable BP and regulatory requirements, policies, standards, and procedures</li> <li>- Conducts a JSEA review to ensure all people involved in the task fully understand the scope of the work, the identified hazards and controls associated with the work and verifies that all participating in the task sign off the JSEA cover sheet or Work Party Declaration</li> </ul> </li> <li>• During Work <ul style="list-style-type: none"> <li>- Complies with the conditions of the WCC</li> <li>- Verifies that only personnel authorized by the WCC participate in the work and no unauthorized interference takes place</li> <li>- Stops and reassesses the work if there are any changes to the initial WCC conditions (these include both changes in the work scope and conditions at the work site)</li> <li>- Reports and interacts regularly with the IA on issues to confirm risks from all hazards continue to be mitigated by controls</li> <li>- Records agreed supplementary controls on the WCC and applies them to the task</li> <li>- Conducts only work covered within the WCC scope</li> <li>- Keeps the worksite in a clean and safe condition during and upon completion of the job</li> <li>- Reports unsafe conditions to IA immediately for evaluation and appropriate action</li> <li>- Conducts adequate handovers with the oncoming PA and IA at shift and crew change periods</li> </ul> </li> <li>• After Work <ul style="list-style-type: none"> <li>- Leaves the worksite in a clean and safe condition</li> </ul> </li> </ul>

Position	Responsibilities
	<ul style="list-style-type: none"> <li>- Captures lessons learned</li> </ul> <p><u>Hot Work Responsibilities</u></p> <ul style="list-style-type: none"> <li>• Is familiar with Hot Work safe practices</li> <li>• Is responsible for safe handling of welding/burning equipment and processes</li> <li>• Participates in the inspection of welding and burning equipment and work area(s)</li> <li>• Uses only industry-approved methods of lead splicing</li> <li>• Attaches torch lighters or strikers to the welding cylinders or carry them in a toolbox or bag. They shall never be carried on oneself</li> </ul>
Permit to Work (PTW) Coordinator (if applicable)	<ul style="list-style-type: none"> <li>• Delegated authority to operate, monitor and control the Permit System</li> <li>• Issues and provides subsequent control of the WCC system for the premises</li> <li>• Conducts routine site tours to monitor WCC application</li> <li>• Confirms the correct WCC and and/or isolation certificate is used</li> <li>• Verifies the correct signs, tags and locks are used</li> <li>• Acts as focal point for all matters relating to WCC issue and control</li> <li>• Attends WCC meetings</li> <li>• Carries out regular audits</li> </ul>
Senior Qualified Electrical Person (SQEP)	<p><b>NOTE:</b></p> <ol style="list-style-type: none"> <li>1. The Senior Qualified Electrical Person (SQEP) is determined by training and qualification in accordance with CMAS. SQEPs will be assigned by the Maintenance Team Leader or equivalent</li> <li>2. High voltage is defined as any voltage greater than or equal to 600 Volts AC</li> </ol> <ul style="list-style-type: none"> <li>• Shall be involved with all electrical work where High Electrical Voltage (HEV) is encountered or anticipated</li> <li>• Responsible for the specification, application, removal, reinstatement, and recording of electrical isolations involving HEV</li> <li>• Shall be involved with Low Voltage (LV) electrical switching and isolations at request of the Issuing Authority (IA), or for their own personal use carry out LV electrical personal isolations</li> <li>• Shall be trained, competent, and shall have documented HEV qualified training</li> </ul>

## E Permit to Work

Electronic ISSOW is the primary system to be used to manage the various types of WCCs and ICCs. For facilities where an electronic version of ISSOW is not operational or available, the paper copies of Permit to Work process and ICC may be used.

Before conducting work that involves confined space entry, work on energy systems, ground disturbance, hot work or other hazardous activities, a WCC shall be obtained. For all locations,

the full range of tasks that shall be controlled by a WCC can be placed into one of the following WCC types:

- Confined Space
- Hot Work
- Cold Work
- Cold Work Breaking Containment
- Electrical Work
- Routine Templates for Hot, Cold, Electrical and Breaking Containment WCC

**The following tasks are specifically controlled by one of the WCC types:**

- Entry in confined spaces
- Welding, torch cutting, hot tapping and other open flame work
- Use of spark producing devices in classified areas (excludes use of spark producing devices in non-classified areas)
- Working on energized electrical circuits, removal of process valves and/or piping.
- Pressure-testing systems in accordance with commissioning process
- Cold Work - breaking containment of lines/vessels and installation of blinds
- Critical lifts
- Startup of facility for commissioning or following major work (does not include startup after shutdowns or process upsets)
- Painting crews
- Removal of handrails or work that prevents the use of main escape/egress routes.
- Installation/dismantling of scaffolding
- Pressure washing above 1500 psi

**Routine tasks that are not controlled using a permit to work system shall be risk assessed and be covered by a procedure.**

- Tasks classified as routine shall be identified.
- Routine procedures and associated risk assessments shall be formally recorded and controlled.
- Procedures and associated risk assessments shall be subject to a program of regular review.
- Persons carrying out activities controlled by procedures shall be trained, assessed as competent to carry out the task and authorized to do so.

**Examples of routine tasks that do not require a WCC, if they meet the above criteria, includes:**

- Testing wells and taking shakeouts. These procedures are verified in CMAS, MSDS reviews, and tasks are approved and scheduled for implementation in the IFP schedule
- Changing orifice plates which is controlled using approved IFP schedule and procedure verification through CMAS
- Chemical handling and performance checks which are controlled through HSSE procedures, MSDS, and CMAS demonstrations
- Unloading groceries governed by SARA/JSEA template, lifting rules and contract requirements.

**NOTE:** OIMs will confirm a regular review of established procedures is conducted to identify improvements and the continual mitigation of hazards.

**NOTE:** Refer to the Permit Decision Tool Technical Reference for assistance in determining the level of control necessary to conduct a given task.

The general Permit to Work process is described in the following WCC Lifecycle Process Table:  
WCC Lifecycle Process Table

Stage	Role	Action
1. Requested	Performing Authority and Team Leader	<ol style="list-style-type: none"> <li>1. Create the WCC</li> <li>2. Look for previous risk Assessments</li> <li>3. Worksite visit</li> <li>4. Identify hazards and controls</li> </ol>
2. Initial Review	Issuing Authority	<ol style="list-style-type: none"> <li>1. Review work request</li> <li>2. Define controls</li> <li>3. Discuss with Performing Authority</li> <li>4. Worksite visit</li> </ol>
3. Authorized	OIM during WCC meeting	<ol style="list-style-type: none"> <li>1. Team review all WCC requests</li> <li>2. Review JSEA and isolations</li> <li>3. Review ongoing jobs - SIMOPS</li> <li>4. Resources reviewed</li> <li>5. OIM authorizes WCC</li> </ol>
4. WCC Preparation	Issuing Authority	<ol style="list-style-type: none"> <li>1. Authorizes Isolations put in place</li> <li>2. Authorizes Controls put in place</li> </ol>
5. WCC Issue	Issuing Authority	<ol style="list-style-type: none"> <li>1. Inspects worksite to ensure permit requirements were fulfilled, identify any problems or material changes that may have been overlooked and could affect the initial assessment</li> <li>2. Verifies controls in place</li> <li>3. Face-to-face discussion with PA</li> <li>4. Issues WCC</li> </ol>
6. WCC Live (Work Execution)	Performing Authority	<ol style="list-style-type: none"> <li>1. Visits worksite - accepts WCC</li> <li>2. Gathers all relevant paperwork</li> <li>3. Toolbox talk (JSEA)</li> <li>4. Work commences</li> <li>5. Ongoing monitoring agreed with IA</li> </ol>
7. Job Complete	Performing Authority	<ol style="list-style-type: none"> <li>1. Worksite clean up</li> <li>2. PA signs off WCC</li> <li>3. PA returns WCC to IA (or permit coordinator)</li> </ol>
8. WCC Complete	Issuing Authority	<ol style="list-style-type: none"> <li>1. IA inspects worksite</li> <li>2. Controls removed and isolations reinstated</li> <li>3. WCC closed and archived by IA</li> </ol>

### **E.1 Hot Work**

The GoM operates in accordance with the Hot Work and Safe Welding Plan approved by the Minerals Management Services (MMS). This section provides guidance for performing hot work and operations involving spark producing devices. Refer to the MMS approved Plan for additional guidance and information regarding welding certifications and inspection of welding machines and associated equipment.

#### **E.1.a Hot Work WCC Activities**

A Hot Work WCC is required for work involving the use of an open flame or spark producing devices. Examples of activities that require a Hot Work WCC are:

- Welding operations - electric arc welding and cad welding
- Torch cutting and other open flame work
- Hot tapping
- Grinding
- Needle gunning
- Work associated with spark producing devices in electrically classified areas; for example:
  - Use of welding machines
  - Shot or sand blasting
  - Using non-intrinsically safe electrical tools and equipment (e.g., power tools, cell phones, cameras, cordless tools, etc.)
  - Live electrical work including, changing light bulbs and use of electric drill and saws

**NOTE:** When lockout/tagout procedures are followed and power is de-energized, a hot work permit is not required for work in electrically classified areas

#### **E.1.b Designated Safe Welding and Burning Area**

A designated Safe Welding and Burning Area is an area that has been designated as safe for Hot Work activities without special precautions. These areas are known to be free of combustible or flammable vapor, gas, liquid, or material during normal operations.

**NOTE:** Safe welding and burning areas require a Hot Work WCC prior to starting work

During emergency situations, such as blowouts and piping failures, a fire hazard may be present in or near a designated Safe Welding and Burning Area. Unless specifically instructed otherwise by the facility manager, personnel shall immediately shut down all Hot Work activities in designated Safe Welding and Burning Areas during emergencies.

Designated Safe Welding and Burning Areas on offshore facilities shall be approved by an MMS OCS Region District Supervisor.

On land locations, designated Safe Welding and Burning Areas shall be designated by the BP facility manager.

#### **E.1.c Establishing New Safe Welding and Burning Area**

A new Safe Welding and Burning Area can be designated by the facility manager.

Establishment of such an area shall adhere to the following rules and requirements:

- The area shall be on the outboard side of the facility, as remote as possible from the well bay area and areas where hydrocarbons are processed or stored
- The area shall be well ventilated
- The area shall be clearly marked and identified



- Combustible materials shall be kept at least 35 feet from designated area in all directions (horizontal and vertical)
- For offshore facilities, a drawing that outlines the designated safe area shall be approved by an MMS OCS Region District Supervisor
- The approved drawing identifying the designated safe welding area shall be posted, along with any conditions stipulated by the MMS for approval
- MOC shall be approved

#### **E.1.d Previously Established Safe Welding and Burning Area**

If another operating company or an offshore drilling facility has established an MMS approved safe welding area on a facility, BP can use this area as an approved Safe Welding and Burning Area once the BP facility manager has confirmed the area conforms to BP safety requirements. Previously established designated Safe Welding and Burning Areas shall be clearly marked on the facility.

A copy of the approved facility drawing outlining the designated safe welding area shall be included with the application for permit to drill (APD) or sundry notice. A statement such as "We will use the rig's approved designated safe welding area" can be substituted for the approved rig drawing in the APD or sundry notice.

#### **E.1.e Control of Work Requirements for Hot Work**

##### **E.1.e.1 Hot Work Outside of Safe Welding and Burning Area**

All Hot Work and operations involving spark producing devices requires a Hot Work WCC. The following rules shall apply to these situations:

- Hot work involving welding and burning operations conducted outside of a safe welding or burning area requires continuous gas monitoring and a Fire Watch
- Hot work involving the use of spark producing devices requires continuous gas monitoring without a Fire Watch
- The Hot Work shall be conducted within an identified area with boundaries (e.g., barricade, flagging, etc.)
- The area shall be well ventilated, preferably not enclosed, and free of a flammable atmosphere
- Decking or flooring and wall material shall be non-combustible
- Deck penetrations and cracks in walls, decks, or flooring within 35 feet in all directions of the open flame Hot Work area shall be tightly covered to prevent passage of sparks to adjacent areas
- Combustible or flammable material (i.e., paraffin, rags, paper, and residual hydrocarbons) within 35 feet in any direction (horizontal or vertical) open flame Hot Work shall be relocated, protected with flame-proof covers, or shielded with flame-proof guards/curtains
- Equipment containing hydrocarbons, combustible or flammable substances shall be moved at least 35 feet horizontally from the open flame welding area. Move similar equipment on lower decks at least 35 feet from the point of impact where slag, sparks, or other burning material could fall. If moving this equipment is impractical, then shield or cover that equipment with metal or fire-resistant guards or curtains, or render the flammable substances inert
- All water-discharge-point sources from hydrocarbon-handling vessels shall be monitored for the discharge of flammable liquids or vapors. If a discharge of flammable liquids or vapors occurs, you shall stop the Hot Work and suspend the WCC until the area is safe again

- If welding or burning operations are conducted in or within 10 feet of a well-bay, all producing wells in the well-bay shall be shut in at the surface safety valve
- If welding or burning operations are conducted in or within 10 feet of a riser, that riser shall be shut-in or production re-routed to maintain the 10 foot separation from the Hot Work
- If welding or burning operations are conducted within 10 feet of a production area, that production area shall be shut in or production re-routed to maintain the 10 foot separation from the Hot Work

**NOTE:** Performing Hot Work near a continuous run of piping with no flanges, breaks, valves, plugs, etc., is excluded and shut-in is not required.

### E.1.e.2 Hot Work Permitting Process

In addition to the steps described in Section E.1, The following steps shall also be followed for the Hot Work WCC:

- Prior to issuing a Hot Work WCC, the proposed work area shall be surveyed for hydrocarbons using an approved combustible gas monitor. Hot Work shall not be performed if more than 0 percent LEL is detected
- Prior to commencement of the task, the PA shall notify the control room that they are ready to begin work. The control room shall then bypass the necessary detectors/sensors. The Control Room Operator (CRO) shall countersign the WCC or sign the JSEA to acknowledge their awareness of the work and that the safety devices to be bypassed have been identified
- The CRO and/or Marine Ballast Control Operator (BCO) shall both document the devices to be bypassed on the safety bypass log (Refer to Chapter 6, Bypassing Safety Systems and Devices)

### E.1.e.3 Inspection of the Work Area and Surrounding Area

Adhere to the following steps for inspection of work area and surrounding area:

- Consider hazards associated with instrument gas (steel tubing, pilots, controllers, poly-flo, etc.)
- Consider wind direction and any possible impact of sparks and slag outside of 35 feet

**WARNING:** Hot bolting and Hot Work are not allowed to occur within 100 feet of each other.

- Verify plugs and drains are covered with water to prevent sparks from entering or gas/vapor escaping
- Identify any potential upstream/downstream process issues such as upsets, vents, and releases
- Verify the area is adequately ventilated. When welding, consider the potential health hazard created by metal fumes

**WARNING:** When bulkheads or walls are involved in Hot Work, both sides require a Fire Watch. The person performing the Hot Work and the Fire Watch shall confirm that heat transmission through steel members or pipe does not cause a fire hazard.

- Contain the sparks/slag or keep them away from fuel and ignition sources

**NOTE:** Depending on where sparks are landing, additional resources (Fire Watches, fire blankets, fire extinguishers) may be needed on different decks to manage the area.

- Properly orient fire welding blanket to prevent pocket areas from forming and do not hang or drape fire welding blanket so that gas is trapped

- Wet fire welding blanket with water if possible
- Provide adequate means of communication among the crew
- Discuss emergency plan with all crew members. Locate the nearest ESD station
- The job site shall be inspected as often as necessary to confirm the area remains safe for work to continue.

### **E.1.f Site Preparation and Inspection**

#### **E.1.f.1 SIMOPS/Affected Areas**

The Issuing IA shall not issue a Hot Work WCC when:

- A hazardous situation is created by work in adjacent areas where cold work breaking containment is being conducted
- The opening of lines and/or vessels where a release of flammable material could make an area hazardous. The hazardous area consists of the geographical limits which released vapors could remotely reach

#### **E.1.f.2 Welding Precautions**

Adhere to the following rules for welding:

- Inspect and position welding equipment, lay out leads, select appropriate ground connections and locations, hang tarps, plug drains, and monitor discharge points
- Try to locate the welding machine close to work area first and in an unclassified area
- If located in a classified area, a WCC and continuous monitoring of the welding machine shall be required
- Ground shall be located within permitted area due to sparks from poor grounding connection
- Ground connections shall not be attached to "live" process lines or vessels
- Consider the path of the welding lead. What type of equipment is it lying across
- Shutdown welding machine when relocating leads
- When Hot Work is to be done in confined spaces, containers, or vessels, follow the safety requirements in the GoM Safe Practices Manual, Confined Space Entry Program to make the space safe for human presence
- Adequately ventilate enclosed spaces or containers when Hot Work is performed
- Remove gas burning and welding torches and hoses from all vessels and closed containers at the end of any shift, at meal time, or other time when work is discontinued
- Prior to specialized welding, such as pipeline repair, hot tapping, etc., site and project-specific procedures shall be developed to confirm that operations shall be conducted in a safe manner

#### **E.1.f.3 Inerting Tanks, Vessels, Piping, and Other Equipment**

Before welding or heating any hollow vessel or equipment, such as ball floats, pistons, impellers, vessels, pipes, valves, fittings or similar equipment that has been in any kind of service, make the equipment inert using proper procedures. Equipment within the hot work WCC area containing hydrocarbons or other flammable substances that cannot be moved can also be taken out of service and rendered inert.

Making equipment inert requires the following four steps:

- Isolate equipment inlet and outlet valves. Blinding or disconnection is required
- Bleed equipment to zero pressure

- Remove or displace flammable material out of equipment with inert gas, such as nitrogen or water
- Isolate all sources of fuel/instrument gas to production equipment controllers, preferably by disconnecting supply lines to controllers

**NOTE:** Welding or heating closed systems is prohibited due to potential for overpressure of liquids within containment; except for hot tap operations that are risk assessed and approved.

#### **E.1.f.4 Checking and Monitoring for Combustible Gas**

Prior to issuing a Hot Work WCC, the proposed work area shall be surveyed for hydrocarbons using an approved combustible gas monitor. Hot Work shall not be performed if more than 0 percent LEL is detected.

The check for hydrocarbons shall be conducted as close to the starting time of the Hot Work as possible. Once the proposed work area is found free of hydrocarbons, the Performing Authority (PA) shall confirm combustible gas monitoring is conducted continuously and recorded hourly.

**WARNING:** LEL readings shall be recorded on the Hot Work WCC and stop work immediately if greater than 0% LEL.

**NOTE:** Normal combustible gas monitors do not accurately measure combustible gas in a tank or space when oxygen concentrations are below 16% or above 20.9% and may yield erroneous LEL readings. If inert gas, such as nitrogen, is present, use of specialized monitoring equipment is required. Consult the HSSE group for the availability of specialized monitoring equipment.

The Fire Watch shall continuously monitor during the Hot Work covered by the WCC. The monitor shall not be turned off during any Hot Work activity.

##### **E.1.f.4.a Calibration of Portable Combustible Gas Monitors**

The meter shall be used in accordance with the manufacturer's recommendations for determining the LEL of combustible gas in air. Verify calibration of the unit and "functional bump check" to verify that the meter is working prior to use.

The work area shall be rechecked prior to resuming Hot Work after an interruption in work. Interruptions may include meal breaks, smoke breaks, alarms, emergency situations, and shift changes.

**NOTE:** LEL is the lowest concentration of flammable gas or vapor and air that can be ignited to cause self sustaining flame. Instruments should express the flammability range of vapors or gases in percent of the LEL. Instruments expressing percent gas should be reworked to express percent of the LEL.

Combustible gas monitors shall be inspected and field-calibrated in accordance with the manufacturer's instructions. Calibration frequency shall be based on manufacturer's recommendation. If the monitor has been dropped or otherwise damaged and calibration is questionable, the monitor shall be recalibrated.

Field calibration records shall be documented and maintained on location at the facility.

##### **E.1.f.4.b Training**

Personnel required to operate a portable combustible gas monitor shall receive training on the use, limitation, and care of the instrument per the manufacturer's operating instructions.

All competency assessments shall be documented and kept on file at the facility.

### **E.1.g Execution of Hot Work and Monitoring the Job**

After the required approval signatures have been obtained, the Hot Work can commence.

The work area shall be continuously monitored with a portable combustible gas monitor.

All personnel are obligated to immediately stop the work covered by the Hot Work WCC if they consider the prevailing conditions or work methods to be unsafe. If doing so, then:

- Inform the person or persons doing the work of the hazard detected
- As appropriate, take action to protect personnel and the environment
- If appropriate, take emergency action such as sounding the emergency alarm, activating the emergency shutdown, and/or activating the fire suppression system
- The Fire Watch shall remain on duty to monitor the area for 30 minutes if work stops for any reason other than an emergency alarm.
- All hot work that requires continuous atmospheric monitoring shall have readings documented on the 'Gas Test Log' at least every hour. Stop work immediately if greater than 0% LEL
- Immediately contact the IA and state the reasons for the work stoppage

Some examples of reasons for exercising stop work authority include:

- ESD or fire alarm sounded
- LEL above 0 percent
- Emergency release of gas/hydrocarbons (well control emergency or leak)
- Work stopped due to perceived unsafe practices
- Venting due to compressor shutdown

When work is stopped due to someone exercising Stop Work Authority, work shall only resume when the area is again rendered safe and the IA visits the work site to determine if the Hot Work shall recommence.

**NOTE:** Approval from the IA shall occur before work can continue.

### **E.1.h Completion of Job and Close-Out**

Upon Hot Work completion, the individual doing the work shall notify the IA, who will then verify the completion, safety, and cleanliness of the site.

The Fire Watch shall remain on location 30 minutes after hot work involving welding and burning operations is complete to monitor the area and watch for possible smoldering fires.

## **E.2 Cold Work WCC**

Cold Work is category for tasks which do not readily fit into other categories. Cold Work can involve a wide range of hazards, including, but not limited to the following:

- Non-routine lifting operations (critical lifts)
- Overhead lifting and rigging equipment (e.g. chainfalls, tuggers and gantries)
- Pressure testing of process piping and equipment
- Water jetting, wet grit blasting or water cutting
- Work with radioactive sources - fixed and mobile
- Stripping or disturbance of asbestos and other mineral fibers

- Temporary use of hazardous substances in areas not designed for this, e.g., cleaning and dosing tasks
- Work on vessels/equipment contaminated with Low Specific Activity (LSA) scale/Naturally Occurring Radioactive Materials (NORM)
- Spray painting operations with the potential to have environmental impacts caused by overspray
- Work near live exposed electrical equipment or lines
- Removal of handrails, gratings, hatches and fixed ladders
- Scaffolding erection/dismantling, or use of powered access
- Personnel diving activities
- Work affecting the availability of fire and gas detection, alarm and emergency shutdown systems
- Work affecting key security systems, designed to protect the premises and/or personnel
- Work affecting the availability of fire/explosion and other emergency control or protection arrangements e.g., fixed fire fighting, fire/ballast pumps, fire main, emergency generator, external communications, etc.
- Work affecting main escape routes and/or systems (e.g., lifeboats, stairways, etc)
- Insulation activities

### **E.3 Cold Work (Breaking Containment) WCC**

A Cold Work (Breaking Containment) Permit is intended to highlight the higher hazards of tasks which breach the designed containment envelope for hazardous process liquids or gases. Highlighting such tasks assists in avoiding clashes with other work on the facility.

Cold Work (Breaking Containment) tasks include:

- Construction, maintenance, overhauls and repair work in operational areas involving breaking containment of hydrocarbon or other hazardous systems
- Blinding and de-blinding of systems normally under pressure
- Replacing valves, piping spools, etc.
- Wireline activities on wells that are open to a producing reservoir

**NOTE:** Breaking containment does not include opening valves for normal sampling of well fluids

### **E.4 Electrical WCC**

An Electrical WCC is required for all work on electrical systems.

Examples are:

- Connection or disconnection of electric motors (other types of WCCs would be required for removal or installation of pumps, etc.)
- Work on instrumentation, instrument panels, or telecom equipment
- Where removal of a part of the circuit takes place outside normal operation conditions

**NOTE:** Live electrical work in an electrically classified area requires continuous gas monitoring at the location

Electrical isolations that do not involve access to conductors (such as locking off a breaker) do not require an Electrical WCC. These activities are normally carried out in relation to other WCCs and are recorded on cross-referenced Isolation Control Certificates.

### ***E.5 Commencement of Permitted Work***

Using the JSEA process, the PA explains the WCC conditions to all persons before they start work. These personnel sign the cover sheet of the JSEA. For work scope that does not change and will be performed several days in a row, a review of the original JSEA is required, and a new dated sign in sheet for the day is all that is required to be placed with the field copy of the WCC.

Should new personnel be assigned to an active WCC and/or JSEA, the new personnel shall read and understand the WCC/JSEA. The JSEA shall be explained by the PA to all new personnel assigned to the task. All changes to the JSEA shall be reviewed with all personnel prior to or during the job. Critical deviations from the original scope of the active WCC shall be reviewed and approved by the OIM. Work shall be suspended pending OIM approval of the revised scope. If minor changes to the JSEA need to be made, they can be documented on the WCC. Any changes shall be communicated to the workforce prior to recommencement of work. Documented changes shall be applied to the electronic WCC upon suspension. If any person working on a WCC considers that the conditions are unsafe for work to continue, they shall immediately inform the persons they are working with to stop the work, make the worksite safe, and inform the PA and/or IA.

If the work scope changes (e.g., welding found to be necessary after starting work), an application shall be made for a new WCC of the appropriate type for the additional work.

### ***E.6 WCC Suspension***

Work being carried out under a WCC procedure may have to be stopped before the work is completed.

Typical circumstances where this may arise are:

- For operational reasons to prevent interaction with another activity
- Work carried out during single shift only
- Waiting for materials or services
- End of shift

All applicable isolations and isolation control certificates remain in place during suspension of the WCC. Consideration shall be given to reinstating any safety system bypass for the duration of suspension, or the addition of other precautions (e.g., continual assignment of a Firewatcher).

In certain circumstances it may be appropriate to cancel the WCC and to implement a secure long-term isolation procedure.

### ***E.7 WCC Revalidation/Duration***

When work has been suspended and is to be recommenced by the following shift:

- The IA confirms that the WCC and specified precautions and conditions are still valid
  - When appropriate, this involves a worksite visit by the IA
  - Gas testing and the application of safety bypasses shall be carried out where specified
  - Isolation shall remain in place
  - Team Leaders and Supervisors shall attend the WCC Review Meeting to confirm that work does not conflict with ongoing work activities and the scopes of work have not changed
- The PA and IA confirm reissue of the WCC via the ISSOW process
- The PA, explains the WCC conditions to all persons before they start work and completes a JSEA, then confirms that newly involved personnel's signatures are added (at the worksite) to the original JSEA

### ***E.8 WCC Work Scope and Time Period***

WCCs are approved for the work scope and time period specified on the WCC.

A WCC shall be suspended and re-issued:

- After a maximum duration of 12 hours. A WCC can be extended to a maximum of 16 hours if:
  - The task remains the same, and
  - The IA, PA and crew remain the same
- When there is a change in the IA or PA
- When the work plan deviates from the original plan (i.e., work scope changes)
- Whenever an emergency alarm is sounded (except for announced testing activities)

### ***E.9 WCC Impact by Crew Changes (WCC Change in Authority)***

Active WCCs shall be transferred by the following:

- **Offshore Installation Manager (OIM)** - The OIM shall countersign (accept) each Authorized, Issued, Live, and Suspended WCCs within four hours of arrival onboard. The OIM shall countersign (accept) each WCC to indicate their knowledge of the work being conducted under each WCC. OIM shall be responsible for communicating potential job conflicts to IAs
- **IA** - IA's shall countersign (accept) each relevant Authorized, Issued, Live, and Suspended WCCs within four hours of arrival on-board. The IA shall transfer accountability for active WCCs between Authorities by walking down the work area with the PA, then countersign (accepting) the WCC where the IA's signature is required
  - If the WCC was suspended, the IA shall re-issue the WCC and the PA will accept the WCC indicating they will be taking the responsibility of the work taking place (by signing and accepting the WCC) to indicate acceptance for the responsibility of the work taking place
  - The IA will provide coverage if the PA changes and vice versa. A change within the same tour does not require suspension and reactivation of a WCC by the OIM
- **PA** - The departing PA shall confirm the work site is safe and suspends the WCC prior to crew change. The new PA shall:
  - Review all suspended WCCs under their scope to confirm the WCC, JSEA and other documents are in order
  - Review the work site to verify that all required controls are in place
  - Countersign (accept) each relevant Authorized, Issued, Live, and Suspended WCCs

### ***E.10 Work Delayed and WCC Invalid, or Work Completed***

Where work has been delayed or completed:

- The PA shall confirm that the site is left safe and tidy and that all personnel are withdrawn
- The PA communicates the work status to the IA
- The IA verifies site conditions are safe and reinstates the safety of the system after appropriate tests (eg. pressure tests and loop tests) are completed
- A WCC shall not be archived (canceled) unless the accompanying ICC is completed and archived or reverted to a LTI in the WCC Isolation Control Certificate section of the ISSOW as 'long-term' by the IA. The Isolator/Authorized Employee shall identify the appropriate Long Term Isolation (LTI) on the Isolation Control Certificate. The IA signs the Isolation Control Certificate certifying that LTI status applies to the individual isolations indicated by



comment on the Isolation Certificate Control as 'LTI'. The LTI shall be directly referenced to the WCC

- The WCC is checked in the 'LTI' section, verified and accepted by the IA, certifying that LTIs have been left in place
- The IA confirms that each WCC is completely and properly closed out prior to filing the completed hard copies by the HSSE Advisor. All daily paper work including but not limited to, JSEA sign-in sheets, gas logs- etc.- are to be filed in the work pack
- Closed WCCs and associated work packs shall be filed for a minimum period of four years (at least one year on the facility)

### ***E.11 Cancellation of Bypass Systems***

Where the bypass of process shutdown or fire and gas detection/protection systems was necessary to allow permitted tasks, these shall be returned to service as part of the WCC completion arrangements.

Processes in bypass shall be in place for the shortest practicable time and should not necessarily wait until the work is completed. The IA, when satisfied that such bypasses are no longer required, shall authorize their cancellation and verification.

## **F Confined Space Entry**

### ***F.1 General Requirements for Confined Space Entry***

- The facility shall be surveyed to identify confined spaces that could be entered
- Personnel shall be informed of the existence and hazards of confined spaces by posting "Warning" signs or by other equally effective means (i.e., Confined Space Inventory)
- Confined Spaces that can be casually or inadvertently entered shall be effectively guarded to prevent unauthorized entry
- Permit Required Confined Spaces shall only be entered when all provisions of the Confined Space Entry Program are satisfied
- Only properly trained and equipped personnel shall be allowed to participate in work involving entry into Permit Required Confined Spaces
- No entry shall be made until a rescue plan is developed and implemented
- For work using a third party contractor's confined space entry permit, a BP Confined Space Entry (CSE) WCC shall be issued stating the use of the third party contractor's JSEA and permit to conduct the task

### ***F.2 Overview for Confined Space Entry***

The IA and Entry Supervisor shall be responsible for implementing and enforcing the requirements of the Confined Space Entry program. After the conditions for Confined Space Entry have been verified, the IA shall approve the WCC before the job commences. The IA shall authorize the CSE and have the same Entry Supervisor qualifications to ensure the risks associated with this task are controlled.

An Entry Supervisor also may serve as an Attendant as long as that person is trained and equipped, as required by this program, for each role they fill. Also, the duties of Entry Supervisor may be passed from one individual to another during the course of an entry operation. However, the person who the responsibilities are passed on to shall have participated in the JSEA and be identified on the WCCs. If they have not, the WCC shall be suspended and re-issued when all participants have been documented as being involved with the work. The Entry Supervisor(s)

shall be named in writing on the entry WCC. The Entry Supervisor is not necessarily a BP representative or employee; they may be any properly trained person and could be a contractor. In accordance with the Control of Work Group Standard a WCC for Confined Space Entry shall be raised when it is necessary for personnel to enter confined spaces. Confined Space Entry detailed requirements are to be used for guidance when managing the risks associated with activities that require entry into a confined space.

### **F.3 Procedures for Confined Space Entry**

#### **F.3.a Contractor Requirements**

**NOTE:** In most cases, Confined Space Entry work at BP facilities is performed by specialized contractors.

When a location arranges to have contractors perform work that involves permit-required Confined Space Entry, the facility manager/OIM shall:

- Verify that the selected contractor is qualified to perform the assigned confined space entry (refer to Section F.3.b)
- Inform the contractor that permit-required Confined Space Entry is allowed only through compliance with the GoM's Confined Space Entry program
- Inform the contractor of the elements, including the hazards identified and the location's experience with the space, that make the space in question a permit-required confined space
- Inform the contractor of any precautions or procedures that the location has implemented for the protection of employees in or near permit-required confined spaces where contractor personnel will be working
- Coordinate entry operations with the contractor when both the location's personnel and contractor personnel will be working in or near permit-required confined spaces
- Debrief the contractor at the conclusion of the entry operations regarding the permit-required Confined Space program (post-meeting)

#### **F.3.b Training**

Personnel shall be trained in their assigned duties when:

- First assigned a Confined Space Entry role
- There is a change in the assigned Confined Space Entry role
- There is a change in permit-required Confined Space Entry operations that presents a hazard about which an employee has not previously been trained
- The Entry Supervisor, IA, or their designee identifies deviations from acceptable entry conditions or a worker demonstrates a lack of competency/knowledge in the Confined Space Entry procedures

Training shall include, at a minimum:

- Proficiency in the specific duties assigned
- Type of Confined Space to be entered and the potential chemical and physical hazards
- Work practices and techniques
- Atmospheric testing procedures and requirements
- Personal protective equipment to be used
- Rescue personnel shall be trained in first aid/CPR and confined space rescue for the type of entry to be performed

Training shall be documented and available for inspection.

### **F.3.c Permit-Required Confined Space Entry Permit**

Confined space entry work is not allowed to be performed until a Confined Space Entry WCC and a JSEA have been completed.

The Confined Space Entry WCC differs from other WCCs in that:

- A provision is made for atmospheric tests starting with oxygen, then LEL and then H<sub>2</sub>S, including a continuation sheet
- It does not allow any form of work, only visual inspection, atmospheric testing and entry. When work is to be carried out in a confined space, an associated WCC (as designated by the type of work) shall be applied for and cross referenced to the Confined Space Entry WCC. Under such circumstances, the Confined Space Entry WCC shall be maintained valid throughout the life of the associated WCC
- WCC for Confined Space Entry involves declaring that the confined space is positively isolated and the atmosphere is safe for the Authorized Gas Tester (AGT) to enter. The AGT shall confirm prior to entering the confined space that atmospheric testing was conducted from a safe, external location. Once the initial testing indicates 20.9% ± 1.0% oxygen, 0% LEL and no toxics, entry can proceed
- It requires the AGT to record the atmospheric test and re-test results

### **F.3.d Summary of Vessel and Confined Space Entry WCC Procedures**

#### **F.3.d.1 Who Signs the WCC**

The following personnel shall sign the WCC:

- OIM
- IA
- PA
- Entry Supervisor
- Authorized Entrants
- Attendant/Standby person(s)

**NOTE:** Under certain circumstances when a person is performing more than one role, the same individual may sign more than once on the WCC. The same person cannot be an IA and a PA or an IA and Isolator/Authorized Employee.

### **F.3.e Non-Permit Confined Space Entry**

A Non-Permit Required Confined Space is one that does not contain any of the four criteria that constitute a permit-required confined space.

If the confined space does not contain any of the following four items, it is non-permitted:

- Contains or has a potential to contain a hazardous atmosphere
- Contains a material that has the potential for engulfing an entrant
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section
- Contains any other recognized serious safety or health hazard

- If a space is classified (or re-classified) as a non-permit required confined space, a WCC and JSEA are still required to be completed. The WCC documentation shall include the following:
  - How or why the space poses no actual or potential atmospheric hazards
  - The basis for determining that all hazards within the space are eliminated. Control of atmospheric hazards through forced air ventilation alone does not constitute elimination of the hazard.

### F.3.f Preparation of Permit Required Confined Spaces

The IA for the facility is responsible for confirming that preparation of the confined space has been completed as follows:

- Drain, wash, purge, neutralize and/or flush the interior of any vessel or tank before entering
- Blind and/or disconnect all lines as close as possible to the Confined Space Entry to prevent harmful agents or vapors from entering the confined space

**WARNING:** Follow all established electrical lockout/tagout and blinding procedures for equipment isolation. Lockout and tag all necessary pumps, motors, or any other energy source to confirm complete isolation of the confined space

**WARNING:** With the exception of hull ballast tanks, double block and bleed isolation of equipment is not sufficient for Confined Space Entry. If a double block and bleed is used to isolate a hull ballast tank, a MOC shall be initiated to verify a site specific HAZID/HAZOP analysis shall be performed for that facility's hull ballast system to confirm it is the overall safest method to perform the job.

- Establish and maintain forced ventilation in the vessel (unless purging or inerting with an inert gas). Solely relying on natural ventilation is unacceptable for permit required confined space entry. Properly grounded air-driven or explosion-proof electric fans are required if flammable gas or vapors are present

**NOTE:** Special considerations shall be given to tanks that are O2 deficient as "Normal" combustible gas indicators will not accurately measure the combustible gas in a tank that is O2 deficient. Consult with the HSE Advisor for availability of specialized monitoring equipment.

- Post portable or fixed danger signs at all point(s) of entry to the permit-required Confined Space that may not be safe for unprotected entry or where a hazardous atmosphere may accumulate. Signs shall conform to GoM specifications and shall state, "Entry by Permit Only"
- A positive pressure self-contained breathing apparatus (SCBA) or supplied airline positive pressure respirator with egress bottle shall be immediately available outside the permit-required Confined Space manway
- Equipment, such as air movers and pump hoses, shall be properly grounded or bonded to prevent static sparks

**WARNING:** Grounding will not prevent sparks created by materials impacting the blades of air movers or the interior walls of vacuum tanks. Where this may ignite flammable gases or dusts, it may be necessary to take additional precautions such as wetting loose materials.

- Lighting conditions, temperature, the need for climbing, scaffolding, or the presence of water shall be considered when preparing a Confined Space for entry

**WARNING:** The second most common cause of fatalities in Confined Space work is fall from elevation. Make sure adequate fall protection is provided

**NOTE:** In hydrocarbon service, electrical equipment shall have a ground fault interruption device located outside of the confined space, and all electrical cords and devices shall be inspected prior to use.

- Provide proper Personal Protective Equipment, such as coveralls, earplugs, goggles, gloves, and respirators, as required
- Maintain a first-aid kit outside the entry
- Fire extinguishers and other fire fighting equipment shall be available where needed
- Establish a communication system (visual, hand signals, radio, voice, etc.) between workers and standby personnel
- Post signs and/or barricades outside to notify personnel of entry and prohibit unauthorized entry
- Entrants and standby person(s) may perform as rescuers, if properly trained and equipped; however, the person shall not enter the Confined Space during an emergency without first confirming that another trained standby person is present at the manway
- Rescue and recovery equipment shall be staged and ready for use

**WARNING:** The work activity that most frequently results in fatalities is rescue. For every entrant who dies in a confined space, approximately 1.6 people attempting a rescue die. In most cases, the people who die are untrained and improperly equipped for rescue.

- Rescue and other services that may be summoned in case of an emergency and the means of communication with those services shall be listed on or attached to the WCC
- When the preparation steps are complete and any additional precautions are taken, the WCC to enter a vessel or permit-required Confined Space may then be signed and issued

#### ***F.4 Testing Confined Space Atmospheres***

Confined space atmospheres shall be tested before entry is allowed.

Tests shall be conducted in the following order, and the following levels shall be met:

- The acceptable oxygen concentration range is from 19.5% - 23.5%. The desired oxygen level is 20.9%. All other levels shall be investigated and the contributing issue(s) addressed. No one shall enter a Confined Space when oxygen concentrations are above or below 20.9±1.0% oxygen. Entry into a Confined Space with oxygen concentrations below 19.5% may be performed with a MOC that requires entrants to wear a Self Contained Breathing Apparatus
- The acceptable flammable gases or vapors concentration is 0% Lower Explosive Limit (LEL). If 0% cannot be achieved, CSE will not occur without an MOC (as outlined in the MOC Delegation of Authority). A MOC can only be authorized to a maximum of 10% LEL per OSHA regulations
- If NORM levels are equal to or greater than 50 micro roentgen/hour (µR/hr), appropriate protective measures shall be followed

Where entry is required for initial atmospheric testing, or in any other circumstances where it is possible, the authorized gas tester may encounter an oxygen deficient or toxic atmosphere, the

individual conducting the test shall wear a positive pressure self-contained breathing apparatus (SCBA) or a supplied airline positive pressure respirator with egress bottle. All equipment used for atmospheric testing shall be calibrated and operationally checked prior to use according to manufacturer specifications. The atmospheric tests and operational checks that precede the issuing of a WCC shall be as close as practical to the time the work is to begin and recorded on the entry WCC.

Continuous monitoring shall be conducted for toxic gases and flammable gases (LEL), which may be released during the course of work. Continuous monitoring shall be conducted as close to the entry as possible and is mandatory on all Confined Space work regardless of respiratory protection provided. The area shall be evacuated if the combustible gases rise above 0% LEL or oxygen level changes above or below 20.9%± 1.0% oxygen. If a noticeable change in the level of oxygen in the Confined Space occurs, it shall be investigated. Readings shall be periodically recorded on the CSE permit.

**NOTE:** Normal oxygen levels should be obtainable at all times unless purging or inerting activities are underway.

### ***F.5 Safety Equipment***

To establish safe entry conditions, the following equipment may be necessary:

- Direct reading gas testing equipment for:
  - Oxygen content
  - Flammable gases and vapors
  - Potential toxic contaminants
- Grounded ventilating equipment
- Communications equipment, as required, intrinsically safe for use in potentially hazardous atmosphere
- Sufficient intrinsically safe lighting equipment with a Ground Fault Circuit Interrupter (GFCI)
- Barriers and shields necessary to protect workers from external hazards
- Entry or exit equipment such as ladders and retrieval equipment
- Adequate rescue and emergency equipment to effect a timely rescue and offer immediate first aid and CPR
- Any other equipment necessary for safe entry into and rescue from confined spaces

### ***F.6 Rescue and Emergency Services***

Follow the guidelines below for rescue and emergency services:

- Each member of the rescue service shall be provided with and trained to properly use Personal Protective Equipment and rescue equipment necessary for making rescues from confined spaces. They shall also receive the required training for an Authorized Entrant.
- Each member of the rescue service shall practice making Confined Space rescues using dummies, mannequins, or actual persons in representative spaces that simulate the types of confined spaces from which rescue is to be performed, with respect to configuration, opening size, and accessibility. This training shall be completed at least once every 12 months and may be completed at the facility
- At least one member of the rescue service shall hold current certification in first aid and CPR
- If an outside (contractor) rescue service is used to perform Confined Space rescue, the OIM shall:
  - Inform the rescue service of the hazards they may confront

- Provide the rescue service with access to all confined spaces from which rescue may be necessary so that they can develop appropriate plans and practice rescue operations
- Evaluate the rescue service to determine that they are able to perform an effective rescue in a timely fashion
- To facilitate non-entry rescue, retrieval systems or methods shall be used, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant
- Retrieval systems will meet the following requirements:
  - Each Authorized Entrant shall use a chest or full body harness with a retrieval line attached at the center of the entrant's back, near shoulder level, or above the entrant's head. Wristlets may be used in lieu of the full body harness if the employer can demonstrate that the use of a full body harness is infeasible or creates a hazard and that the use of wristlets is the safest and most effective alternative.

**NOTE:** Using wristlets is the least desirable method of lowering or raising personnel and should be considered only in extreme circumstances.

- The other end of the retrieval line shall be attached to a mechanical device or fixed point outside the permit space in such a manner that rescue can begin as soon as the rescuer becomes aware that rescue is necessary
- A mechanical device will be available to retrieve personnel from vertical type confined spaces more than five feet deep

### ***F.7 Entry***

Personnel shall only enter into a Confined Space after preparation requirements are met and a WCC is signed and issued.

If at any time anyone (entrant, standby person, rescuer, Entry Supervisor, or any other person) determines that the Confined Space Entry is unsafe or unanticipated hazards are present, the Confined Space shall be immediately evacuated and safe condition established prior to re-entry.

The designated standby person shall not leave the Confined Space manway with any entrant inside unless they have been relieved by another trained standby person that is listed on the WCC and JSEA.

Unauthorized personnel shall not be allowed entry, and, if the vessel or Confined Space is left unattended, the entrance shall be barricaded.

### ***F.8 Cancellation of WCC and Restoration of Production Vessel or Confined Space***

When all work is complete and the vessel or permit-required Confined Space is ready to be returned to service, the IA shall conduct a post-entry review. A site-specific checklist shall be used for proper restoration. In addition to items listed on the WCC, questions to consider include:

- Are all personnel out of the confined space
- Are all blinds removed using the blind list
- Are all equipment and tools removed
- Are all manways and flanges closed and sealed
- Has the atmosphere been purged using one of the approved purging processes
- Have start-up procedures been reviewed

After cancellation or expiration of the WCC, an entry completion meeting (post-meeting) with everyone involved (BP and contractor) shall be held and documented. The canceled WCC shall be reviewed to confirm that any hazards found or created have been documented to confirm that personnel participating in future entry operations are protected from previously unidentified hazards. The documentation shall be retained for four years (minimum of one year at the facility).

### **F.9 Annual Review**

The permit-required Confined Space program shall be reviewed at least once a year (self-assessed) unless no entry is performed within the last 12 month time period. Revisions shall be made to the program as necessary to protect employees from the potential hazards of Confined Space entries. Documentation of annual program reviews/assessments shall be retained for one year from the review using the ISSOW audit tool.

## **G Energy Isolation**

This section specifies the minimum requirements for Lockout/Tagout (LO/TO) and isolation procedures that shall be used when servicing or performing maintenance on machines and equipment in which the unexpected energization, start-up, or the release of stored energy could cause injury to personnel.

Energy Isolation is controlled and documented through the Permit to Work system and requires:

- If the unexpected energization or start-up of equipment or the unexpected release of an energy source could cause injury, the energy source shall be isolated with an energy isolating device and effectively controlled
- When energy isolating devices must be locked out, the devices shall be locked and tagged in the position that isolates the affected worker(s) from the hazardous energy when maintenance/servicing work is being performed
- To complete maintenance, troubleshoot problems or perform adjustments, it may be necessary to work on equipment while it is energized. The following are examples:
  - Adjusting/tuning engines
  - Pigging
  - Routine lubrication of pumps and compressors (but does not include couplings on rotating equipment)
  - Routine instrumentation and analyzer work
  - Routine electrical work performed by, or supervised by, an electrician involving electrical circuits or wiring which need to be energized to properly perform the task, such as electrical PMs (i.e., relamping of lights)

**NOTE:** Site specific procedures and controls shall be developed and implemented to ensure the work is performed to an equivalent level safely. **This approach cannot be used simply because it is more convenient than locking out equipment.**

This procedure is not applicable to:

- Hand-held power tools or stationary equipment whose electrical power shall be controlled by the unplugging of equipment from the energy source, when the plug and cord are under the control of the worker performing the servicing or maintenance
- Hot tap operations involving transmission and distribution systems
- Lock or seal open block valves on pressure relief systems



- Taking a valve out of its normal operating position for operational purposes. (Refer to Chapter 12 General Safety Rules for further information)

## **G.1 Energy Isolation Procedures**

### **G.1.a Methods of Lockout/Tagout (LOTO)**

There are two methods of lockout/tagout (Personal and Group LOTO) used in the GoM:

#### **1. Personal Isolation Requirements**

The use of personal isolations shall be reviewed and approved by the OIM on a case by case basis. Personal isolations are intended for short duration tasks of relatively low risk; for example, replacing pressure gauges, filters or small valves, or other such tasks where the completion of an Isolation Control Certificate (ICC) is considered to add no significant value in terms of risk reduction.

The rules for approval of a Personal Isolation are as follows:

- For personal isolations, the following requirements shall be met:
  - Simple isolation – Maximum of 4 isolation points
  - The task and isolation are performed by one Isolator/Authorized Employee within one shift. The Isolator/Authorized Employee may receive assistance from others but shall be present at all times when work is in progress
  - All isolation points shall be visible to the Isolator/Authorized Employee during the task
  - Before approval, the OIM shall be satisfied with the competence of the Isolator/Authorized Employee to both carry out the isolation and execute the work. Personal isolations shall only be carried out by those deemed to be a competent Isolator/Authorized Employee
  - The equipment is locked out by the Isolator/Authorized Employee using the applicable colored, single keyed IA Locks assigned to them by the IA
  - The key to the IA Locks used is kept with the Isolator/Authorized Employee
  - The same isolation standards apply to personal isolations other than the completion of the ICC (Lock, Tag, Clear and Try)
- 2. Group Isolation
  - Where there is a single person or a number of employees working on equipment that require an ICC, the IA will use a lockbox to provide a level of protection equivalent to that of the individual's personal lock. An approved WCC and ICC are required for tasks using Group Isolation.

### **G.1.b Long Term Isolation (LTI)**

Long term isolation is an isolation that remains in place after the WCC is cancelled.

When work is delayed for a period exceeding the expiration date of the WCC involved and isolations shall be kept in place, the following LTI procedure applies:

- When the WCC is archived and signed but normal operations cannot be resumed due to isolations remaining, the applicable ICC status is modified and added to the LTI Certificate Register within ISSOW. The IA signs on the ICC certifying that LTI status applies to the individual isolations indicated
- When reviewing long-term isolations greater than 90 days, the IA considers replacing the isolation by a modification to the process, which shall comply with the Management of Change (MOC) procedure
- Where the isolation shall remain, preservation requirements shall be required

- Particular attention shall be paid to the preservation of piping systems and equipment that have been isolated
- When LTI involves bleeds or vents, consider shutting or plugging of the bleed/vent and indicating this on the controlling ICC as an isolation point. A worksite check of the integrity of bleed/vent and all applicable LTI is carried out prior to issuing any subsequent WCCs associated with the LTI.
- Individual ICCs that contain details of registered LTI are kept with the applicable marked up Piping and Instrumentation Diagrams (P&IDs), all applicable hazards assessments, and a copy of the cancelled original WCC

Before removing any LTI, the process, equipment, or system to be de-isolated shall be carefully checked to confirm that it is safe to de-isolate.

### G.1.c Isolation Confirmation Certificate

Where items of equipment shall be isolated to allow the work to take place safely then an Isolation Confirmation Certificate (ICC) shall be raised to control the isolation. The ICC applies to group isolations, covering process, control and electrical. The ICC contains a listing of all isolation points and the relevant engineering diagram(s) to demonstrate their location.

For voltage greater than or equal to 600 Volts AC and systems with more than one supply, a Senior Qualified Electrical Person (SQEP) shall define/verify the isolations. All ICCs involving high voltage isolations shall be approved by a SQEP prior to the isolations being put in place.

The ICC supports the WCC by providing a robust means to:

- Define and record the isolations which are required before the task detailed on the associated WCC can safely proceed
- Confirm when these are in place so that the task can proceed (subject to completion of other associated certificates e.g., Confined Space Entry)
- Authorize and record any de-isolations and additional isolations which may be required to test equipment under a Sanction to Test
- Authorize and record de-isolation on completion of the task detailed on the associated WCC

**NOTE:** All requested group isolations require the completion of an Isolation Confirmation Certificate signed by the IA and authorized by the OIM before the relevant WCC can be issued to the Performing Authority.

### G.1.d Lock and Tag Usage

Each facility shall have a colored lock program identifying Isolation locks assigned to each department. The color coding shall be at the facility's choosing. The isolation locks may also be identified by engraving the craft and number system onto the Isolation lock.

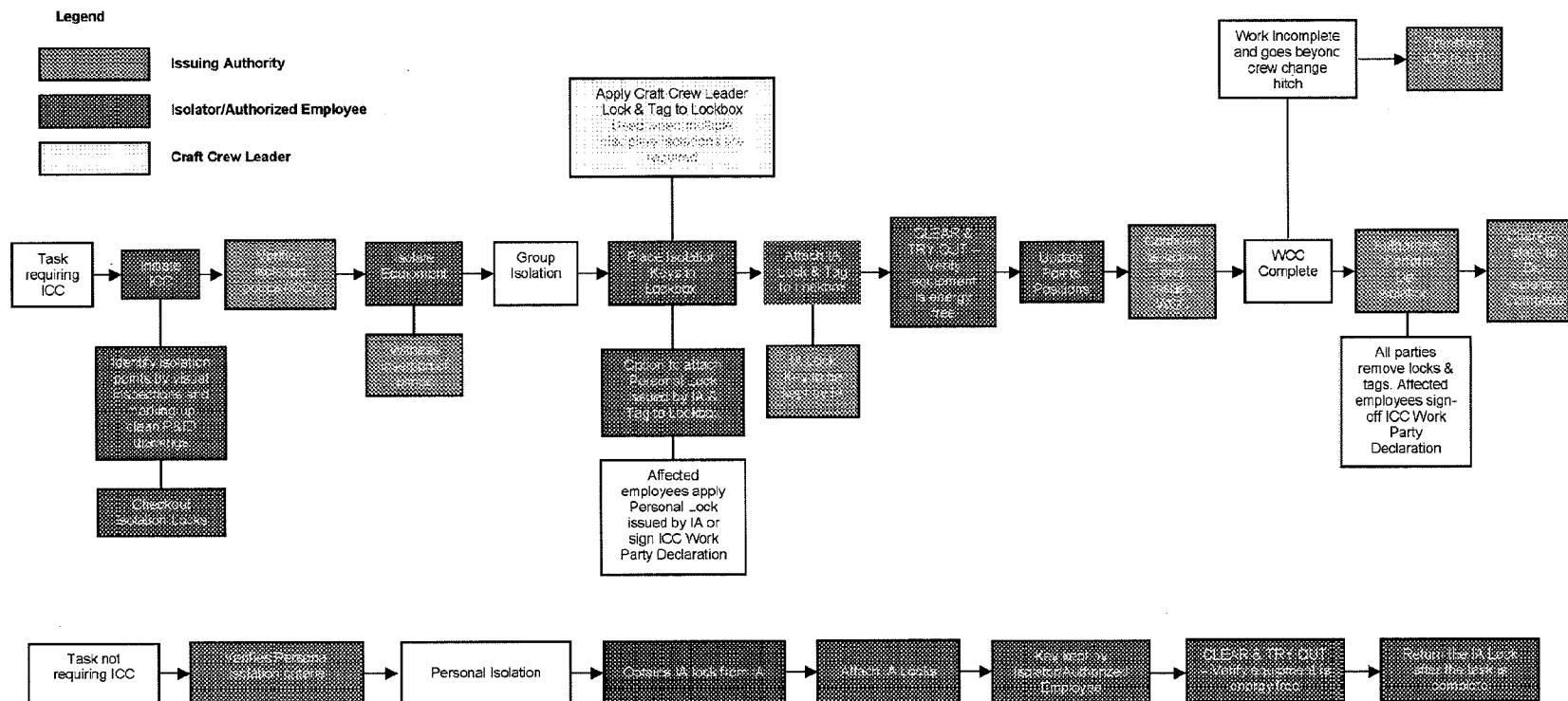
A Tagout Device/Isolation Tag is an energy isolation device stating: "DANGER - DO NOT OPERATE" in the form of a tag attached to the lock or EID by means of a non-releasable, self-locking nylon cable tie with an unlocking strength of no less than 50 pounds. A Tagout Device/Isolation Tag shall be used where lockout of an energy isolation device is not possible with a standard lock and/or chain.

Tagout Device/Isolation Tags are to be used solely for the purpose of lockout/tagout, and shall not be used for any other application

### G.1.e Application of Isolation Locks and Tags (LOTO)

The following sections and Figure 1 describe the process for applying isolations locks and tags for Personal Isolation and Group Isolation.

### Energy Isolation Process Flowchart



**G.1.e.1 Personal Isolation Process**

- The IA verifies that the task planned meets the Personal Isolation requirements
- The Isolator/Authorized Employee is responsible for:
  - Signing out IA locks issued by the IA
  - Visually inspecting the isolations points to verify the complete list of Energy Isolation Devices needed, supported by P&ID and process flow diagrams as needed.
  - Isolating the equipment using EIDs (e.g., close valves, positions electrical breakers in the open position, electrical disconnect, chains, cables)
  - Attaching the IA Lock and tag in a safe position to EIDs
    - This process shall be repeated until all EIDs are secured (locked out and tagged out)
    - Tags shall be generated as designated in ISSOW or by using tags which display the Tag Number, ICC Number, Process/Equipment Tag Number, and the Isolated State Description. Individuals will enter their name in the Isolated State Description portion of the tag.
    - Tags shall be situated in a readily visible location when possible
  - Verifying that the equipment is energy free. This shall be performed by physically attempting to start the equipment by use of "Clear and Try" methods

**WARNING:** To prevent injury from any residual liquid and/or pressure, confirm that the equipment bleed valves and lines are not plugged. These valves shall be tagged to prevent oversight.

- The key to the IA Locks is kept with the Isolator/Authorized Employee

**G.1.e.2 Group Isolation Process****1. Initiating ICC**

- Isolator/Authorized Employee shall conduct a visual inspection to verify the complete list EIDs needed, supported by P&ID and process flow diagrams as needed. Each isolation point shall be assigned a number (1, 2, 3, etc.) and listed on the ICC
- Isolator/Authorized Employee shall complete an ICC for the EID used to isolate energy sources from the equipment being worked on
- Isolator/Authorized Employee signs out Isolation Locks from designated area
- IA verifies the isolation points on the ICC in ISSOW

**2. Isolate Equipment**

- IA witnesses the insertion of blinds
- The Isolator/Authorized Employee is responsible for the following:
  - Isolating the equipment to be worked on by using existing EIDs (e.g., close valves, positions electrical breakers in the open position, electrical disconnect)
  - Verifying that the equipment is energy free. This shall be performed by physically attempting to start the equipment by use of "Clear and Try" methods

**WARNING:** To prevent injury from any residual liquid and/or pressure, confirm that the equipment bleed valves and lines are not plugged. These valves shall be tagged to prevent oversight.

**NOTE:** It is not necessary for bleed valves to be locked. Bleed valves can be grouped on the Isolation Certificate to indicate the number of bleed valves on a particular line.

- Attaching the Isolation Locks and tags in a safe position to the EIDs
  - This process shall be repeated until all EIDs are secured (locked out and tagged out)
  - Tags shall be generated as designated in ISSOW or by using tags which display the Tag Number, ICC Number, Process/Equipment Tag Number, and the Isolated State Description. Individuals will enter their name in the Isolated State Description portion of the tag
  - Tags shall be situated in a readily visible location when possible
- 3. Lock Box Lockout/Tagout
  - Isolator/Authorized Employee places the key(s) and unused Isolation Locks into the Lock Box

**NOTE:** If only a portion of the set of Isolation Locks is used, the remainder of the locks shall be secured within the Isolation Lock Box. The unused locks are to remain Out of Service until the isolation job is complete and all Isolation Locks have been returned to the set.

- If additional crafts are included in the isolation, each Craft Crew Leader shall attach a personal lock and tag issued by the IA to the lockbox
- Affected employees have the option to attach a personal lock issued by the IA to the lockbox or sign the ICC Work Party Declaration
  - If the Affected Employee chooses to attach a personal lock, the employee maintains control of the key

The Isolator/Authorized Employee shall attach an IA Lock and tag issued by the IA to the lockbox. The key to the IA Lock shall be controlled by the IA

- IA shall inspect the work area and verify the isolations are in place
- ICCs shall be maintained with the work WCC at the designated location and a copy in the lock box

**NOTE:**

1. Any additions or deletions to the ICC shall be communicated to all Authorized Employees involved in the job.
2. An SQEP shall change the state of the EIDs on equipment involving more than 600 volts.

### **G.1.f Review of ICC with Craft Crew Leader**

Using the ICC Form, the Isolator/Authorized Employee shall conduct a field safety review with the craft crew leader. This review shall include the visual verification of each EID and an explanation of the potential hazard(s) that could occur if any of the locks are removed from the EIDs.

After the review, the craft crew leader shall attach their assigned lock and tag to the lock box and sign the ICC Work Party Declaration. This process forbids the removal of any lockout devices by the Isolator/Authorized Employee.

The craft crew leader, using the ICC, shall confirm that:

- Affected employees from their crew are signing in and out on the ICC Work Party Declaration or
- Applying/removing their personal locks, issued by the IA, from the lock box

**NOTE:** If a crewmember does not apply a personal lock, the ICC Work Party Declaration shall be signed. One employee cannot sign for another employee.

The ICC Work Party Declaration shall be maintained with the work WCC, JSEA and the ICC at the designated location.

Once the Isolator/Authorized Employee has verified all isolations are in place, one last check shall be made on the equipment to confirm that it is energy free.

The Isolator/Authorized Employee shall check for voltage using the proper equipment and attach grounding straps if necessary. At this point, the IA shall re-inspect the worksite to verify the isolation was completed as identified on the ICC. After the isolation is verified, the IA can approve the applicable WCCs for the OIM to authorize prior to starting work.

### **G.1.g Transfer of Isolation and Issuing Authority Locks During On-Going Work (Applies to Group Lockout)**

The transfer of Isolation and IA locks shall only apply to Group Lockout situations.

If a crew change occurs prior to job completion with Isolation and Issuing Authority Locks still in effect, the Issuing Authority Locks shall be transferred at crew change to the relief/oncoming Issuing Authority. This will be accomplished by the Issuing Authority and the Isolator/Authorized Employee countersigning the ISSOW ICC & WCC.

If the work is not complete and will resume at a later date, the Craft Crew leader and Affected Employees shall sign-off on the ISSOW sign-off sheet each workday.

### **G.1.h Removal of Energy Isolations**

The Isolator/Authorized Employee and Craft Crew Leader shall confirm that:

- All the work required is complete
- The work area is clean
- All crew members are accounted for and no longer affected by the equipment, and have signed out on the ICC Work Party Declaration or removed their personal locks and returned to the IA
- The craft crew leader assigned lock and tag are removed from the lock box and returned to the IA
- The equipment is in an operational state and ready to be energized

**NOTE:** When the Isolator/Authorized Employee has verified the above items, they shall obtain permission from the Issuing Authority to de-isolate.

The Isolator/Authorized Employee shall:

- Retrieve the key for the IA Lock from the IA and remove IA Lock from lock box
- Return Issuing Authority key(s) and locks to the IA
- Remove Isolation Locks, lockout devices and tags from the serviced equipment
- Return and sign in all Isolation Locks back in service on the ICC
- Notify all affected employees that the equipment is being put back in service
- Visually confirm, using the ICC point list, that all points have been de-isolated
- Put Equipment back in service

### **G.1.i Devices Not Used as Energy Isolation Devices**

The following devices cannot be used as an EID:

- PSV/RV

- A check-valve or back-flow-preventer
- Push button or selector switches
- Automatic or remotely operated valves controlled by push buttons, selector switches, and/or computer automation, unless it can be positively isolated by any of the criteria listed below
  - Breaker or fuse removal
  - Air failure causes the valve to close directly or through a pilot mechanism and the air is disconnected
  - The valve is equipped with a hand-jack that can be locked-out in a safe position

## ***G.2 Lockout/Tagout Modifications***

This section applies to modification of the Isolator/Authorized Employees lockout device and tagout during on-going activities. If the job scope changes, the job is stopped and the proper documentation is re-issued.

## ***G.3 Removal of Isolator/Authorized or Affected Employee Lock or Failure to Complete the ISSOW ICC***

If the Isolator/Authorized or Affected Employee who applied the lockout or tagout device is not available to remove it, then the lock and/or tag may be removed under the direction of the supervisor (or designated alternate) using the following steps:

- After all means of contacting the individual are complete, the IA shall contact the OIM to remove the authorized employee's personal lock and tag from the lock box or sign off the ICC Work Party Declaration, and complete the ISSOW ICC, allowing the Isolator/Authorized Employee permission to remove personal locks
- Determine conclusively the job has been completed and no personnel remain in the affected area
- Verify the area is clear and direct the removal of the lockout/tagout
- When employee resumes work at the facility, the supervisor or (designated alternate) shall ensure that the the Isolator/Authorized or Affected Employee is notified that their lock was removed.

**NOTE:** The OIM shall sign their name and not the name of the absent Isolator/ Authorized Employee.

## ***G.4 Piping Isolation Methods***

### ***G.4.a Positive Piping Isolation***

Positive Isolation is mandatory for:

- Permit required confined space entry (except for hull ballast tanks where a MOC shall be initiated to verify a site specific HAZID/HAZOP will be performed for that facility's ballast system to confirm it is the overall safest method to perform the job)
- Long-duration isolations of open ended piping (greater than 1 week)
- Equipment mothballing
- Hot Work (for low pressure (less than 150 psig), non-hazardous fluids (per Table 2, page 92), positive isolation will not be required. Appropriate level of isolation will be determined by a documented risk assessment and MOC.)
- Process fluids above auto-ignition temperature

Positive Isolation is achieved by slip blind insertion or blind flanging.

#### G.4.a.1 Slip Blind Insertion (EID)

Plate insertion is the installation of a slip blind or spectacle blind between bolted or clamped flanges. Plate insertion shall be confirmed by the Isolator/Authorized Employee and witnessed by the IA. The blind shall be rated to pipe design specification.

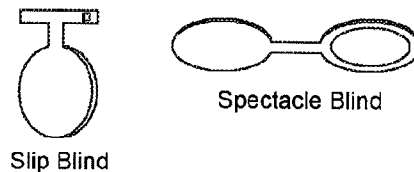


Figure 2: Plate Insertion

#### G.4.a.2 Blind Flanging

Blind flanging is when a full-rated pipe fitting is used to close the flanged end of an open pipe or valve.

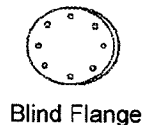


Figure 3: Blind Flange

**NOTE:** The items below are not blinds, but when installed have the appearance of a blind.

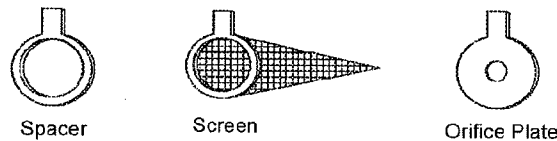


Figure 4: Items Appearing Similarly to Blinds

#### G.4.a.3 Blind Selection

Blinds shall be selected according to the following:

- A blind shall be rated for the pressure and temperature for the service of the line. Permanent blinds shall meet applicable design piping standards and codes. A blind is recommended to have a "T" handle long enough to extend at least two inches beyond pipe flanges. One side of the "T" handle should have a hole for the attachment of a tag and flag
- Blinds shall be purchased from approved manufacturers and shall be designed specifically for the size and rating of the flanges to confirm the proper thickness, flatness, and smoothness of the gasket surface. The table below specifies the use of steel plate with yield strength of to meet the requirements of ASTM A-36, "Standard Specification for Carbon Structural Steel"



Table 1: Blind Rating Chart (per formula in Section 304.53 of ANSI B31.3 using allowable stress of 17,800 PSI) \*

ANSI Class	Nominal Pipe Size (NPS)								
	2"	3"	4"	6"	8"	10"	12"	14"	16"
150	1/4"	1/4"	3/8"	1/2"	5/8"	3/4"	3/4"	7/8"	1"
300	3/8"	3/8"	1/2"	3/4"	7/8"	1-1/8"	1-1/4"	1-3/8"	1-1/2"
600	3/8"	5/8"	5/8"	7/8"	1-1/8"	1-3/8"	1-5/8"	1-7/8"	2-1/8"

\*These blinds are acceptable for a temperature range of -20° to 100° Fahrenheit.

**NOTE:** Field fabrication of slips and blinds is not allowed.

- The use of other types of blinding devices, such as tapped bull plugs and Victaulic caps, may also be considered if these meet or exceed ratings of other members of piping systems. Special attention should be considered to provide the means to bleed down pressure before using these devices.

#### G.4.a.4 Blind Installation Considerations

Blinds shall be installed with the following considerations in mind:

- Will the blind effectively accomplish its purpose in the selected location?
- Can the blind be removed safely when required? (The precautions taken during the installations of the blind shall be followed when removing the blind.)
- Is the selected location accessible to personnel and equipment?
- Is the blind located at the flange closest to the equipment, tank, or vessel?
- Is the blind the correct size and pressure rating? (Consult the facility engineer responsible for the location.)
- Has the line, vessel, or equipment contained toxic or corrosive material?
- Have provisions been made to eliminate or reduce spillage or prevent pollution during installation and removal of the blind?

#### G.4.a.5 Installation of Blinds

Adhere to the following when installing blinds:

- Blinds shall be installed at the flange closest to the vessel, tank, or equipment under consideration
- When vessels or process equipment are interconnected in such a way that blinding of each is not possible or practical, the combination is to be considered as one vessel. The combination will be appropriately blinded and prepared as a unit

- A blind may have a gasket installed on both sides, but a minimum of one gasket installed on the pressure side of the blind is required

#### G.4.a.6 Prior to Opening a Flanged Joint

Before opening any flanged joint for the installation of a blind:

- Verify the exact location where the blind is necessary
- Determine from the designated operator that the equipment or piping is prepared and properly released for blinding
- Verify that correctly sized blinds are to be installed
- Verify that lines and equipment have been de-pressured and drained
  - Determine what product or material has been contained in the equipment or piping. To determine the proper personal protective equipment (PPE) required, refer to the material's Material Safety Data Sheet (MSDS) and PPE requirements in the BP GoM Safe Practices Manual and the site-specific PPE assessment at the facility

**NOTE:** If installation of a blind is to be permanent, then provisions for Management of Change (MOC) shall be followed.

#### G.4.b Double Block and Bleed (EID)

Double block and bleed is isolating a line by means of closure of two block valves in series with an intermediate bleed to a safe location (vented flare/drain vessel or atmosphere). Two forms of double block and bleed isolation follow:

##### G.4.b.1 Double Block and Bleed - Two Valves (EID)

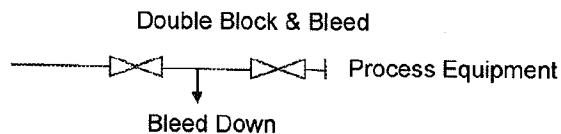


Figure 5: Double Block and Bleed - Two Valves

Double block and bleed - two valves information follows:

- Isolation Locks and tags are required to prevent inadvertent valve operation (e.g., lockable valve mechanism)
- Verify the bleeder is open initially and remains open during the isolation
- The bleeder shall be open between two closed valves

##### G.4.b.2 Double Block and Bleed - Single Valve with Double Seals (EID)

Information on closure of double seal valves, with body drains to a safe location (vented flare/drain vessel or atmosphere), is as follows:

- Valves used for this service shall have two independent seats sealing in the same direction simultaneously
- Valve has no history of leakage or failure

**G.4.c Platform Facilities That Do Not Meet the Requirements of the Isolation Flowchart**

Platform facilities built under an older design specification that do not meet the requirements of the Isolation Flowchart (Figure 6) may perform single valve isolation after a documented risk assessment has been completed for the following.

- Sight glass removal/installation
- Wellhead choke changes
- Filter change out
- Replacement of valves in reciprocating compressors and pumps
- Removal/replacement and testing of instruments (i.e., pressure safety high/low)
- Insertion/removal of pigs from permanent pig launcher/receiver installations
- Change out of relief device being serviced
- Installation and removal of blinds
- Senior orifice fittings in metering systems (applicable to all facilities)

### G.4.d Piping Isolation Requirements

Figure 6 will be utilized to assess proper isolation methods (excluding well work activities).

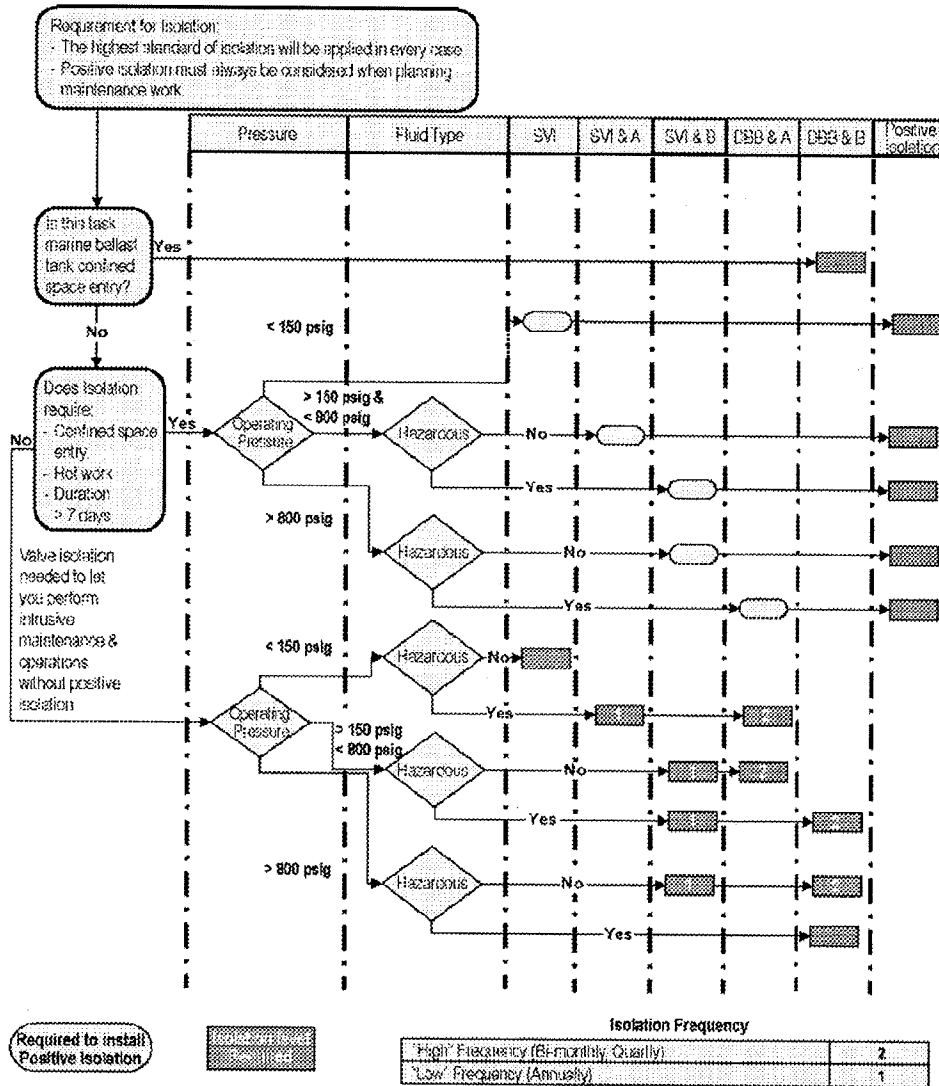


Figure 6: Isolation Flowchart

**NOTE:** Hot work on low pressure (less than 150 psig), non-hazardous fluids (per Table 2, page 92), positive isolation will not be required. Appropriate level of isolation will be determined by a documented risk assessment and MOC.

**NOTE:** "Confined Space Entry" refers to "Permit-Required Confined Space Entry"




The following terms are to be used with the Isolation Flowchart (Figure 6):

Table 2: Hazardous Fluid Types

- |  |   |
|--|---|
| • Corrosive, and toxic or irritant chemical fluids | • Single valve isolation where the valve has a history of leakage |
| • Lube oil, steam, or hot water                    | • Nitrogen  |
| • Naturally Occurring Radioactive Material (NORM)  | • Drilling mud  |
| • Fluids that could have an environmental impact   | • Diesel oil, aviation turbine kerosene                           |
| • Crude and condensate                             | • Process fluids  |
| • Where hydrates may be present                    | • Gas (e.g., methane, H <sub>2</sub> S, etc.)                     |
| • Natural Gas Liquids (NGL)                        | • Fluid containing hydrocarbon gas                                |

**NOTE:** Examples of non-hazardous items are: cold water, fresh water, air and cooling water

Table 3: Acronyms/Symbols used in Figure 6

SVI – Single valve Isolation	 - Insertion of a blind between bolted or clamped flanges shall be witnessed by the Isolator/Authorized Employee. In each case, the insertion is rated to pipe design specification; or removal of pipe work section, and bolting/clamping onto live ends blank (blind) flanges rated for full line design pressure (i.e., for specific applications).
<b>A – Low Risk Isolation</b>	<b>Isolation safeguards required per Table 4</b>
<b>B – High Risk Isolation</b>	<b>Isolation safeguards required per Table 4</b>
 1	Low frequency isolation – refer to Table 5
 2	High frequency isolation – refer to Table 5
<b>DBB</b>	<b>Double Block and Bleed</b>

**NOTE:**

1. Push buttons, selector switches, and other control circuit-type devices are not energy isolating devices.
2. Facility management has the authority to add to Table 3 as warranted.

Table 4: Isolation Safeguards

Safeguards	A Low Risk Isolation	B High Risk Isolation
Gas test at intervals (not required for non-hazardous utilities)	O	M
Continuous gas monitoring (not required for non-hazardous utilities)	M	M
Pressure build-up test (i.e., checking for a leaky valve prior to stating work)	M	M
Regular monitoring of isolation	M	M
Control/prevention of nearby work	M	M
Radio link to control room when breaking containment	O	M
Development of contingency plan against leakage	O	M
Identification of back-up isolation valves, shutdown system, etc.	O	M
Minimization of task time	O	M
Portable firefighting kit available (not required for non-hazardous utilities)	O	M
Minimization of the possibility of plant disturbance	O	M
Usage of additional mechanical ventilation	O	O
Firewatch/standby man	O	M
Testing of F&G detectors and the ESD system (not required for non-hazardous utilities)	O	O
Reduction of operating pressure upstream	O	O
Reduction of potential leak inventory	O	O
Improvement of access/egress	O	O

## Legend:

M Indicates Mandatory Safeguards to be applied

O Indicates Optional Safeguards to be considered

The following listed isolation frequencies are based on current operations and risk assessments. They are intended to assist in providing the correct isolation capability per Figure 6 - Isolation Flowchart.

Table 5: Isolation Frequency

Device	Typical Activity	Typical Frequencies
Typical Separators	Entering vessel	LOW
PSV's	Replacing seat	LOW
SDV's / BDV's	Replacing trim and/or seat	LOW
Control Valve Station	Removal/Repair of control valve while continuing to operate	LOW
Meter Runs	Removal or replacement of turbine meters while bypassing	HIGH

Device	Typical Activity	Typical Frequencies
Scrubbers	Opening vessel to make repairs	LOW
Exchangers	Cleaning out	LOW
Pipeline Pump	Maintaining one pump with other pumps operating in parallel	HIGH
HP Injection Pump	Maintaining one pump with other pumps operating in parallel	HIGH
VRU	Maintaining one compressor with other compressors operating in parallel	HIGH
Compressors	Maintaining one compressor with other compressors operating in parallel	HIGH
Single Stage Hydrocarbon Pumps	Maintaining one pump with other pumps operating in parallel	HIGH
Strainer/Filter, Filter Separator	Removal of strainer to clean, or replace filters	HIGH
Pig Launchers	Opening and launching pig while continuing to operate	HIGH

**NOTE:** Facility management has the authority to edit and add to this list as warranted. For example, typical frequencies may vary from facility to facility.

#### G.4.e Additional Isolation Methods

- A hydrostatic/hydrodynamic isolation device that monitors the pressure on both sides of the plug is acceptable (i.e. Car-Ber Testing Services)

**NOTE:** If installation of a blind is to be permanent, then the provisions for Management of Change (MOC) shall be followed.

### G.5 Energy Isolation Training

All Affected Employees and Isolator/Authorized Employees, and others who work in operational areas where energy isolation may be performed, shall be trained prior to their participation in the program. Energy isolation awareness training shall be conducted during the facility introduction. Retraining shall be provided:

- Whenever there is a change in the energy isolation program
- Whenever job changes or changes in equipment or processes present a new hazard
- When periodic inspections reveal inadequacies in a worker's knowledge of the procedure

The training shall confirm that the purpose and function of the energy isolation program is understood and that the knowledge and skills required for the safe application, usage, and removal of energy controls have been conveyed to personnel.

All training shall be documented, including the date and names of employees attending the training.

### G.6 Annual Review

The permit-required Energy Isolation program shall be reviewed at least once a year (self-assessed) unless no isolation is performed within the last 12 month time period. Revisions shall be made to the program as necessary to protect employees from the potential hazards of stored

energy and energy isolation. Documentation of annual program reviews/assessments shall be retained for one year from the review using the ISSOW audit tool.

## **H Key Documents**

CoW Gap Assessment Tool

S&O Control of Work Audit Protocol

S&O CoW Assessment Tool

GoM Control of Work Field Audit Card

Group CoW Website

GoM Action Tracking Practice

Firewatcher Competency Assessment

SIMOPS

Lessons Learned Procedure

Integrated Field Planning Link

IM related Risk Assessment Practices and Procedures



**Revision Log**

<b>Revision Date</b>	<b>Authority</b>	<b>Custodian</b>	<b>Revision Details</b>
06/01/09	GoM HSSE Director	GoM HSSE Programs Manager	Chapter 8 Changes to improve definition of Control of Work, Permit to Work, Confined Space Entry, Energy Isolation, and Issuing Authorities
07/08/08	GoM HSSE Director	GoM HSSE Programs Manager	Clarified references on Table 3 for Low Risk and High Risk Isolations, referring to Table 4 instead of Figure 6.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	All 12 elements of CoW addressed Permit to Work, Hot Work and Safe Welding Plan, Confined Space Entry, Energy Isolation, JSEA and Stop Work Authority harmonized within the Control of Work Chapter One consistent "Definitions" table for Cow, Permit to Work (PTW), Confined Space Entry (CSE) and Energy Isolation (EI) One consistent "Key Responsibilities" table for Cow, PTW, CSE and EI Hot Work and Safe Welding Plan embedded within PTW section Energy isolation revised to reflect one standard process for conducting energy isolation in the GoM
06/09/06	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Kathy Kanocz	New chapter of the Safe Practices Manual.



**GoM Safe Practices Manual (SPM) – Driving Safety**  
**Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00088-2**

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/07/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

## A Purpose/Scope

This chapter provides the driving safety requirements when operating any vehicle on BP business and all BP owned or rented vehicles. Certain aspects of this chapter apply to BP employees who are passengers in vehicles when on BP business.

## B Definitions

Definitions Table

Term	Definition
Affected Vehicle	<ul style="list-style-type: none"> <li>Any company vehicle assigned to an employee or utilized as a pool vehicle</li> <li>Any personal vehicle used on company business with operating expenses reimbursed by company</li> <li>Any rental or leased vehicle used by an employee on company business</li> <li>Non-reimbursable commuting is excluded</li> </ul>
BP Premises	Any site, location, vehicle, or vessel that is owned or operated by or on behalf of a BP company
Company Business	Any activity performed to meet BP's business needs defined as "work-related" under the U.S. OSHA record keeping requirements; personal or optional activities are excluded
Company Vehicle	A vehicle owned and/or under long-term lease to BP
Drive Time	The time spent driving a vehicle on BP business
Driving Safety Course	Training which meets the BP Defensive Driving Performance Specification and Fatigue Awareness requirements. Defensive driving is scheduled through Virtual Training Assistant (VTA)
Heavy Vehicle	Any vehicle greater than three and one-half tons of fixed chassis or articulated trailer, excluding a mobile plant
Journey Risk	The management system to confirm all applicable journeys

Control Tier 2 – GoM HSSE

CD# UPS-US-SW-GOM-HSE-DOC-00088-2

Revision Date: 06/01/08

Uncontrolled Document. Valid Only at the Time of Printing. Print Date: 10/7/2008

Term	Definition
Management Plan	are assessed, appropriately risk minimized, documented and implemented
License	A documented, personal identification authorizing the named person to drive designated classifications of vehicle on stated on-road or off-road locations. Depending on the vehicle and the area in which it is operated, licenses may, where not issued by a public authority, be issued by or an approved BP authority (e.g., refinery, site, or airport authority)
Light Vehicles	Any vehicle less than three and one-half tons, excluding a mobile plant
Medical Condition	Any medical condition that may interfere, temporarily or permanently, with the individual's ability to control the vehicle
Mobile Plant	Any specialized motorized equipment or vehicle used exclusively within the confines of a controlled site, or vehicle used for lifting, material handling, construction, drilling, and excavation work. This excludes standard light vehicles used within a controlled site. This is not applicable to fixed cranes
Operational Control	Where BP plc. and/or a wholly owned subsidiary, joint venture, or other business entity directly working for BP plc. is in a position to exercise executive authority (i.e., capable of mandating operations rules and regulations, or is in a position of significant influence over them) in the running of an operation
Professional Driver	Any heavy vehicle driver, bus driver, chauffeur, and/or any light vehicle driver who drives more than 16,000 kilometers (10,000 miles) per year on business (or pro-rata mileage for any part of a year) and is thereby regarded as having driving as a core competency as part of their job. A mobile plant operator who as part of their job drives for more than 15 percent of working hours (or pro-rata time for any part of the year) is deemed to be a professional driver. The GoM has a very small number of professional drivers. The list of professional drivers is retained in Virtual Training Assistant (VTA)
Rental Vehicle	A rental vehicle is a vehicle that is not owned by BP, which is rented or hired for a specific period of time. This includes short-term and long-term leases for light vehicles. Leased heavy vehicles are defined as heavy vehicles
Work Force	Every direct employee of BP and its subsidiaries and joint ventures (>50% ownership) and contractor companies that engage in direct work on BP premises on behalf of BP, or to transport our people, materials, intermediates, and products
Working Hours	All paid hours on BP business, inclusive of work breaks

## C Key Responsibilities

Position	Responsibilities
All BP Employees Operating any Vehicle on BP Business	<ul style="list-style-type: none"> <li>Complete training as required</li> <li>Advise your supervisor of any medical, physical, or psychological condition that would impair your driving performance</li> <li>Inspect the vehicle before use to confirm it is in proper working condition</li> <li>Report any malfunction or problem with a company-owned vehicle to your supervisor</li> </ul>
Supervisors	<ul style="list-style-type: none"> <li>Confirm BP personnel assigned to driving tasks, including new employees and transferees, are trained and qualified to operate that class of vehicle (driver safety training that includes fatigue management training)</li> <li>Confirm driver's licenses are checked and records maintained for those driving company-owned vehicles</li> <li>Confirm the purchase of vehicles meets the BP Group Minimum Vehicle Specifications</li> <li>Confirm that manufacturer's recommendations for vehicle maintenance are being met and records are maintained</li> <li>Confirm appropriate emergency response equipment is supplied in company-owned vehicles</li> <li>Confirm the GoM Driving Safety Practices are followed</li> </ul>

## D Procedures

The following sections outline the requirements of the driving policy.

**NOTE:** Using cell phones and radar detectors while driving on company business is prohibited. For BP business, the use of motorcycles is strictly prohibited in the Gulf of Mexico.

### D.1 Affected Vehicle Requirements

Item	Requirement
Emergency Preparedness Equipment	Each BP-owned vehicle should be equipped with emergency equipment (e.g., cell phones, radios, fire extinguishers, flares, first-aid kit, etc.)
Loads	Loads shall be secure, and the weight shall be within the manufacturer's specifications and legal limits
Motorcycles	Prohibited
Operations and Maintenance	Personnel assigned a Company vehicle shall confirm the vehicle operates properly and is maintained in accordance with the manufacturer's recommendations

Item	Requirement
Passengers	The number of passengers shall not exceed the manufacturer's design specification for the vehicle (i.e., no passengers in the back of trucks, no more passengers than seatbelts, etc.)
Radar Detectors	Prohibited
Vehicle Data Recorder	Owned or long-term leased BP light vehicles will be equipped with a Vehicle Data Recorder (VDR) able to record the following minimum data: seatbelt use, speed, harsh acceleration, harsh deceleration, and driving hours
Vehicle Safety	Vehicle is fit for the purpose and is maintained in safe working order with seatbelts installed and functional. The numbers of passengers are not to exceed the manufacturer's specification for the vehicle

## D.2 Driver Requirements

These requirements apply to affected vehicles.

Item	Requirement
Driver/Operator License/ Certifications	Drivers shall possess a valid driver's license for the class of vehicle operated. Operators of specialty vehicles (i.e., forklift, backhoe, bobcat, front-end loader, etc.) shall possess appropriate certifications. Drivers shall notify their supervisor if their license is suspended or revoked
Driver/Operator Training	Drivers are required to successfully complete approved Driving Safety course within six months of commencing driving on BP business. Refresher training shall be completed at least every three years thereafter
Fatigue and Tiredness	<p>Drivers are obliged to stop if tired or fatigued. They should either make alternative travel arrangements or have an appropriate period of rest/sleep before driving.</p> <ul style="list-style-type: none"> <li>No driver shall drive more than ten hours in any consecutive 24-hour period</li> <li>Additionally, during the same 24-hour period, the driver shall have a minimum of eight consecutive hours rest break</li> <li>Drivers should take at least a ten minute out-of-the-car break every two hours</li> </ul> <p>Work/drive time combination is limited to no more than 14 hours during any one 24 hour period</p>
Fueling Vehicle	Drivers shall take measures to prevent ignition of flammable vapors, such as observing smoking restrictions and grounding/bonding requirements
Headlights	Headlights shall be used at all times while driving vehicles

Item	Requirement
Mobile Phones or Two-Way Communication Devices	The driver cannot use a mobile phone or two-way communication devices while operating the vehicle
Parking	Drivers shall assess hazards and legally park in a manner
Personal Use of Company Vehicle	Company vehicles may only be used with prior authorization by local management
Pre-trip Risk Assessment and Route Planning	In order to minimize driver hazard exposure, drivers are responsible for challenging the necessity, frequency, and/or extent of trips with the intent to limit hazard exposure
Radar Detectors	Strictly prohibited
Seatbelts	Drivers shall confirm that all occupants wear equipped seatbelts while a vehicle is in motion. In addition, certain mobile plant vehicles (i.e., forklift, backhoe, bobcat, front-end loader) shall have seatbelts worn while in operation
Unattended Vehicles	Vehicles with manual transmissions shall be parked with the transmission in its lowest forward gear or reverse gear and with the parking brake set
Vehicle Incidents	Incidents shall be reported to the driver's immediate supervisor as soon as possible

For more information on forklift and industrial truck operations, see the BP GoM HSSE website and select Forklift and Industrial Truck Operations.

## E Key Documents

[Group Driving Safety](#)

[Professional Driving Requirements](#)

[Pre-Trip Assessment Guidance](#)

[Safe Fueling Guidance](#)

[Vehicle Inspection Checklist](#)

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Revised to specifically address the requirements for the GoM . Definition table added
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis; C. Jackson	Kathy Kanocz	Added in reference to time line for implementation of vehicle standards for non-professional drivers. Changed CD # from 10080 to UPS-US-SW-GOM-HSE-DOC-00088-2 to conform to new numbering nomenclature in the new GoM HSSE doc base. Changed 3 authorities. Changed

Revision Date	Authority	Custodian	Revision Details
			Revision dates on <u>Appendix A, Professional Driver Requirements</u> <u>Appendix B, Pre-Trip Assessment Guidance</u> <u>Appendix C, Safe Fueling Guidance</u> <u>Vehicle Inspection Checklist</u> to match the revision date of the main procedure. Added Group Standard Vehicle Specifications to references.
04/15/04	S. Garner/ B. Herbert/ R. DeLeonardis; S. Flynn	Kathy Kanocz	Revised entire policy to reflect Group Driving Standard Requirements. Major changes include: definitions, roles and responsibilities, driver training requirements, Professional Driver Requirements, and vehicle data recorder requirements. Sections 3.0, added language on zero tolerance, disciplinary actions; Section 5.0, added hyperlinks to form. Section 6.0, added hyperlink to GBC Driving Safety Golden Rule. Changed custodian and one authority.
10/18/02	S. Garner/ B. Herbert/ M. Kudla/ S. Flynn	Ray Britt	Reviewed document with current Group Driving Safety Requirements. Added language for alignment to Group GR Requirements to clarify that drivers have a valid license.
02/07/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Electrical Safety

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00100-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/18/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	07/16/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

The purpose of this chapter is to provide Electrical Safety requirements.

### B Definitions

Definitions Table

Term	Definition
Explosion Proof	An apparatus enclosed in a case that is capable of withstanding an explosion of a gas or vapor that may occur within it and preventing the ignition of a gas or vapor surrounding the enclosure
Grounding	A safe pathway for electricity to follow to the ground in the event of electrical leakage in circuits and/or equipment
Intrinsically Safe Equipment	Equipment in which any spark or thermal effect is incapable of causing an ignition of a flammable or combustible material in air
Qualified Person	One who has received training in and has demonstrated skills and knowledge in the construction and operation of electrical equipment and the hazards involved and are permitted to work on or near exposed or energized parts
Service Point	The point of connection between the facilities of the serving utility and the premises wiring

### C Overview

The Electrical Safety requirement applies to all operations involving work on or near an energized installation. Only qualified personnel shall operate, maintain, inspect and test electrical equipment and systems.

### D Procedures

The content of these procedures is an overview of the safety requirements for working on or near electrical equipment and systems. For detailed requirements, refer to NFPA 70E.



### ***D.1 Testing Equipment***

Test equipment shall be calibrated, tested, and used in accordance with manufacture's instructions. Test equipment shall also be inspected and tested before and after each use to check for proper operation. In addition, all test equipment shall be inspected, tested, and calibrated annually. A non-contact voltage proximity meter that is rated for the voltage being tested is recommended when performing tests to confirm energization of equipment such as panel boards, switchgear, and motor control centers.

### ***D.2 Verification of Electrical Isolation When Performing Lockout/Tagout***

After all sources are isolated, tagged, and locked out, Qualified personnel shall use test equipment to confirm exposed, normally energized parts of electrical equipment are de-energized. During this test, Qualified personnel shall wear PPE rated to protect the individual against the arc-flash and shock hazards present as if the equipment was energized. The test shall be used to determine that all sources are isolated, equipment de-energized, and if any residual, back-fed, or induced voltage is present.

### ***D.3 De-Energizing Live Parts***

Live or potentially energized parts shall be de-energized, locked, tagged and tested before personnel begin work on or near the parts. Only under approval of Management (Offshore Installation Manager or other approved Facilities Operations Manager) shall equipment be worked on while exposed live parts are present. Examples of possible situations where Management might approve such work include:

- De-energizing would introduce additional or increased hazards (such as deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of critical illumination from an area)
- It is not feasible due to equipment design or operational limitations (i.e., testing of electrical circuits that can only be performed when energized or working on circuits that form an integral part of a continuous industrial process that otherwise requires a complete shutdown in order to permit work on one circuit or piece of equipment)

If the exposed live parts are not de-energized, the following practices shall be used to protect exposed personnel:

- A detailed procedure shall be prepared that outlines the specific risks and the mitigation that will be used to reduce the risk to an acceptable level
- Only qualified persons may perform the work
- Proper electrical PPE shall be worn
- When exposed energized electrical components are involved, guarding, isolating, or insulating materials shall be used to protect the individual from direct body contact or indirect body contact via tools, equipment, and other conductive materials
- Provide illumination
- When confined spaces such as manholes or vaults are involved, protective shields, barriers, or insulating materials shall be used to avoid inadvertent contact with energized parts
- Secure doors, hinged panels, etc., to prevent their swinging into personnel
- Handle conducting materials in contact with the employee appropriately to prevent them from contacting energized parts
- Only use portable ladders with nonconducting side rails (fiberglass)

- Do not wear conductive clothing or jewelry (i.e., watch bands, bracelets, rings, key chains, necklaces, metallic aprons, or metal headgear)
- Do not use conductive cleaning materials (i.e., steel wool, metallic cloth, silicon carbide, or any conductive liquid solutions) in proximity to energized parts unless procedures are followed to prevent contact with energized parts

#### **D.4 Disconnecting Means For Electrical Isolation**

Only load-rated switches, circuit breakers, or other devices specifically designed for disconnecting electrical power circuits may be used for opening, reversing, or closing circuits under load conditions.

Only primary disconnect switching devices that physically disconnect the power supply circuit conductors from equipment being maintained shall be used to isolate the electrical energy for lock-out-tag-out purposes. Lock-out of control switches that isolate control power to automatic switching components of the electrical equipment shall not be used as the sole method of electrical isolation.

After a circuit is automatically de-energized (tripped) by a fuse or circuit breaker, it shall not be re-energized until the equipment and circuit have been identified as safe for energizing by a Qualified Person. Manual re-closing of circuit breakers, or re-energizing circuits by replacing a fuse, more than once is prohibited until the underlying problem is identified and corrected.

Bypassing protective devices or using a fuse or circuit breaker with a rating too high to protect the circuit or equipment involved is prohibited.

The following procedures shall be followed when working at electrical control panels:

- Proper PPE designed to provide shock hazard and thermal protection from arcing shall be worn (see Protective Equipment section in this chapter)
- Before contacting any components in an electrical control panel, confirm de-energization with an appropriately rated voltmeter or other device approved for the service
- Before operating switches or breakers, confirm all protective panels are closed and fastened
- To disconnect the electrical power from equipment such as motor starters, always turn the control switch to the off position before turning the main disconnect switch to the off position
- To re-energize electrical equipment such as motor starters, always confirm control switches are off before turning on the main disconnect switch
- When operating the control or main switch, NEVER stand in front of the electrical panel. Always stand off to the side of the panel to operate the switch. Never look at the control panel. Should the panel explode, your eyes and body shall not be in a direct line with the explosion

#### **D.5 Labeling of Electrical Systems**

All components of electrical systems shall be legibly marked indicating voltage, source of power, and what the component feeds. The electrical distribution system (service, feeder, and branch circuits) shall also be legibly marked and cross referenced between components to indicate their purposes. The markings shall be sufficiently durable to withstand the service environment.

The covers on pull and junction boxes of 600 volts or above shall be permanently marked "DANGER, High Voltage".

Where doors are used for access to live electrical equipment rated 600 volts (AC or DC) or above, either door locks or interlocks shall be provided and latches shall require a tool to open the door.

Switches, controllers, and circuit breakers used for isolation purposes shall be limited to those that can be mechanically locked out in the off position.

## **D.6 Electrical Equipment and System Grounding**

Confirm that the electrical equipment manufacturer's grounding recommendations are followed when installing or using any electrical equipment or devices.

Equipment safety grounding conductors provided in temporary wiring should be the first to be connected and the last to be disconnected for any temporary wiring.

As defined in the National Electrical Code (NFPA 70), API-RP-14F, and applicable OCS orders, the power system grounding and equipment safety grounding for the permanent electrical equipment on the facility shall be maintained to ensure the integrity of the grounding system. Periodic inspection and testing shall be performed to ensure the integrity of the system. In general, the inspection and testing of the equipment grounding shall be performed when the equipment overall inspection and tests are performed. Main grounding system routine inspections shall be done on an annual basis.

### **D.6.a Temporary and Portable Wiring Installations**

The following requirements apply to temporary and portable wiring installation that are used during maintenance, remodeling, construction activities or repair of buildings, structures, or equipment. All circuits used in temporary and portable wiring installations shall be protected by using either ground fault circuit interrupters (GFCI) or an assured grounding conductor program as detailed in this section. This is a requirement of OSHA 1910.304(b)(3)(ii).

### **D.6.b Equipment Inspection, Testing, and Ground Fault Circuit Interrupter (GFCI) Usage**

Personnel shall be protected by using either ground fault circuit interrupters (GFCI) or an assured grounding conductor program

All 120-volt single-phase, 15-, 20-, and 30- ampere receptacle outlets that are not part of the permanent wiring of the building or structure and that are in use by personnel shall have ground-fault circuit-interrupter protection for personnel. For example, GFCIs shall protect all circuits supplying portable extension cords when used to serve equipment such as power tools. Cord sets and devices incorporating the required ground-fault circuit-interrupter are acceptable forms of protection and shall be connected to the receptacle closest to the source of supply.

For the purposes of meeting the requirements of this section, GFCI protection may be provided by the following types: receptacle type; integral to the portable extension cord on the supply side end of the cord; or integral to the circuit breaker protecting the circuit.

All GFCIs required by this section shall be tested periodically to confirm their operability. The testing intervals shall not exceed 3 months, except that cord sets, receptacles and circuit breaker GFCIs which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.

Double insulated tools are not required to be grounded or tested.

**CAUTION:** When electrical equipment is used in potentially wet areas and connected to a circuit that does not have a GFCI incorporated, it shall be protected by a portable GFCI.

### **D.6.c Assured Equipment Grounding Conductor Inspection Program**

All circuits not protected by a GFCI shall have grounding conductors that are inspected and tested periodically. The inspection and testing program shall cover cord sets, receptacles that are not a part of the building or structure, equipment connected by cord and plug that are

available for use or used by employees on those receptacles, and equipment connected by temporary wiring that is not connected by plug and receptacles.

The program shall consist of the following inspection and tests and shall be performed by the person responsible for maintaining the equipment:

- Written description of the inspection and test program shall be provided
- Inspection and tests completed before equipment's first use
- Inspection and tests completed before equipment is returned to service following any repairs
- Inspection and tests completed before equipment is used after an incident that is suspected to have potentially caused damage to equipment, (e.g., when a cord is damaged)
- Inspections and testing intervals not to exceed three months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months

Tests performed under the assured grounding conductor testing program shall be documented and kept on file at the applicable field or plant location. Test documentation shall identify each item of equipment tested and indicate the last date it was tested.

Equipment found to be defective shall be tagged out of service and not used until repaired by a qualified person.

### ***D.7 Portable Electrical Equipment***

Follow the guidelines below for portable electrical equipment:

- Portable equipment shall be properly handled to avoid damage to the equipment. Electrical cords shall not:
  - Be used for raising or lowering equipment
  - Be fastened by staples
  - Be hung in a manner which could cause damage to the outer insulation
- Extension cords and equipment cords shall be visually inspected before use for damage (loose parts, deformed or missing pins, damage to the outer cover or insulation, or pinched/crushed outer jacket). A visual inspection is not required if equipment/cords remain connected and are not exposed to damage. All defective or damaged cords and equipment shall be removed from service and tagged out immediately. They shall not be used until repaired and tested.
- Grounding type cords shall be used with grounding type equipment. Receptacles and plugs may not be altered such that proper continuity can not be achieved. Adapters cannot be used that defeat the grounding connection of equipment.
- In areas with potential exposure to conductive liquids, only equipment and cords approved for use in wet locations shall be used
- Hands shall be dry when plugging or unplugging energized equipment. If energized plugs or receptacles are wet or could otherwise provide a conducting path, only insulating protective equipment shall be used for handling the connection devices.
- Locking type connectors shall be properly locked after connection

### ***D.8 Personal Safety Measures***

**WARNING:** Do NOT work on anything you are not trained and qualified to work on.

Hands, shoes, and clothing shall be dry when any energized electrical equipment is handled. Jewelry shall be removed prior to working on energized electrical equipment.

All protective equipment shall be inspected before each job.

When it is necessary to work on an energized circuit, always use approved rubber gloves and stand on a rubber mat. Rubber insulating blankets and other insulating materials appropriate for the voltage involved shall adequately cover the conductors in the work area. Never depend on insulated tools as a first line of protection to prevent electrocution or arc flash hazards.

Personnel shall not touch the metal frame of a case if it is ungrounded while they are in contact with the ground or a grounded object. All electrical equipment support frames shall be electrically bonded to surrounding facility structure. This local bonding shall be in addition to the electrical safety grounding conductor that is routed with the power supply wiring.

Tag, mark, and post suitable signs to warn other workers of possible dangers involved in the work.

Barricades and barriers shall be used in accordance with chapter entitled Barricades and Barriers.

### ***D.9 Personnel Protective Equipment***

Thermal protection from electrical arc flash shall be used when qualified persons are working on or near exposed live energy sources of 600 volts or greater.

At a minimum, the electrical flash suit shall be rated for the maximum arc flash exposure determined based on NFPA 70E arc flash hazard assessment for the equipment where service is being performed. The assessment shall either utilize the degree of hazard tables as provided in NFPA 70E or determined by calculations in accordance with industry standard methodology such as IEEE 1584. The flash suit shall conform to the latest NFPA and ASTM F1506 standard.

Only rubber insulating protective equipment such as insulating blankets, matting, covers, line hoses, gloves, and sleeves that are manufactured and tested per the specifications in the applicable American Society for Testing and Materials (ASTM) standard shall be used.

Refer to OSHA standard 29 CFR 1910.137 for additional guidance.

#### **D.9.a Requirements for Care and Use of Rubber Insulating Equipment**

Electrical protective equipment shall be maintained in a safe, reliable condition through proper usage, inspections, cleaning, storage, and testing. Insulating equipment shall be inspected for damage prior to use and after any incident that may have caused damage.

The insulating equipment shall not be used on voltages higher than what it was designed for.

Rubber insulating gloves shall also be given an air test along with the inspection. A visual inspection alone will not reveal "pin-hole" defects in gloves. Even a "pin hole" will allow current to pass through the glove and cause electrical injury. The cuff of the rubber glove shall be rolled to create an airtight seal during inflation of the glove. If the glove deflates or will not hold air, it shall be destroyed.

Leather gloves properly matched with rubber insulating gloves shall be worn to:

- Provide abrasion resistance
- Puncture resistance
- Prevent arcing to skin

Insulating equipment with any defect that would degrade the insulating properties shall not be used and shall be destroyed.

The insulating equipment shall be kept properly cleaned of foreign substances. The insulating equipment shall be stored to protect it from light, temperature extremes, excessive humidity, ozone, and other damaging conditions.

Electrical protective equipment shall be electrically tested per the intervals described below in accordance with the requirements of the applicable ASTM standard. Insulating equipment failing to pass inspections or electrical tests shall not be used and shall be destroyed, unless repaired

in accordance with manufacturer specifications. Repaired equipment shall be electrically re-tested before use.

Refer to OSHA standard 29 CFR 1910.137 for applicable ASTM standards.

### D.9.b Rubber Insulating Equipment Test Intervals

Table 1: Test Interval Table

Rubber Insulating Equipment	Test Interval
Rubber insulating line hose	Test upon indication that insulating value is suspect
Rubber insulating covers	Test upon indication that insulating value is suspect
Rubber insulating blankets	Test before first issue and every 12 months thereafter*
Rubber insulating gloves	Test before first issue and every 6 months thereafter*
Rubber insulating sleeves	Test before first issue and every 12 months thereafter*

**CAUTION:** \* If the insulating equipment has been electrically tested but not issued for service, it shall not be placed into service unless it has been electrically tested within the previous 6 months for rubber insulating gloves and 12 months for rubber insulating sleeves.

Certification that the equipment is tested per requirements shall be maintained. To provide the required certification of the electrical tests, invoices or the equivalent, identifying the equipment and the test date or purchase date, shall be maintained.

### D.9.c Restrictions on Personal Equipment

Only non-conductive hard hats (ISEA Z89.1, Class E) are allowed for use where there is a potential for injury from electric shock or burns due to contact with energized parts.

Only insulated tools or handling equipment shall be used when working near energized equipment if the tools or equipment might come in contact with the parts. The insulating materials of the tools shall be protected against damage and rated for the voltage that may be encountered.

- Fuse handling equipment, insulated for the circuit voltage, shall be used to remove or install fuses when the terminals are energized
- Ropes and hand lines used near exposed energized parts shall be non-conductive and kept clean
- Protective shields, barriers, or insulating materials shall be used to protect each employee from shock, burns, or other electrical injuries while the employee is working near the energized parts that may be accidentally contacted. This includes guarding the exposed energized parts from access by unauthorized personnel.

***D.10 Overhead Lines (overhead power lines are not used offshore, this requirement can be omitted)***

When an unqualified person is working in the vicinity of an overhead line, the person, and any object the person is in contact with which could contact the overhead line, shall not come closer to the overhead line than:

- For voltages to ground 50kv or below - 10 feet
- For voltages to ground over 50kv - 10 feet plus 4 inches for every 10kv over 50kv

**CAUTION:** For voltages encountered with overhead power lines, objects that do not have an insulating rating for the voltage involved are considered conductive.

Guidance for qualified persons can be found in 29 CFR 1910.333(c)(3).

Any vehicle or mechanical equipment capable of having structure parts elevated near energized overhead lines of 50kv or less shall be operated so that a clearance of 10 feet is maintained. If the voltage is greater than 50kv, the clearance shall be increased 4 inches for every 10kv.

Conditions that may reduce these clearance requirements can be found in 29 CFR 1910.333 (c)(3).

***D.11 Hazardous Areas***

In hazardous (classified) areas, only equipment specifically approved by a United States Coast Guard approved third part testing agency shall be used. The equipment shall be approved for its intended service and classified area as designated by the hazardous area plan drawings for the facility. The facility areas are classified in accordance with article 500 or 505 of the National Electrical Code and API-RP-14F. The facility hazardous area plans are developed to show the extent of the hazardous areas and are in accordance with API RP 500 or 505. In general, equipment that is not certified or approved for use in a hazard shall not be used in those areas. Only when approved by the facility Operations Installation Manager (OIM) and in accordance with the facility hot work permit system shall non-approved electrical equipment be used in a hazardous area.

Electrical equipment in hazardous areas shall be de-energized prior to the performance of inspection and maintenance activities such as opening explosion-proof enclosures.

Maintenance and inspection activities on energized electrical equipment in hazardous areas must be approved by the OIM and in accordance with the facility hot work permit system prior to performing the work.

**NOTE:** Hazardous areas most likely encountered in exploration and production (E&P) locations will be designated according to the following classes:

- Class I, Zone (Division) 1 is designated as:
  - A location where ignitable concentrations of flammable gases or vapors exist under normal operating conditions
  - Where ignitable concentrations of gases may exist frequently due to repairs, maintenance, or leakage
  - Where breakdowns or malfunctioning equipment or processes might release ignitable concentrations of flammable gases or vapors, and might also cause simultaneous failure of electrical equipment
- Class I, Zone (Division) 2 is designated as:
  - A location where volatile flammable liquids or vapors are handled, processed or used and are normally confined within closed containers or systems
  - Where ignitable concentrations of gases or vapors are normally prevented by positive mechanical ventilation and which may become hazardous if this ventilation failed

Where the location is adjacent to a Class 1, Zone (Division) 1 area which might communicate ignitable concentrations of flammable gases or vapors, unless prevented by adequate positive pressure ventilation from a source of clean air and effective safeguards against ventilation failure are provided

Equipment installed in hazardous (classified) areas shall be legibly marked by the manufacturer or the testing agency indicating in what areas it is approved for use.

## E Codes, Standards, and Regulations

The following codes, standards, and regulations form the basis for the requirements of this section of the standard. The latest addition of the following standards shall be followed along with the adoption of those standards to applicable regulations

### American Petroleum Institute (API)

API RP 14F, Recommended Practice for Design and Installation of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Division 1 and Division 2 Locations

API RP 500, Recommended Practice for Classification of Locations for Electrical Installation at Petroleum Facilities Classified as Class I, Division 1 and Division 2

API RP 505, Recommended Practice for Classification of Locations for Electrical Installation at Petroleum Facilities Classified as Class I, Zone 0, Zone 1 and Zone 2

### American Society of Testing and Materials (ASTM)

### American National Standards Institute (ANSI)

ASSE Z87.1 Practice for Occupational and Educational Eye and Face Protection

ISEA Z89.1 Industrial Head Protection for Electrical Workers

### Institute of Electrical and Electronic Engineers (IEEE)

IEEE 1584, Guide for Performing Arc-Flash Hazard Calculations

### National Fire Protection Association (NFPA)

NFPA 70, National Electrical Code

NFPA 70 E - Standard for Electrical Safety in the Workplace

Occupational Safety and Health Standards, 29 CFR 1910 Subpart S - Electrical



Specific Sections of focus include:

OSHA 29 CFR 1910.137 - Electrical Protective Devices

OSHA 29 CFR 1910.304 - Wiring design and protection

OSHA 29 CFR 1910.333 - Selection and Use of Work Practices

OSHA 29 CFR 1910.399 Subpart S Definitions - Qualified Person

Revision Date	Authority	Custodian	Revision Details
07/16/2008	GoM HSSE Director	GoM HSSE Programs Manager	Updated reference to ISEA Standard Z-89.1 in D.9.c. Previously referenced standard Z-89.2, which is obsolete.  Updated reference to Z-87 and Z-89 in Section E of document to note issuing organization of standard.
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	Chapter revised to ensure compliance with National Electrical Code (NFPA 70), API-RP-14F, and applicable OCS orders Frequency for test equipment calibration, inspection and testing clarified Frequency for testing ground fault circuit interrupters revised Deleted section on overhead lines
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	No content revisions. Changed CD # from 10022 to UPS-US-SW-GOM-HSE-DOC-00100-2 to conform to new numbering nomenclature in the new GoM HSSE doc base. Changed 3 authorities and 1 custodian.
01/18/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Flammable/Combustible Liquids Storage and Handling

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00104-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/23/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	05/01/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter describes the methods for safe storage and handling of Flammable and Combustible liquids.

### B Definitions

Definitions Table

Term	Definition
Boiling Point	The temperature at which a liquid boils at a pressure of 14.7 pounds per square inch absolute (psia)
Bonding	The process of establishing electrical continuity between two or more conductive surfaces
Closed Container	A container sealed by means of a lid or other device that will not allow liquid or vapor passage at ordinary temperatures
Combustible Liquids	Liquids that have a flashpoint at or above 100°F. Combustible liquids are subdivided as follows: <ul style="list-style-type: none"> <li>• Class II liquids have flashpoints at or above 100°F and below 140°F</li> <li>• Class IIIA liquids have flashpoints at or above 140°F and below 200°F</li> <li>• Class IIIB liquids have flashpoints at or above 200°F</li> </ul>
Container	Any can, barrel or drum that conforms to OSHA and/or DOT requirements

Term	Definition
Flammable Liquids	Liquids that have a flashpoint below 100°F and have a vapor pressure not exceeding 40 psia at 100°F. Flammable Liquids are known as Class I liquids and are subdivided as follows: <ul style="list-style-type: none"><li>• Class IA liquids have a flashpoint below 73°F and a boiling point below 100°F</li><li>• Class IB liquids have a flashpoint below 73°F and a boiling point at or above 100°F</li><li>• Class IC liquids having a flashpoint at or above 73°F and below 100°F</li></ul>
Flashpoint	The lowest temperature at which a liquid will give off vapors in a sufficient concentration to form an ignitable mixture with air near the surface of the liquid
Grounded	Electrically connected to the facility or some conducting body that serves in place of the earth/ground
Portable Tank	A closed container with a liquid capacity of more than 60 U.S. gallons and not intended for permanent installations
Safety Can	A container of not more than five gallons capacity, having a spring loaded lid and spout cover, and so designed that it will safely relieve internal pressure when subjected to fire exposure

## C Overview

Flammable and combustible liquids shall be stored and handled in a manner that minimizes the potential for fire hazards and complies with applicable federal, state, and local regulations.

## D Key Responsibilities

Position	Responsibilities
All Users	Before storing and handling Flammable and Combustible liquids: <ul style="list-style-type: none"><li>• Review the liquid's Material Safety Data Sheet (MSDS) to identify the liquid's flammability characteristics as well as other hazards</li></ul>

**NOTE:** MSDSs shall be readily available and/or accessible.

## E Procedures

### E.1 Storage Requirements

Flammable or combustible liquids shall be stored in tanks or closed containers that conform to OSHA and/or DOT requirements. Containers shall have a label(s) which identifies their contents, along with the appropriate hazard warning(s). The total quantity of liquids that may be

stored outside of a chemical storage room located in a building, or in a chemical storage cabinet located in a building, shall not exceed any one of the following:

- 25 gallons of Class IA liquids
- 120 gallons of Class IB, IC, II, or III liquids
- 660 gallons of Class IB, IC, II, or III liquid in a single portable tank

Except as stated above, all storage shall be within storage cabinets or inside chemical storage rooms.

Where large quantities of Flammable or combustible liquids are necessary, they shall be stored in approved tanks that comply with OSHA Standard 29 CFR 1910.106.

Chemical storage rooms shall meet rigorous construction and fire rated design specifications. Refer to NFPA 30 or OSHA Standard 29 CFR 1910 for requirements.

Chemical storage cabinets shall meet the following criteria:

- Not more than 60 gallons of Class I or II liquids or more than 120 gallons of Class III liquids may be stored in a chemical storage cabinet
- The chemical storage cabinets shall be labeled in conspicuous lettering with "Flammable - Keep Fire Away"
- The chemical storage cabinets shall be vented to a safe outdoor area

## **E.2 Handling Requirements**

Flammable and combustible liquids shall be stored in closed containers that conform to OSHA and/or DOT requirements when not in use.

Flammable or combustible liquids shall only be used where there are no open flames or other sources of ignition within the possible path of vapor travel.

Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks (located within a building) through a closed piping system, from safety cans, by means of a top drawing device/pump, or from a container or portable tank by gravity through a self-closing valve. Transferring Flammable or combustible liquids by means of gas or air pressure in the container or portable tank is prohibited.

Flammable Liquids shall not be dispensed into containers unless the nozzle and container are electrically interconnected. This requirement shall be considered satisfied when the metallic floorplate on which the container stands while filling is electrically connected to the fill stem or where the fill stem is bonded to the container during filling operations by means of a bond wire.

**WARNING:** Plastic containers and hoses shall not be used to collect, store, or transfer Flammable Liquids (e.g., catching a sample).

Only metal containers that are grounded by metal-to-metal contact or ground straps shall be used while drawing hydrocarbon samples from pressurized vessels or lines.

Containers shall be placed on the deck or ground before filling it with a flammable liquid, such as condensate.

## **F Key Documents**

NFPA 30 - Flammable and Combustible Liquids Code

OSHA Standard 29 CFR 1910.106 - Flammable and Combustible Liquids

Revision Date	Authority	Custodian	Revision Details
05/01/09	GoM HSSE Director	GoM HSSE Programs Manager	Section F, Key Documents, delete last line, "OSHA Standard 33 CFR 126.106 – Paint Storage Lockers"
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Formatting and minor edits
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Changed CD # from 10011 to UPS-US-SW- GOM-HSE-DOC-00104-2. Changed 3 authorities and 1 custodian.
01/23/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - General Safety Rules

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00106-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/24/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter describes general requirements for workplace safety and health.

### B Definitions

Definitions Table

Term	Definition
Flammable Gas	A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of 13 percent by volume or less; or a gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than 12 percent by volume, regardless of the lower limit
Flammable Liquids	Liquids that have a flashpoint below 100°F and have a vapor pressure not exceeding 40 psia at 100°F. Flammable Liquids are known as Class I liquids and are subdivided as follows: <ul style="list-style-type: none"> <li>• Class IA liquids have a flashpoint below 73°F and a boiling point below 100°F</li> <li>• Class IB liquids have a flashpoint below 73°F and a boiling point at or above 100°F</li> <li>• Class IC liquids having a flashpoint at or above 73°F and below 100°F</li> </ul>
Health Hazard	A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, and agents which damage the lungs, skin, eyes, or mucous membranes

Term	Definition
Occupied Building	<p>The following is considered an occupied building:</p> <ul style="list-style-type: none"> <li>• Workstation or command and control center in case of emergency</li> <li>• Designated as safe haven in case of emergency</li> <li>• Primary work space</li> <li>• Building is used for any of the following: <ul style="list-style-type: none"> <li>- Control of process</li> <li>- Office space</li> <li>- Meetings</li> <li>- Quarters</li> <li>- Dining</li> <li>- Meal preparation</li> <li>- Other household uses</li> <li>- Recreation or exercise</li> </ul> </li> <li>• The definition of occupied is based on the actual use of the building (not the intended use). If a building originally intended as a tool shed is being used as an office, it is considered occupied. Likewise, if a building has a desk or office-related equipment, it is considered occupied</li> </ul>
Physical Hazard	A chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or water-reactive

## C Overview

Minimum general workplace requirements are as follows:

1. All visitors, including BP employees and contractors, shall report to a BP representative immediately upon arrival at a site. No work may be started in any area or on any equipment without the knowledge and consent of the BP representative, in accordance with Permit to Work/Control of Work authorization.
2. Personnel shall not enter production facility areas, drilling facilities or any hull, columns or pontoons without prior authorization unless they are part of a normally assigned work team for that area or are performing a task with an approved Work Control Certificate (WCC). Each facility will have area specific authorization procedures.
3. All personnel shall read and understand the Station Bills located in the facility quarters to familiarize themselves with their role in the facility emergency response plan:
  - All personnel shall check their work area and identify the location of firefighting equipment, emergency eyewashes, safety showers, and the escape routes to survival equipment. No one shall operate equipment unless trained and competent on that equipment.
4. Fire extinguishers, alarm boxes, fire doors, air packs, eyewash stations, first-aid kits, life rings, life jackets, other life-saving devices and all other emergency equipment shall be in functional condition and kept clear of any obstructions that restrict access.

5. Smoking is allowed only in designated areas on BP facilities. Zippo-type lighters are approved for transport to facility if they do not contain lighter fluid.
6. Flame Resistant Clothing (FRC) is required for all BP employees, contractors, and visitors when:
  - Located on a production facility with hydrocarbon-containing equipment when in PPE-required areas
  - An employee and/or supervisor identifies a site-specific job and/or area with potential exposure to flash/arc burn injuries (i.e., electrical circuit)
7. All injuries or incidents, regardless of severity, shall be immediately reported to the on-site BP supervisor or his designee.
8. The use and/or possession of illegal drugs, drug-related paraphernalia, intoxicating beverages, firearms, pornographic material, or weapons are strictly prohibited.
9. Horseplay (e.g., rough or boisterous play) and fighting are prohibited
10. "Contact type" contest of strength recreational activities are prohibited (e.g., arm wrestling, thumb wrestling, wrist bending, etc.)
11. All personnel shall report the use or possession of prescription/non-prescription (over-the-counter) medication to the medic or other designated person when:
  - In possession of medications (prescription and non-prescription) that they have reason to believe may impair their ability to function or be fully alert
  - Previous adverse drug reaction was experienced
  - In possession of any prescription medication at an offshore facility
12. When ascending or descending stairways, use the handrail (at least one hand) and take only one step at a time.
13. Running in work areas, except for emergency purposes, is prohibited.
14. Do not wear rings or exposed jewelry or accessories outside the living quarters (watches are acceptable).
15. Compressed air/gas shall not be applied to yourself or others.
16. No person shall walk into natural gas liquids, flammable liquids, or a flammable gas cloud for the purpose of minimizing or stopping a spill or to protect the company's assets.
17. The use of individual knives and multi-purpose tools (such as a 'Leatherman®') are prohibited and will not be allowed offshore or at shore-based facilities. Alternative cutting devices will be provided for tasks (e.g., tin snips, polyvinyl chloride [PVC] cutters, wire cutters, etc.).
18. When it is necessary to take a valve out of its normal operating position or left unattended by personnel for operational purposes, the valve shall be tagged to indicate its altered state. A BP standardized tag shall be used stating "ATTENTION ALTERED VALVE" and shall include the name of the person making the change and the date of the valve position change. This information, including P&ID position and location, shall be recorded in a Valve Altered Register and maintained at the facility.
19. Under normal operations, operating machinery and electrical switchgear shall have required safety guards, switches, and alarms in place, and these shall be functioning appropriately.
20. Electronic devices such as cell phones, cameras, pagers, PDAs, and laptop computers may only be used in classified areas with a valid Hot Work WCC. Intrinsically safe and explosion-proof devices do not require a WCC.
21. Temporary pressurized hoses shall be secured with whip checks and safety pins.



22. Temporary energized piping (i.e. checking, PSV relief piping) that has the potential to break, disconnect or rupture shall be secured in a means to prevent whipping or movement during a failure.
23. All hoses used to transfer any medium must be inspected and fit for purpose prior to use and documented on the JSEA.
24. Personnel shall not lean against or support their body weight on any guardrail/handrail. Guardrails shall not be utilized for stability support or load bearing applications. Only signs and safety equipment may be mounted on guardrails.
25. Offshore personnel shall not work in excess of 16 hours during a 24-hour period. Offshore personnel shall not work more than 21 consecutive scheduled\* days offshore. Personnel engaged in drilling and workover activities should consult the DWOP manual for drilling-related maximum work day requirements.


\*Scheduled days refer to the planned days to be worked offshore. At times, weather causes personnel to be offshore longer than planned.

26. The maximum permissible weight that an individual may manually lift is:
  - 50 pounds chest-level and below
  - 25 pounds above chest-level

**NOTE:** Manually lifting heavier loads can be accomplished by dividing the weight among more than one person so that no individual is lifting more than the weight limits listed. Mechanical lifting devices shall be used if manual lifting limits will be exceeded.

27. Each facility shall have an occupied and non-occupied building list. An MOC is required for a non-occupied building to become occupied.
28. Fishing is not allowed on offshore production facilities.
29. All JSEAs shall be reviewed at the work site unless barriers, such as high noise levels, hamper the discussion. A risk assessment and/or JSEA shall be completed on site prior to conducting work activities at a field location.

## Valve Altered Register

		Valve Altered Register										Date		
Equipment:										Lead Tech:		Sheet #		
										Originator:		Or		
Altered Description	Altered Point & Position	L	B	D	T	Item #	E	P	Tag #	Line/Circuit Diagram or P&ID #	Implementation		Return To Normal Operating Position	
1						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
2						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
3						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
4						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
5						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
6						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
7						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
8						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
9						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
10						N/A					Date:		Date:	
											Time:		Time:	
											Sign:		Sign:	
COMMENTS:														

Revision Date	Authority	Custodian	Revision Details
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	<p>22 General Safety Rules were removed from this section and are referenced within one of the following Chapters: Helicopter Safety, Short Service Employee Program, Stop Work Authority Program (CoW), Personal Protective Equipment, Incident Notification, Reporting and Investigation, Scaffolding, Working at Heights, Energy Isolation, Bypassing Safety Systems and Devices, Barriers and Barricades, and Flammable/Combustible Liquids Storage and Handling</p> <p>8 new rules in regards to horseplay, "Contact type" contests of strength, taking a valve out of its normal operating position, temporary energized piping and hoses, occupied buildings and JSEAs</p> <p>Modified to include the prohibited use of multi-purpose tools</p>
06/09/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	<p>Addition of stop work authority. FRC required. Steel-toed shoes must have a distinctive heel. Fall protection required when working within 6 ft of a handrail. When working over water, fall protection with PFD is recommended. Number of days that are allowed to be worked offshore has been limited to 21 days. Work hours were extended to 16 hours. Maximum weights allowed for manual lifting has been added to this section. Changed 3 authorities and 1 custodian. Changed CD # from 10007 to UPS-US-SW-GOM-HSE-DOC-00106-2 to conform to new numbering nomenclature inside of the new GoM HSSE doc base.</p>
07/23/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	<p>Revised jewelry item on page two and added contact lens use language to align with GoM Safe Practices Pocket Manual.</p>
01/24/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	<p>Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.</p>



## GoM Safe Practices Manual (SPM) - Ground Disturbance

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00083-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/06/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter outlines safe working practices for excavations and trenches.

**NOTE:** For diving related Ground Disturbance, refer to the Diving Operation Procedures.

### B Definitions

Definitions Table

Term	Definition
Benching	Shaping the sides of an excavation to form one or more horizontal levels or steps, usually with vertical or near-vertical surfaces between levels
Competent Person	A person capable of identifying existing and predictable hazards, soil types in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to personnel and who has authorization to take prompt corrective measures to eliminate them
Excavation	Any man-made cut, cavity, trench, or depression in an earth surface that is formed by earth removal
Shoring	A structure that supports the sides of an excavation and one that is designed to prevent cave-ins Examples of such shoring systems are metal, hydraulic, mechanical, or 'timber-shoring'
Sloping	Tapering the sides of an excavation. The angle of incline is a variable of factors including soil type, environmental conditions of exposure, and surface load
Soil Classification System	Classification used by the National Bureau of Standards
Stable Rock	Natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed
Thumb Penetration Test	A test used to estimate the unconfined compressive strength of cohesive soils. This test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard

Term	Definition
	designation D2488 - "Standard Recommended Practice for Description of Soils (Visual - Manual Procedure)."
Trenching	Refers to an excavation where the depth is larger than its width that does not exceed a 15 foot width at the bottom
Type A Soil	A cohesive soil with an unconfined compressive strength of 1.5 tons/ft <sup>2</sup> (tsf) or greater; examples are clay, silty clay, sandy clay, clay loam, silty clay loam, sandy clay loam, caliche, and hardpan (if a soil is fissured, subject to vibration, or previously disturbed, it is not considered Type A)
Type B Soil	A less-cohesive soil with an unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf; examples are angular gravel or crushed rock, silt, silt loam, sandy loam, dry rock that is not stable, partly sloped material, and previously disturbed Type A soil that is not considered Type C soil
Type C Soil	The least-cohesive classification of soil, with an unconfined compressive strength of 0.5 tsf or less; examples are gravel, sand, loamy sand, submerged soils or freely seeping soils, submerged rock that is not as stable, or a layered system

## C Key Responsibilities

Position	Responsibilities
Location Manager (Issuing Authority [IA], Person in Charge [PIC], On-Site Manager)	Confirms proper permit(s) are completed and implemented by a competent person

## D Procedures

### D.1 Excavation

#### D.1.a Excavation Steps

Personnel engaged in excavation activities shall adhere to the steps below:

- Before beginning an excavation, identify and mark utility installations, such as sewer, telephone, fuel, power lines, water lines, pipelines, or any other underground installations. If applicable, contact utility companies and advise of proposed work prior to the start of actual excavation and call state/local agencies such as "One Call" or "DIG", as required. After all underground installations have been marked, the BP representative shall determine if these installations are within 10 feet of the proposed excavation area, which could create a hazard if contacted by the probing or excavation tools being used.

**NOTE:** Municipalities or other regulatory agencies may require permits.

- Prepare a JSEA and Ground Disturbance Permit and conduct a pre-job safety meeting. When underground installations are identified, the area shall be excavated using procedures approved by a BP supervisor.
- Confirm that all identified hazards are outlined on the Ground Disturbance permit and JSEA forms
- Unprotected electric lines and nonmetallic pipelines shall always be isolated, de-energized, and locked out/tagged out prior to beginning any excavation activity
- The BP representative shall confirm that markings remain in place during digging and excavation operations. Pipeline crossings shall be marked with orange plastic barrier(s) or equivalent. The barriers shall remain in place until that area is ready for excavation.
- When BP is performing the excavation and trenching, a BP representative shall be on site if excavation is within 10 feet of any buried utility or other underground installation
- The BP representative shall confirm that all appropriate personnel are on site prior to any excavation (examples of appropriate personnel are qualified backhoe operator, spotter, and roustabouts)
- A spotter is required while excavating and trenching where the potential for hitting a line exists. More than one spotter may be required while working around overhead power lines.
- Use a moboard/digging bar (a flat piece of metal attached to the teeth of the bucket to prevent the puncture of a pipe) on backhoe/trackerhoe when digging in known proximity of lines
- Backhoe operator shall dig parallel to the line. Appropriate training for the equipment operator shall be verified
- Decide whether to guard the walls by shoring, sloping, benching, or some other equivalent means. Perform sloping or shoring in accordance with Occupational Safety and Health Administration (OSHA) regulations. A registered professional engineer shall design sloping or benching for excavations greater than 20-feet deep

Table 1: Maximum Allowable Slopes (H:V) for Excavations

Soil or Rock Type	Less than 20 Feet Deep
Stable Rock	Vertical (90°)
Type A Soil	¾ : 1 (53°)
Type B Soil	1 : 1 (45°)
Type C Soil	1½ : 1 (34°)
Mixed Soil Types	1½ : 1 (34°)

**NOTE:** Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from horizontal, H = horizontal and V = vertical.

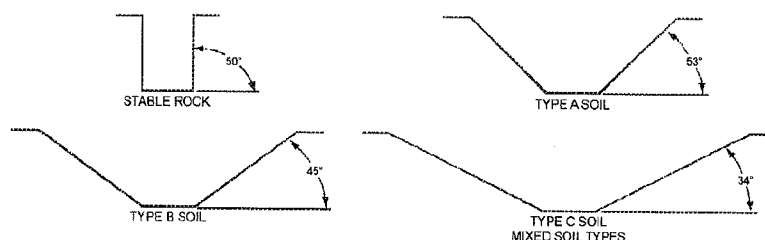


Figure 1: Required Slopes for Different Soil Types

**D.1.b Excavation Safety Practices**

- For persons working in excavations and trenches more than four feet deep, a Confined Space Entry Permit is required, as outlined in the Confined Space Entry Program of the CoW chapter
- A hazard assessment shall be performed to identify proper personal protective equipment, such as gloves, shoes, or harnesses
- A hazard assessment shall be performed to evaluate and control water hazards
- A hazard assessment shall be performed to evaluate and control atmospheric hazards (presence of combustible, toxic gases, or low oxygen, etc.)
- Ladders, steps, or ramps located so that no more than 25 feet of lateral travel is required to reach
- Excavated soil, material, or equipment that could fall or roll into an excavation shall be stored and retained at least two feet from the edge of the excavation
- If excavations endanger the stability of adjacent structures (building, walls, or other structures), support systems shall be utilized
- A Competent Person shall make daily inspections of excavations prior to the start of the work shift. This person has the authority and responsibility to modify shoring or work methods as necessary to provide greater safety. If evidence of possible cave-ins or slides (such as accumulating water or seepage) is apparent, all work in the excavation shall cease until necessary precautions have been taken to safeguard personnel.
- Use barriers and barricades as necessary to protect individuals and mobile operating equipment near the excavation
- Personnel shall not be in the excavation or trench when power equipment is being used to perform the excavation

Control Tier 2 – GoM HSSE CD# UPS-US-SW-GOM-HSE-DOC-00083-2 Revision Date: 06/01/08  
Uncontrolled Document. Valid Only at the Time of Printing. Print Date: 5/12/2008



Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Added ground disturbance checklist
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Changed CD # from 10093 to UPS-US-SW-GOM-HSE-DOC-00083-2 to conform to the new numbering nomenclature inside of the new GoM HSSE Doc base. Changed 3 authorities and 1 custodian.
02/06/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Hazard Communication

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00197-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/23/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	12/19/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	12/19/11		

### A Purpose/Scope

This chapter outlines the requirements of the GoM Hazard Communication (HAZCOM) Program. The program has been developed to inform and train personnel concerning the use and dangers associated with hazardous chemicals. Information is provided on control of chemical hazards, proper labeling of containers, use of Material Safety Data Sheets (MSDSs) and related training.

Personnel need to know the following:

- The hazardous properties of chemicals at the facility
- The location of hazardous chemicals stored at their facility
- How to determine necessary precautions for protection from hazardous chemicals
- Actions and information required when bringing a new chemical into their facility

This program does not apply to the use of chemicals in the same manner and quantity as by a normal consumer (e.g., household type/quantity products) and Food and Drug Administration regulated products.

### B Definitions

Definitions Table

Term	Definition
Stationary Facility Container	Any bulk tank containing a chemical that is listed in the MSDS Right to Know Center that is hard-piped on the facility Example: Chemical Tote Station Tank

### C General Requirements

The GoM Hazard Communication Program includes identification of chemical hazards, job hazard evaluation, maintaining Material Safety Data Sheets (MSDSs), employee training, container labeling and other forms of warnings.

## D Key Responsibilities

Position	Responsibilities
Offshore Installation Manager (OIM)	Compliance with the BP GoM Hazard Communication Program
Personnel	Compliance with the site-specific hazard communication program
Senior Industrial Hygienist	Subject Matter Expert (SME) and custodian of the GoM Hazcom Program

## E Procedures

Refer to the GoM Hazard Communication Program on the GoM HSSE Website.

### E.1 Site-Specific Hazard Communication Program

The Site-Specific Hazard Communication Program shall be developed for each facility. The Program shall be reviewed and documented annually. The template can be found online within the GoM Hazard Communication Program.

Contractors shall provide MSDSs for all chemicals brought to a BP facility and will inform personnel of hazards associated with the chemicals used.

### E.2 Right to Know Station

The contents of the Right to Know Station shall include:

- The Site-Specific Hazard Communication Program
- The facility's chemical inventory
- Material Safety Data Sheets (MSDSs)
  - Shall be accessible to all personnel
  - Shall be maintained for each active chemical identified on the chemical inventory list (used at the facility)
  - Once a chemical is removed from the facility, the MSDS shall be archived.

#### E.2.a Chemical Inventory

A chemical inventory shall be completed for each facility to list the hazardous chemicals known to be present in the work place. An annual review to confirm the accuracy of the 3E MSDS service shall be conducted and documented.

A copy of the signed and dated chemical inventory shall be submitted annually to the GoM Senior Industrial Hygienist (IH) by January 31 of each year.

Only after the chemical inventory list is submitted to GoM Industrial Hygiene for archiving (on an annual basis) can the archived chemicals be removed from the inventory.

A chemical inventory can be printed off of 3E MSDS service.

## **E.2.b New Chemicals**

Before a new chemical is purchased for use at a facility, the health, safety and environmental risks associated with the chemical must be assessed and approved. This approval process is consistent with and a part of the BP GoM Management of Change (MOC) policy.

## **E.3 Labeling of Containers**

### **E.3.a Containers Received**

All chemical containers received from vendors shall be labeled and accompanied by an MSDS. The labels shall be legible, in English, and prominently displayed on the container. Labels shall include:

- The identity of the chemical or common name as it appears on the MSDS
- Hazard warnings conveying the physical and/or health hazards, including target organ effects associated with that chemical
- BP contact information as well as the name and address of the chemical manufacturer or importer in case of spill or accident

### **E.3.b Stationary Facility Containers**

Stationary Facility Containers shall be labeled using signs, placards, process sheets, batch tickets, operating procedures, etc., as long as the method identifies the applicable containers and conveys the identity of the chemical and appropriate hazard warnings. Labels can be printed off of 3E MSDS service by accessing the MSDS and then printing off the label on Avery stickers.

## **E.4 Worker Information Training**

HSSE training is addressed in the GoM HSSE Training Matrix and Course Descriptions. When a new hazardous material is added to the work area and/or when an MOC is required for chemical danger, the information about hazardous material or chemical shall be reviewed (e.g., in a safety meeting) with affected personnel.

## **E.5 Record Keeping**

Chemical inventories shall be forwarded to the GoM Senior Industrial Hygienist (IH) annually to be maintained indefinitely.

## **F Key Documents**

GoM Contractor Hazard Communication Program Notification

GoM Hazard Communication - New Chemical Approval Process Flowchart

GoM New Chemical/Product Approval Request Form

GoM Hazard Communication Program

GoM Personal Protective Equipment (PPE)

GoM Site-Specific Hazard Communication Program Form

Occupational Safety and Health Administration, Department of Labor: 29 CFR, 1910.1200, and 1910.1201

Revision Date	Authority	Custodian	Revision Details
12/19/08	GoM HSSE Director	GoM HSSE Programs Manager	Added on-line 3E MSDS service to HAZCOM program. Edited the chemical inventory process to include a revised form. Changed contact information to Senior Industrial Hygienist.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Requirements for a Right to Know Station added Added requirement to complete a technical MoC for each new chemical added
01/31/06	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Jack Kogut	No content changes. Changed CD # from 10037 to UPS-US-SW-GOM-HSE-DOC-00107-2 to conform to numbering nomenclature in the GoM HSSE doc base. Changed 2 authorities as well. Modified revision dates on the following forms and flowchart to match revision date of main procedure: <ul style="list-style-type: none"> <li>GoM New Chemical/Product Approval Request Form</li> <li>GoM Contractor Hazard Communication Program Notification (Example)</li> <li>GoM Site-specific Hazard Communication Form</li> <li>GoM Chemical Inventory Form</li> <li>GoM Hazard Communication – New Chemical Approval Process Flowchart</li> </ul>
06/01/03	S. Garner/ B. Herbert/ R. DeLeonardis/ S. Flynn	Jack Kogut	Key changes to this document include: approval of the use of new chemicals in the field to be coordinated and approved through HSE, Industrial Hygiene Coordinator to review current products by each field location as a group, tightened responsibility process for Hazcom and documentation of responsibility for key areas such as training, chemical approval, program implementation, and contractor safety, training information reflects the current GoM Health and Safety Training Matrix, CD # 10087, change in custodian, additional links to internal and external MSDS sites to assist field in getting MSDSs and a flowchart of the new chemical approval process and four new Hazcom forms.
07/01/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Amended Section 5.5 to align training requirements with the GoM HSE Training Matrix.
01/23/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Hearing Conservation

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00206-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/24/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

The purpose of this chapter is to protect workers from occupational noise exposure.

### B Definitions

Definitions Table

Term	Definition
Decibel (dB)	The unit used to measure the intensity of sound pressure
Dosimetry	Measurement of personnel/worker exposure to noise and calculation of worker's noise dose over time
Standard Threshold Shift (STS)	A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear

### C General Requirements

The GoM Hearing Conservation Program (HCP) applies to personnel who are exposed to noise levels at or above 82 dBA Time Weighted Average (TWA) for a 12-hour shift (85 TWA for 8-hour shift).

The GoM HCP requires the following elements:

- Sound level surveys when significant process or equipment changes occur
  - Periodic assessments to identify workers to be included in the HCP
- Hearing protection to reduce worker exposure levels to below 82 dBA for a 12-hour TWA (85 TWA for 8-hour shift).
- Annual audiometric testing, evaluation, and training
  - Survey results, audiograms and other appropriate records are maintained and available to employees

## D Key Responsibilities

Position	Responsibilities
Industrial Hygienist	Subject Matter Expert (SME) and Custodian of the GoM Hearing Conservation Program
OIM	Compliance with the GoM Hearing Conservation Program
Personnel	<ul style="list-style-type: none"><li>Compliance with the GoM Hearing Conservation Program</li><li>Wearing hearing protection as required and participation in annual audiometric testing</li></ul>
Supervisors	Compliance with the GoM Hearing Conservation Program

## E Procedures

Refer to the Hearing Conservation Program on the GoM HSSE website.

### E.1 Hearing Protection Devices

All personnel shall wear hearing protection in areas where Hearing Protection required signage is posted and/or when specific tasks are identified as needing hearing protection.

Hearing Protection Devices available for employee use shall be evaluated for the appropriate attenuation of noise levels (i.e., appropriate Noise Reduction Rating [NRR]).

Personnel can select their hearing protectors from a variety of hearing protectors provided by each facility. Personnel wearing glasses with large temple bars or similar protrusions that may interfere with proper sealing shall not use ear muffs.

Double hearing protection is required in areas where the sound level is greater than 105 dBA and double hearing protection required signage shall be posted.

**NOTE:** Hearing Protection shall be worn when in or around operating helicopters.

## F Key Documents

GoM Hearing Conservation Program (HCP)

OSHA (29 CFR 1910.95) - Occupational Noise Exposure

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Short overview of the GoM Hearing Conservation Program
01/31/06	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Jack Kogut	Clarification that program applied to BP personnel. Changed CD # from 10039 to UPS-US-SW-GOM-HSE-DOC-00110-2 to conform to new numbering nomenclature in the new GoM HSSE doc base. Changed 3 authorities and 1 custodian. Removed references to the Industrial Hygiene Manual in Section 3 and 5.
01/24/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.





## GoM Safe Practices Manual (SPM) - Heat Stress

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00221-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	06/01/08	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

The intent of this chapter is to provide guidance to reduce the possibility of heat stress and protect personnel from heat related illnesses. Overexposure to heat can result in a variety of symptoms, ranging from muscle cramps and fatigue to coma and, in extreme cases, death.

### B Definitions

Definitions Table

Term	Definition
Acclimatization	Adaptation of the body to the current environment
Heat Related Illnesses	Undesirable health effects as a result of exposure to heat

### C General Requirements

Heat related illnesses may occur when the body is unable to sufficiently cool itself by sweating. Supervisory personnel shall confirm JSEAs clearly identify when environmental conditions pose an increased risk of heat related illness to workers.

Supervisory personnel shall plan work and utilize engineering or administrative controls to minimize the risk of heat related illness.

Supervisory personnel shall encourage workers to take frequent breaks and hydrate when environmental conditions warrant.

### D Overview

#### D.1 Factors Affecting Heat Stress

- High air temperature and humidity
- Age
- Degree of physical fitness
- Use of alcohol or drugs/medications
- Prior heat illness

- Physical exertion
- Exposure to direct sun or heat
- Weight
- Degree of acclimatization
- Medical conditions such as hypertension
- Limited air movement

## D.2 Symptoms of Heat Related Illnesses

There are varying degrees of heat related illnesses. The ability to recognize symptoms and early intervention are important to reduce the severity of illness. Heat related illnesses include:

Heat Related Illness	Symptom
Heat Stroke	A heat related illness caused by the body's inability to regulate its temperature, causing the body temperature to rise to critical levels. Symptoms include confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature
Heat Exhaustion	A heat related illness evidenced by symptoms such as headache, nausea, vertigo, weakness, thirst, and giddiness
Heat Cramps	Muscle cramps attributed to an electrolyte imbalance caused by insufficient fluids
Heat Collapse ("fainting")	Fainting due to the brain not receiving sufficient oxygen because of blood pooling in the extremities. This is a safety hazard as well as a health hazard
Heat Rash	A rash caused by skin that is persistently wet due to un-evaporated sweat (also known as "prickly heat"). Heat rash may become infected if not treated. Heat rash is the most common problem in hot work environments

## D.3 Responding to Symptoms of Heat Stress

Summon the Medic if a worker appears "flushed" and is sweating profusely. If possible, direct the person to take a break in an air-conditioned or shaded area and give fluids.

## E Key Responsibilities

Position	Responsibilities
Industrial Hygienist	<ul style="list-style-type: none"> <li>• Subject Matter Expert</li> <li>• Custodian of the GoM Heat Stress program/practices</li> </ul>
OIM	<ul style="list-style-type: none"> <li>• Recognize environmental conditions and work that pose increased risk to heat related illness</li> </ul>

Position	Responsibilities
Personnel	<ul style="list-style-type: none"> <li>Knowing the signs and symptoms of heat stress</li> <li>Staying hydrated and reporting symptoms of heat stress to their supervisor</li> </ul>
Supervisor	<ul style="list-style-type: none"> <li>Recognize environmental conditions and work that poses increased risk to heat related illness</li> <li>Make certain workers can identify signs and symptoms of heat stress or other heat-related illness</li> </ul>

## F Procedures

### F.1 Engineering Controls

Engineering controls, such as those listed below, should be used whenever feasible:

- General ventilation (moving air in the work area)
- Air cooling/Air conditioning
- Insulating hot surfaces that generate heat or using heat shields

### F.2 Administrative Controls

#### F.2.a Fluid Replacement

Being hydrated is an effective strategy for controlling heat related illnesses.

**NOTE:** Do not rely on feeling 'thirsty'. Thirst is not an indicator of being hydrated. Drink fluids every 15 to 20 minutes in hot environments.

A good guideline to follow for fluid replacement is as follows:

- Drink 1-2 quarts (2 to 3 20-ounce bottles) of water prior to exposure and approximately one quart (1 to 2 20-ounce bottles) per hour thereafter
- Consider drinking a 3:1 or 4:1 ratio of water to Gatorade (or other sports drinks)

#### F.2.b Work Practices

The following work practices should be considered to reduce the likelihood of heat stress:

- Reduce the physical demands of work
- Provide recovery areas with air-conditioning or fans
- Plan heavy work in the early morning, cool part of the day, or on the night shift. Schedule heavy work for cooler months, if feasible
- Wear lightweight, light colored, loose-fitting clothes. Wear shorts and t-shirts under FRCs
- Avoid caffeinated drinks and heavy meals

#### F.2.c Personal Protective Equipment (PPE)

PPE may be used in hot work environments when engineering and administrative controls are not feasible or are inadequate. Refer to the Facility PPE Matrix. PPE to prevent/reduce heat stress includes:

- Reflective clothing to stop the skin from absorbing radiant heat (the transfer of heat from a heated surface)

- Ice vests

Simply wetting or dampening clothing can also effectively cool personnel.

### **F.3 JSEA/Heat Stress Awareness**

Personnel should be aware of the signs and symptoms of heat related illness and the preventative measures needed, and be prepared to provide assistance to fellow personnel (such as stopping work and moving the individual to a cool location).

JSEA should cover the following topics:

- Heat stress hazards
- Prevention strategies
- Potential health effects of heat related illnesses
- Response or first-aid procedures
- Signs and symptoms of heat related illnesses
- Use of PPE

### **F.4 Record Keeping**

All heat related illnesses/incidents shall be recorded by the Medic. Work related heat incidents shall be recorded in Tr@ction.

## **G Key Documents**

OSHA Technical Manual TED 01-00-015 [TED 1-0.15A]

GoM Heat Stress Index

Revision Date	Authority	Custodian	Revision Details
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Describes factors affecting heat stress, symptoms of heat stress and the engineering and administrative controls for managing heat stress



## GoM Safe Practices Manual (SPM) - Helicopter Safety

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00111-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/25/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

The purpose of this chapter is to outline helicopter passenger safety procedures.

### B Definitions

Definitions Table

Term	Definition
HUET Training	Helicopter Underwater Egress Training - Lifesaving underwater egress instruction for helicopter crews and passengers

### C Overview

The GoM Contract Aircraft Guidelines shall be adhered to for helicopter operations and should be referred to for additional details.

Helicopter safety procedures outlined herein shall be followed by all personnel who fly or ride in helicopters and by all personnel who work near helicopter equipment.

All passengers shall wear long pants, sleeved shirts, and closed-toed and closed-heeled shoes when traveling offshore. The shoe will remain on the foot by either a fully enclosed heel, a strap made of leather, durable rubber or other quality material that wraps around the heel area.

Caps/hats shall not be worn while boarding, departing, or traveling on a helicopter.

All personnel shall remain in the passenger staging area until the helicopter has safely landed.

All personnel shall use caution when boarding or departing the helicopter and shall take care to avoid the helicopter tail rotor.

Personnel shall not leave items on the heliport deck when loading or unloading the helicopter. Baggage shall be stored in such a manner that leaves egress routes clear.

## D Key Responsibilities

Position	Responsibilities
Supervisors	Responsible for confirming communication of Helicopter Safety procedures to all company and contract personnel who are affected by helicopter operations

## E Procedures

### E.1 Heliports, Boarding, Internal Cargo Handling, Disembarking

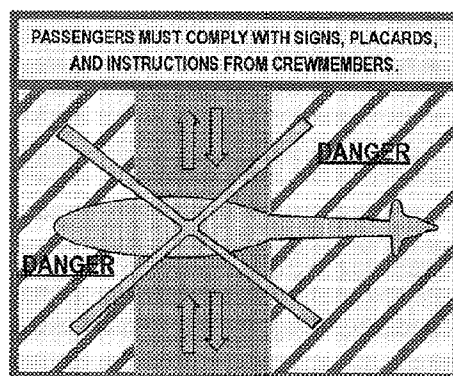


Figure 1: Helicopter Boarding Zone

The following procedures shall be followed for Helicopter Safety:

- Helicopter landing areas shall be kept clear of paper, boxes and other debris
- Always approach the helicopter from the side and in full view of the pilot or co-pilot. Never approach the helicopter from the rear or walk behind it due to potentially hazardous conditions created by the tail rotor
- Never pass under the tail boom. Keep clear of rotors
- Any equipment being carried shall not extend into the air or to the rear of the aircraft in a manner that could cause contact with the main or tail rotor blades
- DOT's Hazardous Materials Regulations allow passengers and crew members to carry one Zippo-type lighter or book of matches in the aircraft cabin, but not in checked baggage
- Never run when approaching or leaving a helicopter
- Do not wear hats or caps while approaching or leaving the aircraft
- Maintain a safe, firm grip on hand-carried items and all belongings while boarding or leaving the helicopter
- Hearing protection shall be worn in and around operating helicopters and when approaching or departing operating helicopters
- For flights over water, passengers shall wear an FAA approved inflatable personal flotation device which shall be provided by the helicopter company

- Exit only after the pilot has the aircraft firmly set on the heliport, throttled down, and has given permission to exit. Do not jump from the helicopter
- Disembarking passengers shall exit the heliport immediately
- All hazardous material shall be identified and handled in accordance with DOT regulations
- Freight shall be carried, packed, or moved at the discretion of the pilot. Special cargo runs may be needed. All cargo shall be stowed in FAA-approved baggage compartments or the tail boom. Cargo shall not be carried in the passenger compartment if passengers are on board
- Heavy objects may cause damage to the aircraft. Ask permission from the pilot before placing any cargo in the helicopter
- If the helicopter is damaged while loading or unloading freight, the pilot shall be informed immediately. Failure to notify him may endanger the lives of all passengers and crew
- When meeting the helicopter on an offshore platform, passengers shall remain below the heliport and off the stairway. Do not proceed up the stairs until after the helicopter has throttled down
- On an offshore platform, after all passengers are on board the helicopter and the area is clear for departure, the platform personnel coordinating the helideck operations shall:
  - First check to see that:
    - No materials are on the floats or loose on the heliport
    - All doors are secured
    - All personnel are clear
    - Nothing is hanging out or on the aircraft
    - No aircraft fluids (such as oil) are on the helideck
  - Then communicate "all clear for take off" to the pilot
- Keep heliports clear of unneeded items. Material that can be moved by rotor turbulence is to be kept clear of heliports. Luggage and other items should be stored below the heliport deck until the pilot signals approval
- The heliport deck shall be kept clean. Oil or grease spills shall be cleaned up as soon as possible
- Whenever it is necessary to close the heliport due to extended crane operations, wireline operations, well testing, bleeding gas, etc., a warning "X" should be placed on the heliport to signal the pilot not to land. Refer to GoM Contract Aircraft Guidelines for details
- Visitors are required to sign in so that an accurate count of personnel on board is maintained

## ***E.2 Passenger Training and Briefing Requirements***

Helicopter passengers are required to:

- Have Helicopter Underwater Egress Training (HUET) before traveling offshore. Refer to the Offshore Travel Requirements chapter for more information
- Receive a video passenger briefing covering safety information and aircraft operations prior to boarding any helicopter
- Receive a pilot safety briefing before each flight
- Refer to BP GoM Contract Aircraft Guidelines for details

### **E.3 Flight Safety Requirements**

All passengers shall adhere to the flight safety requirements below:

- Seat belts and shoulder harnesses shall be worn at all times
- Smoking and the use of tobacco products are not permitted in the passenger area
- Do not change seats during flight
- Keep clear of all controls
- Do not open doors or throw any objects from the aircraft at any time
- Advise the pilot of any unusual occurrences you may observe
- Obey all instructions or orders given by the pilot

### **E.4 Emergency Procedures**

All passengers shall adhere to these emergency procedures:

- Obey all instructions given by the pilot. Remember your briefing instructions
- Remain in seat with seat belt fastened during emergency or auto-rotation landing. Remove sharp objects from pockets, and remove eyeglasses. In helicopters with lap belts only, lean over and clasp your arms behind your knees. Remain in this position until aircraft movement stops
- Remain with the aircraft, if possible, in case of an emergency landing. If water ditching occurs, flotation gear should keep the helicopter afloat for a considerable time
- Do not exit the aircraft or deploy the life raft until instructed to do so by the pilot. If pilot is incapacitated, follow HUET training. Never inflate the raft inside the helicopter. If the raft is deployed, make sure the retaining line is secure so the raft does not float away before all can enter
- If necessary or instructed to exit the aircraft and enter the water, wait to inflate the personal flotation device until clear of the passenger compartment
- In the event the helicopter capsizes, follow HUET training

**WARNING:** If the helicopter capsizes in the water:

- After impact it will be necessary to wait for the cabin to fill with water before a successful evacuation can be made.
- Never inflate the raft inside the helicopter.
- Remain seated and buckled in until the pressure equalizes.
- Maintain your hand hold with one hand nearest the closest emergency exit
- Use the other hand to unbuckle your seat belt.
- While maintaining a constant grip, pull yourself hand over hand to the emergency exit
- Apply a constant pressure to the exit to open it.
- Swim clear of the helicopter before surfacing
- Do not kick those behind you.
- Stay together after surfacing.
- Inflate your flotation pillow or life preserver and use your buddy lines to latch onto each other.
- Do not go back underwater to the helicopter.



## F Key Documents

GoM Contract Aircraft Guidelines

Federal Aviation Administration Regulations, Part 129

Federal Aviation Administration Regulations, Part 135

Revision Date	Authority	Custodian	Revision Details
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	New figure showing boarding zones and danger zones around the helicopter Six new requirements in regards DOT's Hazardous Materials Regulations, FAA approved inflatable personal floatation devices, house keeping on heliport, Helicopter Underwater Egress Training (HUET) and emergency procedures.
03/03/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Mike Basic	No content changes. Changed CD # from 10,040 to UPS-US-SW-GOM-HSE-DOC-00111-2 to conform to new numbering nomenclature in the GoM HSSE doc base. Changed 1 custodian and 3 authorities. Changed picture of helicopter in section 5.1.
01/25/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



**GoM Safe Practices Manual (SPM) - Hot Bolting**  
**Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00112-2**

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/25/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	05/01/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

## A Purpose/Scope

The purpose of this chapter is to outline the requirements for conducting safe Hot Bolting operations.

## B Definitions

Definitions Table

Term	Definition
Flat Face Flange	A flange with a flat gasket surface
Hot Bolting	The removal of studs and nuts from a flange and the installation of new studs and nuts while the line is still in service. This allows for the replacement of one stud at a time until all the studs have been replaced on a weld neck flange
Raised Face Flange	A flange with raised gasket surface
Ring Joint Flange	A flange with a groove cut in the face

**NOTE:** Although the word "Bolt" is incorporated in the term "Hot Bolting," on offshore facilities the term "Hot Bolting" refers to the removal and replacement of studs and/or nuts from a flange while in service.

## C Procedures

### C.1 Hot Bolting

Hot Bolting allows for corroding studs and nuts to be removed as part of preventative maintenance while the line is in service. A risk assessment shall be performed prior to Hot Bolting to confirm the flange will not leak or fail during the procedure.

Nuts/studs shall be removed and replaced immediately, one at a time, in a specified cross-bolting sequence/pattern.

**WARNING:**

1. Prior to removing any nut/stud, all existing nuts/studs shall be checked for tightness by torquing the flanged joint to the manufacturer specifications.
2. Hot Bolting and Hot Work are not allowed within 100 feet of each other.

All new studs and nuts shall be torqued according to the manufacturer's specifications.

A BP representative shall be present during all Hot Bolting activities.

Working on live piping and equipment should only be done when the advantages have been assessed against the potential risks. The risk assessment shall include a review of:

- Design specifications of the flanged joint, including bolting and gasket specifications
- Contents of the piping or equipment (e.g., the flammability and/or toxicity of the process fluid)
- Design and operating pressures and temperatures; confirming that the pressure in the piping/equipment is at the specified reduced value and that the process conditions are stable
- The possibility and consequences of a process upset occurring

**NOTE:** The location and condition of the nearest upstream and downstream isolation valves relative to the joint shall be identified prior to commencing the work.

- The position and functionality of pipe supports relative to the flanged joint

**NOTE:** From a mechanical standpoint, there should be no unacceptably high external loads and/or bending moments acting on the joint nor should be no significant vibration of the piping at the joint.

- The position and type of flexible expansion joint affecting the flanged joint
- Maintenance history of the joint
- Personnel access and egress-consideration should be given to the accessibility of the area and to confirming that adequate escape routes are available should the pipe spring or should leakage occur

**WARNING:** Hot Work (cutting or burning) on seized nuts/studs shall not be allowed on flanges in service. Cold cutting is permissible and should be considered.

- Possible degradation of the nuts/studs (e.g., corrosion, stress corrosion cracking, fatigue)
- Possible degradation of the gasket

### C.1.a Potential Risk of Leakage

In Hot Bolting, there is a potential risk of leakage caused by:

- Reduced gasket compression during bolt removal
- Inadequate tightening on bolt replacement
- Gasket failure from over-tightening of bolts on replacement

### C.1.b Allowable Flanges

The practice of Hot Bolting shall only be allowed for those flanges indicated in Table 1 (ANSI class flanges) and Table 2 (API class flanges).

**NOTE:**

1. Some flanges require a decreased pressure rating during Hot Bolting (from 9 percent to 72 percent less than normal pressure rating) or are not allowed at all (ANSI 150 class flanges). Use Table 1 and Table 2 in conjunction with Hot Bolting safety practices to enhance personnel safety and code compliance.
2. Flat-face flanges are not addressed in this manual. If Hot Bolting is necessary, a Management of Change and hazard assessment shall be performed.

Table 1: ANSI Class Flanges

Normal Pipe Size	ANSI Class	Flange Type*	Normal Bolt Count	Normal PSI Max	Hot Bolt PSI Max	Hot Bolt Allowed	Comments
2"	150	RF	4	285	-	No	Insufficient gasket-seating force
2"	300	RF	8	740	740	Yes	
2"	600	RF	8	1480	1480	Yes	
2"	600	RJ	8	1480	1480	Yes	
2"	900	RJ	-	-	-	-	Not available. Use 2 ANSI 1500
2"	1500	RJ	8	3705	2850	Yes	23% pressure reduction
2"	2500	RJ	8	6170	3700	Yes	40% pressure reduction
3"	150	RF	4	285	-	No	Insufficient gasket-seating force
3"	300	RF	8	740	740	Yes	
3"	600	RF	8	1480	1325	Yes	10% pressure reduction
3"	600	RJ	8	1480	1325	Yes	10% pressure reduction
3"	900	RJ	8	2220	1975	Yes	10% pressure reduction
3"	1500	RJ	8	3705	2223	Yes	30% pressure reduction
3"	2500	RJ	8	6170	3680	Yes	40% pressure reduction
4"	150	RF	8	285	-	No	Insufficient gasket-seating force
4"	300	RF	8	740	740	Yes	
4"	600	RF	8	1480	1350	Yes	9% pressure reduction
4"	600	RJ	8	1480	1350	Yes	9% pressure reduction
4"	900	RJ	8	2220	2220	Yes	
4"	1500	RJ	8	3705	3705	Yes	
6"	150	RF	8	285	-	No	Insufficient gasket-seating force
6"	300	RF	12	740	740	Yes	
6"	600	RF	12	1480	1480	Yes	
6"	600	RJ	12	1480	1480	Yes	
6"	900	RJ	12	2220	2220	Yes	
6"	1500	RJ	12	3705	3705	Yes	

Normal Pipe Size	ANSI Class	Flange Type*	Normal Bolt Count	Normal PSI Max	Hot Bolt PSI Max	Hot Bolt Allowed	Comments
8"	150	RF	8	285	-	No	Insufficient gasket-seating force
8"	300	RF	12	740	740	Yes	10% pressure reduction 10% pressure reduction
8"	600	RF	12	1480	1325	Yes	
8"	600	RJ	12	1480	1325	Yes	
8"	900	RJ	12	2220	2220	Yes	
8"	1500	RJ	12	3705	3705	Yes	
10"	150	RF	12	285	-	No	Insufficient gasket-seating force
10"	300	RF	16	740	740	Yes	
10"	600	RF	16	1480	1480	Yes	
10"	600	RJ	16	1480	1480	Yes	
12"	150	RF	12	285	-	No	Insufficient gasket-seating force
12"	300	RF	16	740	740	Yes	
12"	600	RF	20	1480	1480	Yes	
12"	600	RJ	20	1480	1480	Yes	
16"	150	RF	16	285	-	No	Insufficient gasket-seating force
16"	300	RF	20	740	740	Yes	9% pressure reduction
16"	600	RF	20	1480	1350	Yes	
16"	600	RJ	20	1480	1480	Yes	
18"	150	RF	16	285	-	No	Insufficient gasket-seating force
18"	300	RF	24	740	740	Yes	16% pressure reduction
18"	600	RF	20	1480	1250	Yes	
18"	600	RJ	20	1480	1480	Yes	
20"	150	RF	20	285	-	No	Insufficient gasket-seating force
20"	300	RF	24	740	740	Yes	12% pressure reduction
20"	600	RF	24	1480	1300	Yes	
20"	600	RJ	24	1480	1480	Yes	
24"	150	RF	20	285	-	No	Insufficient gasket-seating force
24"	300	RF	24	740	740	Yes	12% pressure reduction
24"	600	RF	24	1480	1300	Yes	
24"	600	RJ	24	1480	1480	Yes	

Table 2: API Class Flanges

Normal Pipe Size	API Class	Flange Type*	Normal Bolt Count	Normal PSI Max	Hot Bolt PSI Max	Hot Bolt Allowed	Comments
1-13/16"	10K	RJ	8	10000	4100	Yes	59% pressure reduction
1-13/16"	10K	RJ	8	15000	5700	Yes	62% pressure reduction
2-1/16"	5K	RJ	8	5000	2900	Yes	42% pressure reduction
2-1/16"	10K	RJ	8	10000	3350	Yes	67% pressure reduction
2-1/16"	15K	RJ	8	15000	4650	Yes	69% pressure reduction
2-9/16"	5K	RJ	8	5000	3150	Yes	37% pressure reduction
2-9/16"	10K	RJ	8	10000	3350	Yes	67% pressure reduction
2-9/16"	15K	RJ	8	15000	4400	Yes	71% pressure reduction
3-1/8"	5K	RJ	8	5000	2850	Yes	43% pressure reduction
3-1/8"	10K	RJ	8	10000	3300	Yes	67% pressure reduction
3-1/8"	15K	RJ	8	15000	4400	Yes	71% pressure reduction
4-1/16"	5K	RJ	8	5000	2750	Yes	45% pressure reduction
4-1/16"	10K	RJ	8	10000	2800	Yes	72% pressure reduction
4-1/16"	15K	RJ	8	15000	4400	Yes	71% pressure reduction
5-1/8"	5K	RJ	8	5000	3075	Yes	39% pressure reduction
5-1/8"	10K	RJ	12	10000	3100	Yes	69% pressure reduction
7-1/16"	5K	RJ	12	5000	3300	Yes	34% pressure reduction
7-1/16"	10K	RJ	12	10000	3400	Yes	66% pressure reduction
7-1/16"	15K	RJ	16	15000	4650	Yes	69% pressure reduction

**NOTE:** Pressure ratings are for API 6B and 6BX flanges made of American Society for Testing Materials (ASTM) A-105 material (for API 6B flanges 5K rating or less) or AIS 4130 (for API 6BX flanges 10K and 15K rating) at -20°F to 200°F, and with A193 Grade B7 bolts. Calculations are in accordance with ANSI B31.3.

\*Above tables refer to weld neck flanges.

## D Key Documents

ANSI B31.3, Petroleum Refinery Piping

API 6B, Flanges

API 6BX, Flanges

## Revision Log

Revision Date	Authority	Custodian	Revision Details
05/01/09	GoM HSSE Director	GoM HSSE Programs Manager	Table 1, the Comment "Not available, use 2 ANSI 1500" on Line with 2" Pipe Size, 600 ANSI Class, RJ should be moved down one line to correspond with 2", 900, RJ line.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Formatting and minor edits for clarification
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Added guidance on risk assessment. Added more sizes and ratings based on engineered calculations. Changed CD # from 10097 to UPS-US-SW-GOM-HSE-DOC-00112-2 to conform to new numbering nomenclature in the new GoM HSSE doc base. Changed 3 authorities and 1 custodian.
01/25/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) – Hot Tapping and In-service Welding

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00116-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/25/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter describes safe practices that shall be used in In-Service Welding and Hot Tapping operations whenever they are allowed. When In-Service Welding and Hot Tapping are not allowed, isolation, depressuring, inerting, or another similar method is required for safe work. In-Service Welding and Hot Tapping is a technique used to attach connections to pipelines, vessels, or tanks, which involves cutting and welding on equipment under pressure.

### B Definitions

Definitions Table

Term	Definition
Hot Tapping	Fabricating a branch connection on a pipeline, tank or process piping that is under pressure and operating; requires special tools, procedures, and safety measures
In-Service Welding	The practice of welding on all piping or equipment that contains or has been contaminated with hydrocarbons (including hydrotesting with diesel), unless purged and blinded or disconnected
Saddle	A fitting or connection that surrounds and reinforces the base of a branch connection and provides an attachment contact
Weld-o-let or Thread-o-let	A fitting or connection that contains a saddle area and a tee that has a screw or socket/butt weld connection

### C Overview

In-Service Welding and Hot Tapping operations are permitted only when:

- Continuity of service is essential
- Shutdown of the system is impractical
- Documented procedures are followed
- Special equipment is used that will provide proven effective protection for employees



A Management of Change (MOC) is required whenever an operation plans to conduct In-Service Welding and Hot Tapping.

Engineering shall be consulted and will prepare a publication for the Hot Tapping and In-Service Welding operation that adheres to API 2201.

**WARNING:** In-Service Welding and Hot Tapping are not allowed on American Society of Mechanical Engineers (ASME) coded pressure vessels.

General requirements for In-Service Welding and Hot Tapping are:

- The hot tap machine shall be rated for the working temperature and pressure of the material involved. The seals and materials of the machine shall be compatible with the contents of the line.
- Before Hot Tapping is attempted, the operations supervisor in charge shall carefully inspect the machine, cutter, and pilot bit
- Vessels or lines to be hot tapped shall be properly inspected for adequate wall thickness and absence of imperfections/laminations
- The oxygen level in the equipment shall be controlled to prevent formation of a mixture in the flammable or explosive range
- Welders shall be qualified in accordance with the applicable code and specification
- Personnel using Hot Tapping equipment shall be competent with the Hot Tapping procedure and equipment

**WARNING:** Hot Tapping closer than 18 inches to the flange or threaded connection or three inches to a welded seam is not permitted.

- Hot tapping on tanks can only be performed at a minimum of three feet below the liquid level. All valves on suction or discharge lines, agitators, and all other equipment that can cause conditions inside the tank to change shall be isolated by blinding or other energy isolation procedures before starting the procedure.
- Welding cannot be performed on compressed air lines while air remains in the lines/equipment. Such equipment may contain lube oil or other residue that may ignite.
- Work on lines or vessels containing hydrocarbons, corrosive, or toxic materials, such as caustic soda, sulfuric acid, ammonia, etc., shall also include precautions to protect personnel from chemical hazards

**NOTE:** Welding may be permitted on systems containing non-combustible synthetic oil.

## D Key Responsibilities

Position	Responsibilities
Operation Supervisors	Implementing and enforcing the BP GoM In-Service Welding and Hot Tapping Program

## E Procedures

### E.1 In-Service Welding and Hot Tapping

- Before proceeding with a hot tap, the following conditions shall be satisfied:

- Attendance of the operations supervisor or designated alternate is mandatory during the procedure
- Clearly mark the area where the connection will be made
- Measure the metal thickness, and verify the absence of imperfections/laminations
- Secure applicable permits (hot work, confined space entry, etc.), assign fire watch, and make appropriate rescue equipment available
- Provide signs and barricades to warn and restrict all non-essential personnel from the site
- Advise operations, field, and other affected personnel of the job, and develop a procedure for isolation and shutdown in case of line failure
- Confirm that the fitting is properly positioned and supported before welding to prevent misalignment of the hot tap machine
- Protect the weld area during cleaning, preparation, and welding if blowing dirt, snow, or rain is present
- Complete a documented JSEA prior to commencing work to discuss such things as the procedure, what to do in the event of an emergency, etc.
- Understand the flow rates for quench rate calculations
- Inspect the assembly to which the hot tap machine is to be attached during and after welding and before the hot tap machine is installed. Radiograph, dye penetrant, ultrasonic, and magnetic particle are recommended inspection methods. These procedures do not replace, and shall be done in addition to, hydrostatic or pneumatic testing.
- Follow the machine installation instructions of the manufacturer. Additionally, check the following areas:
  - Verify the hot tap valve is properly sized, of appropriate metallurgy, and is a full opening valve. Test for seat leakage prior to installations
  - Run the boring bar through the valve opening to be sure the cutter does not jam or drag
  - Calculate the travel of the cutter to confirm the tap can be completed within the dimensional limits. Confirm the cut will be stopped before the cutter touches the opposite side of the tapped pipe and that the cutter can be retracted far enough to allow unimpeded closure of the tapping valve.
  - Confirm the bleed-off valve will hold pressure and is not plugged. Also check that precautions are taken for safe bleed-off and disposal of material collected in the machine above the hot tap valve.
- Test the welded attachment and hot tap machine before cutting is started by:
  - Verifying tightness of bolts, packing, packing nuts, and bypass line (if required) to avoid possible leakage
  - Pressure testing the new weld and the hot tap machine simultaneously. The test pressure shall be 110 percent of the working pressure.
  - Using nitrogen if a pneumatic test is substituted for a hydrostatic test. Use a soap solution on the weld to test for leaks.
- Follow the manufacturer's instructions when operating the hot tap machine. If the blank or coupon is lost, do not attempt to search for it without isolating and depressurizing the line per the Energy Isolation section of this manual.

## F Key Documents

American Petroleum Institute, API Publication 2201

30 CFR 250.109 - What documents must I prepare and maintain related to welding?

Control Tier 2 – GoM HSSE

CD# UPS-US-SW-GOM-HSE-DOC-00116-2

Revision Date: 06/01/08

Uncontrolled Document. Valid Only at the Time of Printing. Print Date: 6/18/2008

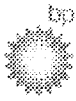
30 CFR 250.110 - What must I include in my welding plan?

30 CFR 250.111 - Who oversees operations under my welding plan?

30 CFR 250.112 - What standards must my welding equipment meet?

30 CFR 250.113 - What procedures must I follow when welding?

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Changed title of the practice Formatting and minor edits for clarification
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	The changes included title from In-service Welding and Hot Tapping Program to Hot Tapping Program. Changed CD # from 10083 to UPS-US-SW-GOM-HSE-DOC- 00116-2 to conform to new numbering nomenclature inside of the new GoM HSSE doc base. Changed 3 authorities and 1 custodian.
01/25/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



**GoM Safe Practices Manual (SPM) – GoM Incident Notification, Reporting and Investigation Procedure**  
**Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00115-2**

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/11/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	09/10/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	09/10/14		

## A Purpose/Scope

This procedure describes the minimum internal BP requirements for notification, reporting and investigating HSSE incidents, environmental incidents reportable to regulatory agencies and regulatory non-compliance incidents in the Gulf of Mexico Strategic Performance Unit (GoM SPU). The prime objective is to report, investigate and analyze incidents that occur within the BP work environment in order to prevent recurrence and continually improve performance.

This procedure provides guidance on how to report environmental incidents to the National Response Center (NRC) **immediately**, when required.

This procedure provides guidance for investigating incidents with these actual or possible outcomes (not a complete list):

- Fatalities
- Workplace injuries and illnesses
- Environmental incidents
- Fires
- Explosions
- Property damage or loss
- Regulatory non-compliance

The procedure provides guidance for how to identify incidents related to:

- Integrity management
- Process safety
- Marine
- Control of Work
- Driving

**NOTE:** Tr@ction is a web-based incident record keeping and Action Tracking system. It tracks both the occurrence and the resolution of an incident. As the possible causes are identified and appropriate preventive actions are recommended, incidents are documented and actions are tracked to closure within the application.

## B Definitions

Definitions Table

Term	Definition
BP Work Environment	The establishment and other locations (including marine vessels and vehicles) where one or more BP employees and/or BP Contractors are working or are present as a condition of their employment/contract. The work environment includes not only physical locations, but also the equipment or materials used by the employee or contractor during the course of his or her work. (Interpretation: BP Work Environment is traditionally known as a BP Managed or BP Controlled Site.)
BP Work Environment	Specifically excluded are: <ul style="list-style-type: none"> <li>• Locations where a contractor is working and where the location is controlled by their employer, their employing contractor or themselves. (Interpretation: This is traditionally known as a Contractor Managed Site.)</li> <li>• Vehicles or marine vessels that have been spot-chartered</li> </ul>
BP Workforce	The BP Workforce comprises all BP Employees and all BP Contractors. <u>BP Employee</u> : An individual who has a current contract of employment with BP p.l.c. or one of its subsidiary companies. <u>BP Contractor</u> : An individual who is working solely for the benefit of BP under a contractual relationship to supply BP p.l.c. or one of its subsidiary companies with goods and/or services. A contractual relationship covers: <ul style="list-style-type: none"> <li>• All individuals contracted directly or sub-contracted</li> <li>• All employees of companies contracted directly or sub-contracted</li> <li>• All situations where a contract has not been raised, but BP's procurement policy would normally expect there to be a contract in place. This applies to all levels, including sub-contracted relationships</li> </ul>
Comprehensive List of Causes	A root cause analysis technique to assist investigators in systematically determining the causes of incidents
Day Away from Work Case	A work-related injury or illness where the member of the BP workforce could not have worked on any day after the injury or illness, irrespective of whether there was scheduled work or they return to work even when a licensed health care professional recommends that the individual stay at home
Environmental Incident	A situation where a person observes or becomes aware of a fact or facts that suggest an environmental issue (releases to the environment, mismanagement of waste, etc.), including, but not limited to environmental nonconformance and violations

Term	Definition
Explosion	<p>An incident involving the unintentional, rapid and destructive release of materials and/or energy, including detonations, deflagrations and physical overpressures that result in physical damage. <u>An explosion of any kind should be reported.</u></p> <p>Explosions typically related to Process Safety Incidents are:</p> <ul style="list-style-type: none"> <li>• Ignition of a vapor cloud</li> <li>• A failure of a pressure control system that results in an overpressure and bulges the vessel/tank</li> </ul> <p>Explosions do not include:</p> <ul style="list-style-type: none"> <li>• An overpressure that results in the activation of a relief valve</li> <li>• An overpressure that results in the burst of a rupture disk</li> </ul>
Fire	<p>An incident involving either the unintentional ignition of material resulting in flame or smoke, or an unintentional electrical arc. <u>Any fire of any magnitude should be reported, irrespective of whether it is considered a Process Safety Incident.</u></p> <p>Examples of fires that may be considered Process Safety Incidents include:</p> <ul style="list-style-type: none"> <li>• A gas, oil or chemical release that results in a flame</li> <li>• A tangible indication of a fire in a plant handling hydrocarbons where no flames were actually seen</li> <li>• A fire, including an electrical arc, from a 120- or 220-volt shorted switch in an operation handling hydrocarbons</li> </ul> <p>Examples of fires that are not normally considered Process Safety Incidents include:</p> <ul style="list-style-type: none"> <li>• A paper or cardboard fire in a garbage can in an office building</li> <li>• A fire during equipment repair in a maintenance shop</li> <li>• Smoldering rags in a pump house (whether or not there is a flame)</li> </ul>
First Aid Case	<p>A work-related injury or illness is classified as a first aid case if the treatment of the resultant injury or illness is limited to one or more of the following specific treatments:</p> <ul style="list-style-type: none"> <li>• Using a non-prescription medication at non-prescription strength</li> <li>• Administering tetanus immunizations</li> <li>• Cleaning, flushing or soaking wounds on the surface of the skin</li> <li>• Using wound coverings such as bandages, gauze pads, or using butterfly bandages</li> <li>• Using hot or cold therapy</li> <li>• Using any non-rigid means of support, such as elastic bandages, wraps, or non-rigid back belts</li> <li>• Using temporary immobilization devices while transporting an accident victim</li> <li>• Drilling a fingernail or toenail to relieve pressure, or draining fluid from a blister</li> <li>• Using eye patches</li> <li>• Removing foreign bodies from the eye using only irrigation or cotton swab</li> </ul>

Term	Definition
	<ul style="list-style-type: none"> <li>• Removing splinters or foreign materials from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means</li> <li>• Using finger guards</li> <li>• Using massages</li> <li>• Drinking fluids for relief of heat stress</li> </ul>
Formal Root Cause Analysis and Investigation	<p>A Formal Root Cause Analysis and Investigation requires the following:</p> <ul style="list-style-type: none"> <li>• An investigation team (including Root Cause Specialist) and subject matter experts (SMEs) where applicable</li> <li>• Investigation Terms of Reference (TOR)</li> <li>• Incident finding analysis using the Comprehensive List of Causes</li> <li>• Formal Investigation Report</li> <li>• Formal Lessons Learned Report</li> </ul>
Functional Authority	A competent person who is designated by their functional role as the authority in Drilling and Completions, Marine, Engineering, HSSE, or Operations
High Potential Incident	An incident or near miss, including a security incident, where the most serious probable outcome is a major incident
Incident	An unplanned event or occurrence that affects or has the potential to affect the health, safety or security of people, assets or the environment
Major Incident	<p>An incident, including a security incident, involving any one of the following:</p> <ul style="list-style-type: none"> <li>• A fatality associated with BP operations</li> <li>• Multiple injuries (10 or more) or health effects</li> <li>• Significant adverse reaction from authorities, media, NGOs or the general public</li> <li>• Cost of accidental equipment and property damage, and/or loss of business value equal to or exceeding US \$5 million.</li> <li>• Loss of Primary Containment (Release <math>\geq</math> 100 barrels (bbls) Oil/diesel; <math>\geq</math> 10 bbls Flammable liquid (e.g. Methanol); <math>\geq</math> 20 thousand cubic feet (mcf) Natural gas</li> </ul>
Material Release - Atmospheric	Any unplanned, unexpected release of a gas to the atmosphere
Material Release - Leak	Any unplanned, unexpected release of a liquid or solid (powder) from primary containment and caught by secondary containment, i.e., did not fall into the water or on land
Medical Treatment Case	<p>A case arising from an incident in which the management and care of the patient to address the injury or illness are above and beyond first aid. Medical treatment does not include the conduct of diagnostic procedures, such as X-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes. Medical Treatment cases include the following:</p> <ul style="list-style-type: none"> <li>• Any loss of consciousness</li> <li>• Significant injury or illness diagnosed by a physician or other licensed</li> </ul>

Term	Definition
	<p>health care professional for which no treatment is given or recommended at the time of diagnosis. Examples include punctured ear drums, fractured ribs or toes, byssinosis, silicosis and some types of occupational cancer</p> <ul style="list-style-type: none"> <li>• Needle stick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material</li> <li>• Occupational hearing loss</li> <li>• Medical removal under a government standard</li> </ul>
Minor Incident	<p>An incident, not a serious incident, described by one or more of the following:</p> <ul style="list-style-type: none"> <li>• First aid</li> <li>• Equipment or Property Damage (less than US \$25,000)</li> <li>• Fire / Explosion resulting in Equipment or Property Damage (less than US \$25,000)</li> <li>• Security (breach of policy leading to informal warning)</li> <li>• Spill to sea (&lt;1 bbl hydrocarbon or chemical &lt; RQ)</li> <li>• Near miss (potential severity equal to above)</li> </ul>
Near Miss Incident	<p>An unplanned event or occurrence that had the potential to affect the health, safety or security of people, assets or the environment. A near miss may be related to control of work, integrity management, marine, dropped object, operational excursions beyond design limits, or process safety</p>
Non-Occupational (Non-Work-related) Incident	<p>An incident, accident or illness where the work environment did not either cause or contribute to the resulting condition or significantly aggravate a pre-existing condition. However, these incidents need to be reported to the supervisor or team leader</p>
Notice of Violation	<p>Any written enforcement action (e.g., compliance notice, compliance order, notices of noncompliance, citation, fine or penalty) issued against any BP operation. This may include health, safety or environmental violations or notices, but does not include minor deficiencies</p>
Occupational Illness	<p>Any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment</p>
Occupational Injury	<p>An injury that results from a work activity or from a single instantaneous exposure in the work environment</p>
Operational Excursion Beyond Design Limits	<p>Incidents where protective devices and/or operational controls have failed and one or more design limits (original design limits or de-rated limits due to damage or material degradation) of equipment have been exceeded (e.g., internal or external pressures, temperatures, flow velocity, or structural loading)</p>
Restricted Work Case	<p>An incident classified as a restricted work or job transfer case in which one of the following applies:</p> <ul style="list-style-type: none"> <li>• The member of the BP Workforce is kept from performing one or more of the routine functions of his or her job, or from working the full workday that he or she would otherwise have been scheduled to work, or is</li> </ul>



Term	Definition
	<p>transferred to a different job for all or part of his or her period of recuperation</p> <ul style="list-style-type: none"> <li>• A physician or other licensed health care professional recommends one of the following for the member of the BP Workforce: <ul style="list-style-type: none"> <li>- Do not perform one or more of the routine functions of his or her job</li> <li>- Do not work the full workday that he or she would otherwise have been scheduled to work</li> <li>- Transfer to a different job for all or part of his or her period of recuperation</li> </ul> </li> </ul>
Root Cause Specialist	A trained specialist with demonstrated experience in the BP Comprehensive List of Causes
Security Incident	Any incident involving robbery, theft, assault, burglary, criminal property damage, drug/alcohol abuse or possession, fraud, unethical conduct, terrorist or guerilla activity, civil unrest, security of information breach, or digital security
Serious Incidents	<p>An incident, not a HiPo or MIA, that results in one of the following:</p> <ul style="list-style-type: none"> <li>• Equipment Damage/Business Value Loss (&gt; \$25,000 &lt; \$5m)</li> <li>• Security (breach of policy or criminal act)</li> <li>• Fire / Explosion resulting in Equipment or Property Damage (&gt; \$25,000 &lt; \$5m)</li> <li>• Loss of Primary Containment (Release &lt; 100 bbls oil/diesel; &lt; 10 bbls methanol; &lt; 20mcf of natural gas)</li> <li>• Environmental non-compliance (e.g. NPDES exceedance)</li> <li>• Near Miss (potential severity equal to above)</li> </ul>
Spill	<p>The unplanned or accidental loss of primary containment from any operation within the BP work environment, irrespective of any secondary containment or recovery. Any material release from primary containment that reaches ground and/or water is a spill</p> <ul style="list-style-type: none"> <li>• Oil, Condensate, Produced Water Spill - A release from primary containment of any form of oil, condensate or produced water. Oil is defined as crude oil, lubricating oils, hydraulic oil, gasoline and diesel fuels, aviation fuel, kerosene and any other products refined from crude oil. Synthetic lube oils are included. The US EPA definition of oil includes both petroleum oils (e.g., natural hydrocarbon-based substances, refined petroleum products, mineral oil) and non-petroleum oils (e.g., synthetic oils such as silicone fluids, tung oils, wood-derivative oils such as resin/rosin oils, animal fats and oil, edible and inedible seed oils from plants). The MMS definition of oil does not include vegetable and animal oils</li> <li>• Chemical Spill - A release from primary containment of any pure chemical, chemical mixture or compound (excluding gaseous releases to the atmosphere) for which an MSDS is required or for which an agency reporting requirement exists</li> </ul>

Term	Definition
Uncontrolled Release	<p>Any uncontrolled event, regardless of volume, where process fluids (e.g., hydrocarbons, produced water, chemicals, high pressure air, nitrogen, steam, or hazardous materials) are released from primary containment, and that results in the need for immediate corrective action (e.g., shutdown, evacuation or isolation) to mitigate the effects of loss of containment</p> <p>Examples of Uncontrolled Release events include: flange or seal 'blow outs' requiring isolation and/or immediate repair, fitting of clamps to pipe work to isolate a leak or injecting a valve with a compound to isolate a leak, an event such as reactor or pipeline cracks that are a minor weep, i.e., metal is so thin 'immediate' controlled shutdown of the unit is required</p> <p>Examples of events that are not Uncontrolled Releases include: minor flange, hose joint or seal liquid leaks that can be contained by capturing the fluid for safe disposal, relief valves relieving to safe areas (atmosphere and/or sumps) or to flare systems per design</p>
Unsafe/Unhealthy Condition	<p>Any departure from the required or expected performance or condition of equipment (Plant), procedures (Process) or People which if not addressed could result in an incident, or make a consequence of an incident more severe</p> <p>For example: thinning of pipe due to corrosion or excess work hours causing fatigue</p>

## C Types of Incidents

Term	Definition
Control-of-Work Related Incident	An incident that was the result of failure to manage and/or control human activities involving job planning, personnel competency, risk assessment, and safe execution of work
Driving Incident	<p>An incident involving a motor vehicle resulting in injury or loss/damage or harm to the environment, whether this impacts the BP workforce directly or impacts a third party. This is irrespective of whether the incident was preventable or non-preventable. It excludes all incidents where:</p> <ul style="list-style-type: none"> <li>• The BP workforce vehicle was legally parked</li> <li>• The journey is to or from the driver's normal place of work</li> <li>• The damage is limited to minor wear and tear (e.g., stone damage to windscreen)</li> <li>• The incident is the result of vandalism or theft</li> <li>• A company-provided vehicle is being driven on non-work-related activities</li> </ul>
Integrity Related Incident	<p>Integrity related incidents include the following events:</p> <ul style="list-style-type: none"> <li>• Operational excursions beyond design limits</li> <li>• Detection of unanticipated forms or rates of equipment damage or material degradation</li> <li>• On-demand or undetected in-service failure (or bypass) of a protective</li> </ul>

Control Tier 2 – GoM HSSE

CD# UPS-US-SW-GOM-HSE-DOC-00115-2

Revision Date: 09/10/09

Uncontrolled Document. Valid Only at the Time of Printing. Print Date: 10/5/2009

Term	Definition
	<p>safety system/device</p> <ul style="list-style-type: none"> <li>• Failure or damage to structural facilities such as pipe supports, pilings, handrails, or walkways that compromises integrity</li> <li>• Failure of lifting equipment, including rigging</li> <li>• Lifting of relief valves or operation of rupture disc or other over-pressure protection devices</li> <li>• Failure of emergency response equipment that occurs during an actual emergency, drill or spill/uncontrolled release</li> <li>• Failure of or damage to equipment or structures leading to an actual or potential OSHA Recordable.</li> </ul>
Marine Incident	Any incident associated with marine activity involving any marine vessels or units, the marine structure and systems of Floating Production and/or Storage units, or involving the operation and equipment of ship-shore interface to marine terminals, including single buoy mooring/single point mooring, as defined in Section 1.2 Scope Applicability of the Group Marine Standard
Process Safety Incident	<p>An unplanned event or occurrence which has, or could have, released hazardous materials or energy.</p> <p><u>Includes</u> produced oil, gas, diesel, methanol, glycol, nitrogen, and toxic production chemicals.</p> <p><u>Excludes</u> lube oil, hydraulic oil, potable or produced water, non-hazardous materials, etc</p>

## D General Requirements

BP employees and BP contractors involved in or witness an incident or near miss are required to immediately notify the person in charge or supervisor who is responsible for the work being conducted.

Incidents that occur in the BP work environment must be investigated and reported in Tr@ction. A formal root cause analysis and investigation shall be carried out for major incidents, high potential incidents, and recordable cases. The investigation shall be documented utilizing the formal root cause analysis report format or lessons learned format, depending on the incident classification and guidance from the HSSE Director. (A copy of the report and lessons learned format is provided in the Table 2 of the on-line version of the SPM.)

It is at the discretion of the person in charge (PIC) or the Functional Authority to request a formal root cause analysis investigation for serious and/or minor incidents. It may be appropriate to perform a root cause analysis investigation on integrity related near miss incidents, such as corrosion of stainless steel tubing, in order to understand the underlying systemic issues that may exist.

All IM-related incidents resulting in equipment failure that requires the equipment to be shutdown for repairs or replacement must have a documented pre-startup safety review (PSSR) completed prior to restart to assure it is fit for purpose. (A URL link to a PSSR checklist is provided in Section G. Key Documents and Tools, of the SPM on-line.)

The appropriate regulatory agencies (USCG, EPA, MMS and NRC) must be notified of incidents immediately. BP is required to notify the appropriate regulatory agencies and report information on specific incidents as outlined in Appendices 1, 2, 3 or 4.

Incident documentation (e.g., investigation report, MIA notification, HiPo notification, etc.) must reside in Tr@ction. The incident investigation report will likely include corrective action items. All action items related to incident investigations must be tracked using the Tr@ction database until final closure is achieved.

## E Key Responsibilities

Position	Responsibilities
Asset Manager, Project General Manager, or Functional Manager	<ul style="list-style-type: none"> <li>• Reports incidents and near misses that occur in the BP work environment to the Vice President per Table 1</li> <li>• Reviews and approves MIA and HiPo notifications</li> <li>• Contacts the HSSE Manager/Director, and if process safety or IM-related, Process Safety and Integrity Manager for consult on makeup of the investigation team</li> <li>• Distributes HiPo Notification to 'G E&amp;P Incident Notification' distribution list</li> <li>• Develops Incident Investigation Terms of Reference for MIAs</li> <li>• Approves Incident Investigation Terms of Reference for HiPo and Recordable investigations</li> </ul>
BP Workforce	<ul style="list-style-type: none"> <li>• Reports incidents and near misses that occur in the BP work environment to their supervisor or BP representative. May be requested to participate in the investigation</li> </ul>
HSSE	<ul style="list-style-type: none"> <li>• Contacts the applicable regulatory agencies</li> <li>• Develops the draft notification reports for MIAs and HiPos and coordinates the feedback process from line management, HSSE management, Legal, GPA, Functional Authorities and others as appropriate</li> <li>• Develops the Lessons Learned report following the completion of the investigation report</li> <li>• Manages and maintains a list of trained Investigation Team Leaders and Root Cause Specialists</li> <li>• Selects the RCS for HiPo's and recordable incident investigations</li> </ul>
Houston Line Management	<ul style="list-style-type: none"> <li>• The supervisor or manager receiving the report of an incident or near miss</li> <li>• Responsible for reporting incidents and near misses per Table 1</li> </ul>
Investigation Team Leader	<ul style="list-style-type: none"> <li>• Leads the team responsible for investigating the incident or near miss. The individual performing this role will be selected based on the classification of the incident (e.g., HiPo, DAFW, serious incident) and has been trained in the BP process of identifying root cause using the BP CLC chart.</li> <li>• In all cases, the investigation team leader generates the investigation report and manages the report review process with line management, Legal, HSSE, GPA, Functional Authorities and others as appropriate</li> </ul>

Position	Responsibilities
Root Cause Specialist	<ul style="list-style-type: none"> <li>A member of the investigation team who has been trained in the BP process of identifying root cause using the BP CLC chart</li> <li>The individual performing this role will be selected, by HSSE, based on the classification of the incident (e.g., HiPo, DAFW, serious incident)</li> </ul>
Vice President	<ul style="list-style-type: none"> <li>Reports incidents and near misses that occur in the BP work environment to the Senior Vice President per Table 1</li> <li>Distributes MIA Notification to 'G E&amp;P Incident Notification' distribution list</li> <li>Selects the Investigation Team Leader for HiPo and recordable incident investigations</li> <li>Approves MIA Investigation Terms of Reference</li> <li>Reviews and approves MIA Investigation Report and Action Plan</li> <li>Distributes MIA Lessons Learned Report</li> </ul>
Senior Vice President	<ul style="list-style-type: none"> <li>Reports incidents and near misses that occur in the BP work environment to the Group Vice President per Table 1</li> </ul>

## F Incident Notification, Investigation and Reporting

The person in charge or supervisor is responsible for making the appropriate notifications as outlined in Table 1. Table 1 clarifies how incident notification occurs within the GoM SPU line organization. In addition, it provides guidance on the timing of the notification required based on incident classification.

Figure 1 shows the notification requirements for BP Production assets (non-drilling and completions related). Figure 2 is for BP-owned drilling and completion (D&C) facilities, Figure 3 is for mobile offshore drilling units (MODUs), and Figure 4 is for vessels.

The BP representative or person in charge is responsible to gather the facts of the incident, assess its potential outcome, and recommend to the OIM or supervisor in charge of the area whether further investigation is required.

The degree of the investigation varies according to the actual or potential incident classification. Table 2 outlines the type of investigation and investigation team required for various incidents based on their classification.

Within BP and the GoM SPU, root cause investigations utilize the BP Comprehensive List of Causes to identify immediate and possible system causes of an incident.

Incidents are to be documented in Tr@ction, with all supporting information attached.

The effectiveness of the reporting and investigation process is assured on a regular basis. At the SPU level, reporting completeness and accuracy is reviewed using a variety of tools, including:

- GoM HSSE Compliance and EMS Auditing Programs
- GoM HSE Quarterly Performance Reviews
- Annual EMS/HSE Management Reviews
- GoM Lessons Learned Procedure
- Annual Ethics Certification by Managers

## **G Key Documents**

FC&A - HSSE Reporting Guidelines

PSSR Checklist

MIA Notification Template (See Table 2 of the SPM on-line)

HiPo Notification Template (See Table 2 of the SPM on-line)

Incident Investigation Report Template (See Table 2 of the SPM on-line)

Terms of Reference Template (See Table 2 of the SPM on-line)

Lessons Learned Template (See Table 2 of the SPM on-line)

HSSE Incident Report "Short Form"

**Table 1: Incident Notification**

This table applies to incidents occurring within the BP work environment. It does not supersede the requirements for the field to report environmental events. For agency reportable environmental events, IMMEDIATE reporting to the NRC is required. Please refer to Appendices 1, 2, 3 and 4 for additional reporting information. It does not supersede the facility's site specific Incident Notification Flow Chart. For definitions of terms, refer to Section B of this procedure.

Severity Levels	Incident Classification Incident may be related to process safety, IM, security, transportation (marine, driving), compliance or COW.	Initial Verbal Notifications			
		Field to Houston Line Mgmt	Houston Line Mgmt to VP	VP to SPUL	SPUL to GVP
A-D	<b>Major Incident (MIA) (actual severity) or High Potential Incident (HiPo) (potential severity)</b> <ul style="list-style-type: none"> <li>Fatality (3 or more)</li> <li>Multiple (30 or more) injuries/health effects</li> <li>Equipment Damage/Business Value Loss ≥ \$100 million</li> <li>Security – Severe terrorist activity</li> <li>Loss of Primary Containment* (Release &gt; 100 bbls Flammable liquid; &gt; 1000 bbls Combustible liquid; or &gt; 200 mscf natural gas)</li> </ul>	Immediately	Immediately	Immediately	Within 8 hours  Written within 8 hours
E	<b>Major Incident (MIA) (actual severity) or High Potential Incident (HiPo) (potential severity)</b> <ul style="list-style-type: none"> <li>Fatality (1 to 2)</li> <li>Multiple (10 to 29) injuries/health effects</li> <li>Security – Serious criminal act</li> <li>Equipment Damage/Business Value Loss (\$5M-\$100M)</li> <li>Loss of Primary Containment* (Release 10 &lt; 100 bbls Flammable liquid; 100 &lt; 1000 bbls Combustible liquid; or 20 &lt; 200 mscf natural gas)</li> </ul>	Immediately	Immediately	Immediately	Within 8 hours  Written within 8 hours H&S only; all others within 24 hours
F	<ul style="list-style-type: none"> <li>DAFWC</li> <li>Security – Major criminal act</li> <li>Equipment Damage/Business Value Loss (\$500K-\$5M)</li> <li>Loss of Primary Containment* (Release 1.0 &lt; 10 bbls Flammable liquid; 1.0 &lt; 100 bbls Combustible liquid; or 2 &lt; 20 mscf natural gas)</li> </ul>	Within 2 hours of incident	Within 2 hours of incident	Within 24 hours of incident	Not Required
G	<ul style="list-style-type: none"> <li>Single or multiple recordables</li> <li>Security – breach of company policy w/ disciplinary action</li> <li>Equipment Damage/Business Value Loss (\$50k-\$500k)</li> <li>Loss of Primary Containment* (Release 0.1 bbl &lt; 1 bbl of Flammable or Combustible liquid ; or 0.2 &lt; 2 mscf natural gas)</li> </ul>	Within 8 hours of incident	Within 8 hours of incident	Within 24 hours of incident	Not Required
H	<ul style="list-style-type: none"> <li>First aid</li> <li>Security – breach of company policy w/ disciplinary action</li> <li>Equipment or Property Damage (&lt;\$50,000)</li> <li>Loss of Primary Containment* (Release &lt; 0.1 bbl of Flammable or Combustible liquid or &lt; 0.2 mscf natural gas)</li> </ul>	Within 12 hours of incident	Not Required	Not Required	Not Required
N/A	<b>a. Incident of Non-Compliance (MMS - INC)</b> <b>b. Notice of Violation (USCG - NOV)</b> (Environmental TL notifies applicable Line Manager via e-mail within 12 hours of receiving mailed citation)	12 hours of citation	24 hours of citation	48 hours of citation	Not Required
N/A	<b>Other Environmental &amp; Regulatory Incidents Requiring Internal Notification</b> (e.g., marine debris, dropped objects overboard, sheen sightings, muster)	See Appendices 1,2,3 and 4	Not required	Not required	Not Required

\* Loss of Primary Containment involving toxic materials refer to HSSE Advisor for guidance based on MSDS

**Figure 1 – Incident Notification for BP Production Assets (non-D&C related)**

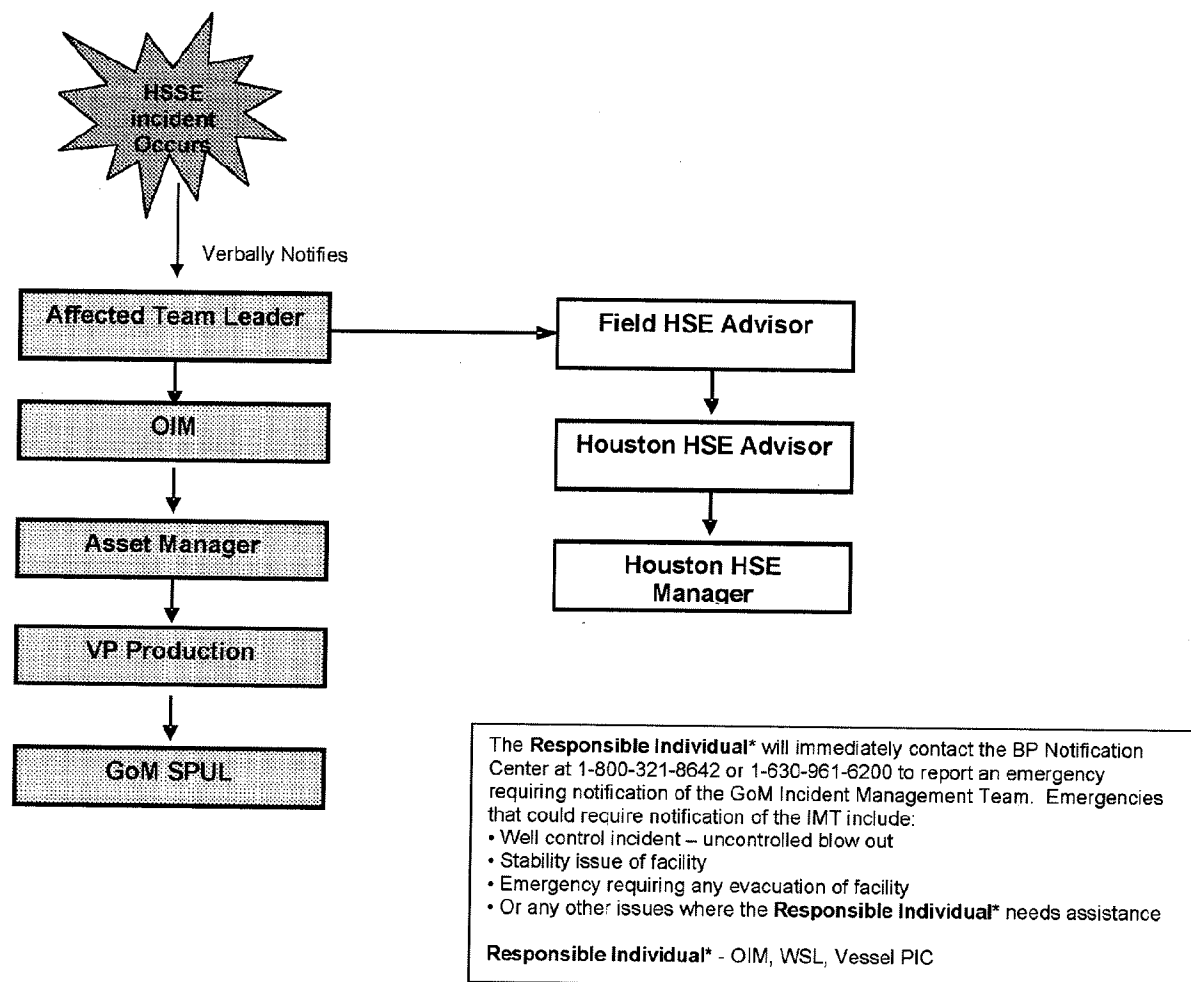
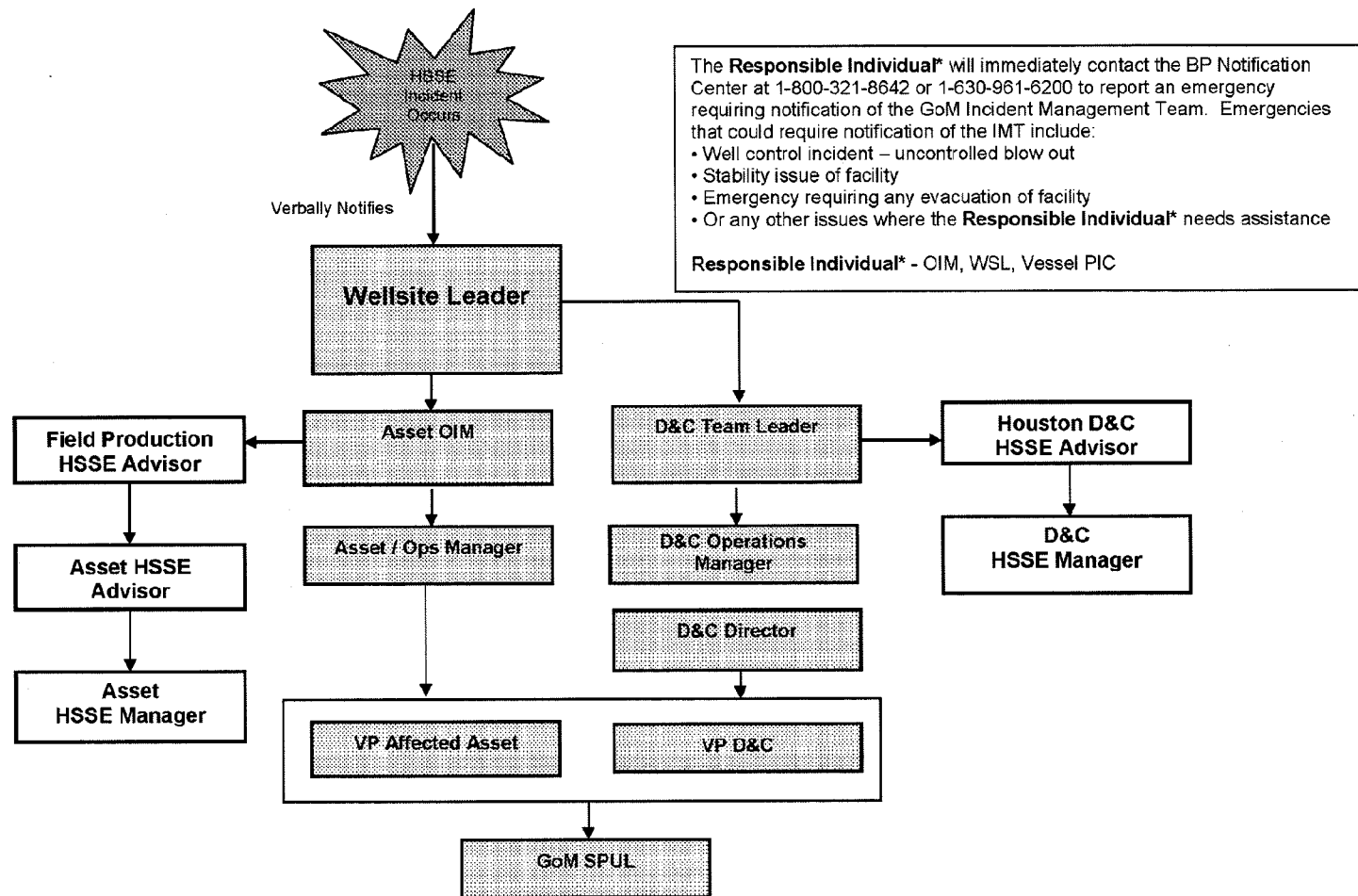




Figure 2 – Incident Notification for BP Owned D&amp;C Assets



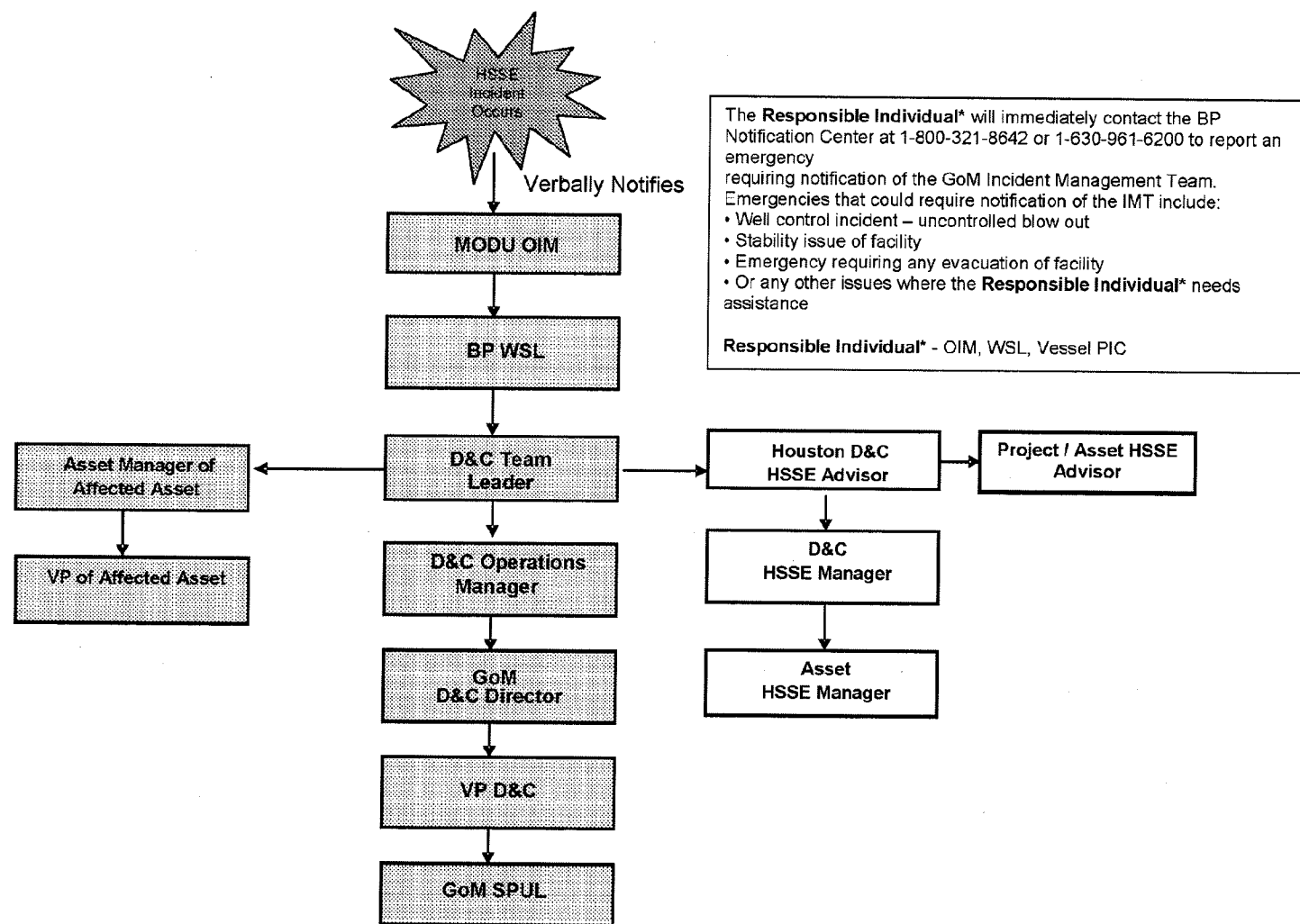
**Figure 3 – Incident Notification for MODU Rigs**

Figure 4 – Incident Notification for Vessels

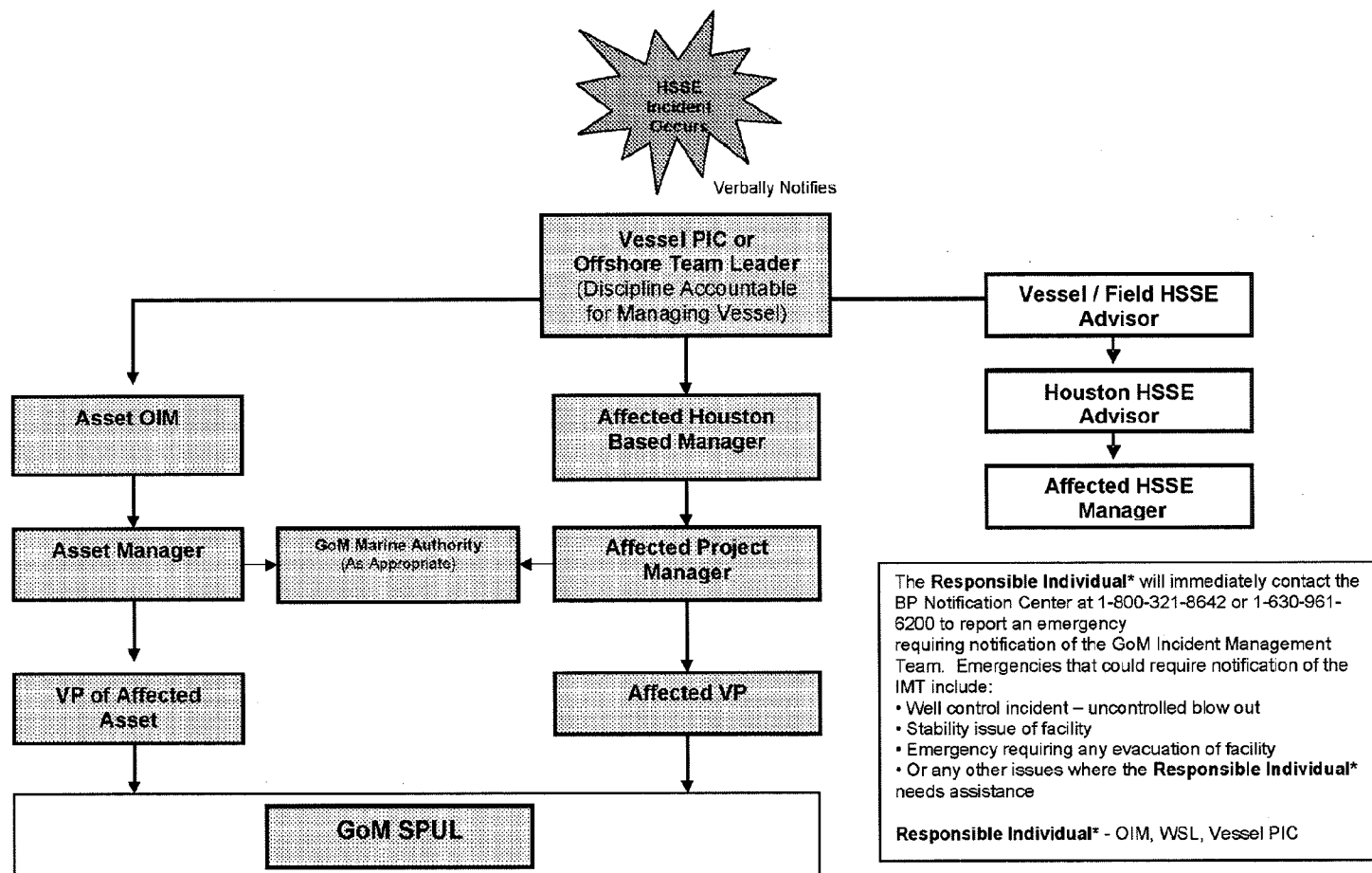


Table 2: Incident Investigation

Severity Level	Incident Classification	Investigation Team Make-Up	Investigation Documentation and Distribution		
			MIA / HiPo Notifications	Incident Investigation & Root Cause Analysis Report*	Lessons Learned (LL)*
A – D E	<b>MIA*</b> <ul style="list-style-type: none"> <li>VP contacts HSSE Director to form investigation team</li> </ul> <b>HiPo</b> <ul style="list-style-type: none"> <li>Asset Manager contacts HSSE Director to determine scale and scope of Investigation Team</li> <li>HSSE Director will network with EA and Marine Authority to consider technical specialist participation on investigation team.</li> </ul>	<ul style="list-style-type: none"> <li>External SPU Investigation Team Leader (TL) and Master Root Cause Specialist</li> <li>Subject Matter/Technical Expert/ Process Safety Engineer (where applicable)</li> <li>Facility personnel w/ knowledge of applicable operations including at least one member of supervision and HSSE</li> <li>Contact Legal for consultation</li> </ul>	<ul style="list-style-type: none"> <li>HSSE develops MIA/HiPo draft notification and obtains line management, HSSE management, Legal and GPA review</li> <li>VP distributes final MIA /HiPo notification to 'G E&amp;P Incident Notification' within 8 hours of incident. For HiPo, that is not safety and health related, within 24 hours of Incident.</li> <li>Do <b>NOT</b> distribute MIA /HiPo Notification to 'G GOM Significant Incidents' distribution</li> </ul>	<ul style="list-style-type: none"> <li>Terms of Reference (TOR) developed by Asset Manager and approved by VP</li> <li>Investigation TL develops report and obtains legal review.</li> <li>VP reviews and approves final report and action plan</li> </ul>	<ul style="list-style-type: none"> <li>HSSE develops one-page LL and obtains line management, Legal, GPA and Functional Authority review.</li> <li>VP distributes LL to 'G E&amp;P Incident Notification' and BP Shipping, if Marine related incident.</li> </ul>
	<b>F/G</b> <ul style="list-style-type: none"> <li>Asset Manager contacts HSSE Director to determine scale and scope of Investigation Team</li> <li>HSSE Director will network with EA and Marine Authority to consider technical specialist participation on investigation team.</li> </ul>	<ul style="list-style-type: none"> <li>Investigation TL will be an Asset Manager, Project General Manager or Functional Manager</li> <li>Root Cause Specialist (HSSE Advisor)</li> <li>Subject Matter Expert/Technical Expert/ Process Safety Engineer (where applicable)</li> <li>Facility personnel w/ knowledge of applicable operations</li> </ul>	NA	<ul style="list-style-type: none"> <li>TOR developed by applicable Line Manager and approved by Asset Manager</li> <li>Investigation TL/RCS develops Investigation Report, if required, and obtains legal and HSSE review.</li> <li>Asset Manager reviews final report, approves action plan and distributes report to 'G GOM Significant Incidents' distribution.</li> </ul>	<ul style="list-style-type: none"> <li>RCS develops one-page LL and obtains line management, HSSE, Legal, GPA and Functional Authority review.</li> <li>Asset Manager distributes one-page LL to 'G GOM Significant Incidents' distribution and to BP Shipping if Marine related incident.</li> </ul>
	<b>H</b> <ul style="list-style-type: none"> <li>Asset Manager, OIM, or Wells Manager, WSL discuss and determine the need to investigate incident</li> </ul>	<ul style="list-style-type: none"> <li>Investigation TL can be from within facility's chain of command</li> <li>Root Cause Specialist (HSSE Advisor)</li> <li>Subject Matter Expert/Technical Expert/ Process Safety Engineer (where applicable)</li> <li>Facility personnel w/ knowledge</li> </ul>	NA	<ul style="list-style-type: none"> <li>If required, TOR developed by facility PIC and approved by applicable Line Manager.</li> <li>If required, Investigation TL develops report and obtains legal and HSSE review.</li> </ul>	<ul style="list-style-type: none"> <li>If required, RCS develops one-page LL and obtains line management, HSSE, Legal, GPA and Functional Authority review.</li> <li>Asset Manager distributes one-page LL to 'G GOM Significant Incidents' distribution.</li> </ul>

Control Tier 2 – GoM HSSE

CD# UPS-US-SW-GOM-HSE-DOC-00115-2

Revision Date: 09/10/09

Uncontrolled Document. Valid Only at the Time of Printing. Print Date: 10/5/2009

Severity Level	Incident Classification	Investigation Team Make-Up	Investigation Documentation and Distribution		
			MIA / HiPo Notifications	Incident Investigation & Root Cause Analysis Report*	Lessons Learned (LL)*
		of applicable operations		* Completed within 30 days of Incident	* Completed within 30 days of Incident

\* For MIAs, HiPos, Recordable and Serious Incidents, if the incident involves a contractor on a BP work environment, a contractor representative will participate on the team, where applicable. On non-BP owned contract vessels/facilities within a BP Work Environment, the investigation will be co-led by the vessel/facility owner and BP.

All HSSE incidents will be documented utilizing the Preliminary HSSE Incident Report (Short Form). This applies to all BP and contractor incidents, excluding Wells. Wells contractors will use their own incident documentation process. The short form is not to be distributed but maintained locally on file.



HSSE Incident  
Report (short).doc

The Group Defined Operating Practice for Reporting HSSE and Operational Incidents requires that MIA's/HiPo's are entered into Tr@ction within 5 days. All work-related HSSE incidents will be stored in Traction for permanent retention. Traction reports will be distributed within 24 hours of completing the onsite investigation as follows:

Recordable and Serious incident Traction reports will be distributed SPU wide via the 'G GOM Significant Incidents' distribution list.

Minor incident Traction reports will only be distributed locally to appropriate people associated with the affected facility. The local distribution lists are as follows:

G GoM Minor Incidents Atlantis  
G GoM Minor Incidents Greater Puma  
G GoM Minor Incidents Holstein  
G GoM Minor Incidents Horn Mountain  
G GoM Minor Incidents Logistics  
G GoM Minor Incidents Mad Dog  
G GoM Minor Incidents Marlin  
G GoM Minor Incidents Nakika  
G GoM Minor Incidents Paleogene  
G GoM Minor Incidents Pompano  
G GoM Minor Incidents Subsea  
G GoM Minor Incidents Thunder Horse  
G GoM Minor Incidents Tubular Bells  
Place holder for future facilities.

Exception: If a minor incident has significant learning's, the Traction report should be distributed locally and to a broader audience

## Appendix 1: BP GoM Environmental and Regulatory Incident Notification Requirements

Event (Incidents must be reported immediately according to 40 CFR 110.6) (Environmental Pager Number : 713-612-4106)	Report to NRC IMMEDIATELY	Call Environmental Pager	Notify Water Specialist within 24 hrs	G GoM Significant Incident Distribution	G GoM Minor Incident Distribution
Sheens and Spills (Oil, NPDES SBM) > 1bbl	✓	✓		✓	
Any Sheens (including any oil based subsea spills)	✓	✓			✓
Any release or spill that exceeds a RQ (Chemical, Unknown)	✓	✓			
NO <sub>x</sub> Release > 1000 lbs	✓	✓			✓
Severe sheen from NPDES permitted discharge (requiring active spill response)	✓	✓	✓	✓	
NPDES <ul style="list-style-type: none"> <li>Toxicity test failure of NPDES permitted discharge (produced water, drilling fluid or chemically-treated misc. discharge)</li> <li>Oil and grease concentration &gt; 1,000 mg/L for NPDES permitted discharge (produced water or completion fluid)</li> <li>Observed impact to wildlife from NPDES permitted discharge (fish; birds)</li> </ul>			✓		✓
Sighting of dead or injured marine mammals		✓			✓
Marine Debris / Dropped objects overboard		✓			✓
Floating debris sighting of unknown origin		✓			

## Information required for immediate initial report to NRC (extracted from Spill Report Form)

Control Tier 2 – GoM HSSE

CD# UPS-US-SW-GOM-HSE-DOC-00115-2

Revision Date: 09/10/09

Uncontrolled Document. Valid Only at the Time of Printing. Print Date: 10/5/2009

Date/Time of Spill: \_\_\_\_\_ Date of Report: \_\_\_\_\_  
Date/Time Spill was Discovered: \_\_\_\_\_ Time of Report: \_\_\_\_\_  
Sighted By: \_\_\_\_\_ Reported By: \_\_\_\_\_  
Facility (Lat/Long) Location: \_\_\_\_\_ County/Parish: \_\_\_\_\_ State: \_\_\_\_\_  
Area/Block: \_\_\_\_\_ OCS-G \_\_\_\_\_ Well #: \_\_\_\_\_  
Description of incident: \_\_\_\_\_  
Spill Source: \_\_\_\_\_  
Type of material released: \_\_\_\_\_  
Quantity Discharged: \_\_\_\_\_ Discharge Rate: \_\_\_\_\_  
Description of spill: (i.e., slick – colored film or layer of oil, sheen – thin clear film or thin layer of oil; rainbow – reflect on type film, size): \_\_\_\_\_

## Appendix 2: NRC Reportable Environmental Incident Procedure

The intent of the process is to report environmental releases **immediately**, upon discovery, to the environmental pager. Environmental Pager Carrier calls the NRC immediately to notify environmental release. For NRC reportable environmental incidents, immediate reporting to the NRC is required.

**NOTE:** Although Statutes do not define the term "immediately", in enforcement, U.S. EPA relies on a comment in CERCLA's legislative history that expects notification within fifteen (15) minutes after knowledge of a release of a Reportable Quantity (RQ)\*. \* (Extracted from "Emergency Release Notification Requirements: How Soon is Soon Enough?" American Bar Association, Environmental Enforcement and Crimes Committee Newsletter, Vol. 8, No. 2 (Feb. 2007)).

1. The person observing an environmental incident must **immediately** notify the Offshore HSSE Advisor of that incident.
2. The Offshore HSSE Advisor notifies the environmental pager **immediately** with the known facts (sheen size, color, weather conditions, etc.).
3. If the Offshore HSSE Advisor is not available, the OIM or OIM Designee may assume the reporting responsibilities if that person has received the Environmental Reporting Training.
4. The Offshore HSSE Advisor completes the highlighted sections on the Spill Report Form as soon as possible. This is the minimum information needed by the environmental pager carrier to make the initial report to the NRC.
5. The Environmental Pager carrier must determine if the event requires notification to the NRC and report immediately.
6. A notification to the NRC is triggered when a regulated hazardous substance is released from a "facility," in excess of its reportable quantity (RQ) within a 24-hour period. Regulated hazardous substances include hundreds of chemicals listed on the List of Lists. The URL link to the List of Lists is provided in Appendix 3.
7. The Environmental Pager carrier or OIM shall make an initial notification to the NRC **immediate** via the internet by going to <http://www.nrc.uscg.mil/nrchp.html> or by calling 1-800-424-8802



8. The Offshore HSSE Advisor should continue to complete the Spill Report Form. The NRC or other applicable Agency will follow up on the incident within 30 minutes after making the initial notification via the internet to obtain additional information on the incident.
9. Continue to follow the site specific Incident Notification Flow Chart.

**Definitions:**

- a) Regulated Hazardous substances - elements, compounds and hazardous wastes appearing in the table in 40 CFR 302.4.
- b) Reportable quantity ("RQ") - that quantity, as set forth in 40 CFR 302.4, the release of which requires notification to the regulatory Agency.

**Appendix 3: Environmental Reportable Quantity List of Lists**

A notification to the NRC is triggered when a regulated hazardous substance is released from a "facility," in excess of its reportable quantity (RQ) within a 24-hour period. Regulated hazardous substances include hundreds of chemicals listed on the List of Lists. If the incident is determined to be a NRC reportable environmental incident, **immediate** reporting to the agency is required. The List of Lists used to determine if a RQ has been exceeded can be found by following the URL link below:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr;sid=2b55ae059f1fced5d1857d5f37221e8f;rgn=div8;view=text;node=40%3A27.0.1.1.2.0.1.4;idno=40;cc=ecfr>

Examples of substances and the amount required to be released to exceed an RQ are described below. This IS NOT an all inclusive list, so please determine RQs if the substance is not listed below by obtaining the MSDS sheet and calculating the RQ using the information found on the MSDS (i.e., density, etc.).

**EXAMPLES:****Oil Sheen**

Any spill of a substance that results in a sheen, must be reported to the NRC **immediately**. Sheen is defined as "an iridescent appearance on the surface of water, a silvery or metallic sheen, gloss or increased reflectivity, visual color or iridescence on the water surface."

**NO<sub>x</sub>**

The RQ for both NO and NO<sub>2</sub> is 1000 lbs. The rule of thumb is that for most facilities, flaring events exceeding 10 mmscf in a 24-hr period may be reportable to NRC if they result from an accident or malfunction. Planned flaring events are not reportable. The exact volume of flaring that would exceed RQ will depend on the facility, since it depends on the heating value of the gas. Please click on the link above and use the tool to help you calculate the volume of NO<sub>x</sub> released to atmosphere, and to determine whether the release is reportable.

**Ethylene Glycol**

The RQ for ethylene glycol is 5,000 lbs.  $RQ \text{ of ingredient (lbs)} \div \text{weight of product (lb/gal)} \div \text{weight \% of ingredient} = \text{reportable gallons of product}$ ; therefore,  $5,000 \text{ lbs} \div 8.84 \text{ lbs/gal} \div 0.5 = \text{approximately } 1,130 \text{ gallons of ethylene glycol spilled would exceed an RQ}$ .

## Appendix 4. MMS Incident Reporting Matrix and Reporting Requirements

Type of Incident	MMS Clarification	Oral Report Immediate	Report within 12 hours	Written Report 15 days
All fatalities	Includes fatalities due to illness	✓		✓
Occupational injuries that require evacuation for medical treatment	Only work related injuries/illnesses are reported.		✓	✓
Loss of well control (except shallow water flow – see below)	Underground (drilling/workover), Surface (drilling/workover), Surface (diverter), Surface (mechanical/procedures)	✓		✓
Loss of well control – Shallow water flow			✓	✓
Explosions and fires lasting 5 minutes or longer	Visible flame or any incident where there is evidence that burning has occurred.	✓		✓
Fires lasting <5 minutes	See definition above		✓	✓
All reportable releases of hydrogen sulfide gas	H2S releases that result in a 15-minute-time-weighted average atmospheric concentration of H2S of 20 ppm or more anywhere on an OCS facility.		✓	✓
All collisions that result in property or equipment damage >\$25,000	"Collision" means the act of a moving vessel (including an aircraft) striking another vessel, or striking a stationary vessel or object.		✓	✓
All incidents involving structural damage to an OCS facility	"Structural damage" means damage severe enough so that operations on the facility cannot continue until repairs are made	✓		✓
Crane or personnel/material handling incidents	Incident involving a failure of the crane itself (e.g. boom, cables, winches, balling), other lifting apparatus (e.g. air tuggers, chain pulls) the rigging hardware (e.g. slings, shackles, turnbuckles), or the load (e.g. striking personnel, dropping the load, damaging the load, damaging the facility).		✓	✓
All incidents that damage or disable safety systems or equipment (including firefighting systems)	Report only if failure causes shut-down of the entire system.		✓	✓
Any occupational injuries that result in one or more days away from work or one or more days on restricted work or job transfer	One or more days means the injured person was not able to return to work or to all of their normal duties the day after the injury occurred			✓
All gas releases that initiate equipment or process shutdown	Gas releases do not include events where gas is successfully released through the vent or flare system.			✓

Type of Incident	MMS Clarification	Oral Report Immediate	Report within 12 hours	Written Report 15 days
All incidents that require operations personnel on the facility to muster for evacuation for reasons not related to weather or drills	Incident that requires operations personnel to muster for evacuation for reasons not related to weather or drills. Does not include false alarms (e.g. H2S detector malfunctions and initiates muster)			✓
All other incidents resulting in property or equipment damage >\$25,000				✓
Oil spills 10 barrels or greater		✓		✓
Oil spills >1 bbl but < 10 bbls			✓	✓

Information Required for Immediate Oral Reports	
Date and time of occurrence	
Operator, and operator representative's name and telephone number	
Contractor and contractor representative's name and telephone number (if a contractor is involved in the incident or injury/fatality)	
Lease number, OCS area, and block	
Platform/facility name and number, or pipeline segment number	
Type of incident or injury/fatality	
Operation or activity at time of incident (i.e. drilling, production, workover, completion, pipeline, crane, etc.)	
Description of the incident, damage, or injury/fatality	

Information Required if Incident Involves Oil Spill	
Contact information	
Platform name or MMS-assigned pipeline segment number	
Date spill discovered	
National Response Center (NRC) report number	
Cause	
Spill location, including lat/long and distance to shore	
Estimated rate of release and current cumulative volume spilled	

Information Required if Incident Involves Oil Spill	
Type of hydrocarbon spilled, including API° gravity	
Spill response status, including total amount recovered	
Spill source abatement status	
For spills >50 bbls, the sea state, meteorological conditions and the size and appearance of the slick	

Revision Date	Authority	Custodian	Revision Details
9/10/09	GoM HSSE Director	GoM HSSE Programs Manager	Updated Figures 2 and 3 to reflect changes in organization and to ensure proper notification to new organization levels.
06/01/09	GoM HSSE Director	GoM HSSE Programs Manager	Chapter 20 Changes on Table 1 and 2, changes on definitions for clarity.
12/18/08	GoM HSSE Director	GoM HSSE Programs Manager	Updated definitions of Minor and Serious incidents regarding clarification to equipment and property damage thresholds for fires and explosions, per BP Group guidance. These changes were made in Section B (Definitions) and on Table 1.
12/11/08	GoM HSSE Director	GoM HSSE Programs Manager	Updated procedure by: <ul style="list-style-type: none"> <li>• Section C - revising definitions of "Integrity Related Incident" and "Process Safety Incident".</li> <li>• Section E and Table 2– removing responsibilities for Integrity Management for consistency with other sections of procedure.</li> <li>• Section E – adding requirement for Investigation Team Leader to have been trained in BP root cause process.</li> <li>• Tables 1 and 2 – Adding notification and reporting requirements for Marine related MIAs, HIPOs and Serious Incidents.</li> <li>• Adding Figures 1, 2, 3, and 4 to show incident notification requirements and supplement Table 1.</li> </ul>
04/07/08	GoM HSSE Director	GoM HSSE Programs Manager	Updated procedure to include recent changes to MMS reporting requirements.
03/26/08	GoM HSSE Director	GoM HSSE Programs Manager	Updated procedure to include provision for the assets to report environmental releases immediately.

Revision Date	Authority	Custodian	Revision Details
01/02/08	GoM HSSE Director	GoM HSSE Programs Manager	Document title changed to 'GoM Incident Notification and Investigation Procedure.' Updated and embedded Tables 1 and 2 within document. Added definitions for types of incidents to include Integrity Related, Marine and Process Safety.
06/29/07	GoM HSSE Director	GoM HSSE Programs Manager	Changed title of document to 'GoM Incident Notification and Investigation.' Added Uncontrolled Release definition. Changed Revision Date to match 1st page. Removed GoM Shelf from Distribution Lists. Added Tables 1 and 2. Removed background on how investigations are done.
09/01/05	S. Garner B. Herbert C. Jackson R. Deleonardis	K. Kanocz	Enhanced the purpose/scope to include general guidance in reference to contractor incidents. Added definition for a non-occupational (non-work-related) incident. Provided additional guidance on response to Major and High Potential Incidents. Deleted severity ranking section. (This information is captured in the GoM Incident and Action Tracking procedures.) Added link to the CLC Glossary. Modified Investigation Checklist. Provided example Terms of Reference. Provided example format for a formal Incident Investigation and Root Cause Analysis Report. Changed from CD#10044 to UPS-US-SW-GOM-HSE-DOC-00115-2.
02/11/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Ladder Usage and Inspection

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00118-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/28/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

The purpose of this chapter is to provide instruction on using and inspecting ladders.

### B Definitions

Definition Table

Term	Definition
Fixed Ladder	A ladder permanently attached to a structure, building, or equipment
Portable Ladder	A ladder that can be readily moved or carried

### C Overview

Ladders shall be made of non-conductive material. Metal and wooden portable ladders are prohibited.

#### C.1 Fixed Ladders

Design, construction, and installation of all fixed ladders shall comply with the OSHA regulation standard (29 CFR 1910.27).

#### C.2 Portable Ladders

The following requirements shall be met when using portable ladders at a BP facility:

- Inspect ladders before use
- Straight and extension ladders shall have safety shoes (non-skid pads)
- Adhere to the required angle of one foot horizontal for every four feet vertical for straight or extension ladders (for example, 8 foot vertical ladder equals 2 feet horizontal; 10 feet vertical ladder equals 2.5 feet horizontal)
- Confirm that ladder is secured (tied off) or manually held while in use to prevent slippage (and extends 36" above surface line if using extension ladder)

- Never lean from a ladder where the center of the user's waist or belt buckle is past the edge of the ladder
- Never use buckets, drums, or other objects to substitute for a ladder
- Never place a ladder on buckets, drums or other objects to raise a working level
- Never use a folded stepladder to substitute for a straight ladder
- Confirm stepladders are in the full-open, locked position before use
- Both hands shall be available for climbing. Never carry objects in hands while climbing
- Raising and lowering of tools shall be by tool case or other positive means that will prevent objects from being dropped
- Remove all portable ladders from the work location and properly store them after each use

## D Key Responsibilities

Position	Responsibilities
Operating Supervisors	Implementation and enforcement of the Ladder Usage Program

## E Procedures

### E.1 Inspection

#### E.1.a Fixed Ladders

Properly inspect fixed ladders before use. The inspection shall include the following:

- Fixed ladders 20 feet or more in height (measured from the ground/deck) have a cage or climb assist device
- Caged ladders of more than 30 feet in continuous length have platforms. Platforms serve as rest points and break the continual length at no more than 30 feet (does not apply to emergency escape ladders)
- Joints between steps and side rails are tight
- Hardware and fittings are securely attached
- Rungs and steps are clean and free of defects
- Ladder was treated to prevent rust or weathering

**NOTE:** Defective fixed ladders shall be tagged out-of-service and repaired before use

#### E.1.b Portable Ladders

Properly inspect portable ladders before use. The inspection shall include the following:

- Ladders are constructed of a non-conductive material
- Joints between steps and side rails are tight
- Hardware and fittings are securely attached
- Moveable parts are free and operable
- Moveable bearings are lubricated
- Rope is not worn or frayed
- Safety feet are operable

- Rungs and steps are clean and free of defects

## F Key Documents

American National Standards Institute: ANSI A14.3-1956, Safety Code for Fixed Ladders; ANSI A10.8-1969, Safety Requirements for Scaffolding

Occupational Safety and Health Administration, Department of Labor, 29 CFR, 1910.27

Occupational Safety and Health Administration, Department of Labor, 29 CFR, 1910.28

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Revisions to ensure stepladders are in the full-open, locked position before use, both hands available for climbing and additional guidance for raising and lowering tools provided
03/03/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Reviewed no content revisions. Changed CD # from 10,048 to UPS-US-SW-GOM-HSE-DOC-00118-2. Changed 3 authorities and 1 custodian name.
01/28/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.





## GoM Safe Practices Manual (SPM) - Lifting Operations

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00245-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	06/01/08	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	05/01/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter describes the requirements for safe operations of cranes. Cranes shall be operated in accordance with the requirements set forth in this policy, relevant regulatory requirements, latest edition of API RP 2D (Recommended Practice for Operation and Maintenance of Offshore Cranes) and the Oil & Gas Producers International Lifting & Hoisting Safety Recommended Practice. The GoM SPU Lifting Specialist is responsible for maintaining this policy to reflect BP's requirements and current industry standards.

The Offshore Installation Manager (OIM) and Well Site Leader (WSL) are accountable for implementation of this policy.

This policy applies to all GoM lifting operations on "BP owned facilities" or on "BP managed facilities". This policy does not apply to the following operations:

- Forklift operations
- Drill floor operations such as crown block, traveling block, and top drive operations
- Goods and personnel elevators
- Anchor handling, marine towing and routine onboard operations on support vessels not directly associated with facility operations
- Earth moving equipment
- Helicopter lifting operations
- Offshore facility survival craft/Fast Rescue Craft (FRC)
- Chain falls, come-a-longs or chains

**NOTE:** All personnel are authorized and obligated to exercise Stop Work Authority when they identify unsafe crane and rigging operations.

No one shall override a decision by the crane operator or boat captain to cease crane and rigging operations they deem unsafe.

### B Overview

This policy is intended to set out the principal BP GoM operational requirements that shall be met for BP lifting activities as well as Contractor's lifting activities on BP sites.

The requirements for safe lifting operations are:

- Planning
- Control of Work (CoW)

- Competency of personnel
- Equipment
- Inspection, maintenance, and certification
- Load integrity and stability
- Lifting of personnel
- Monitoring and audit

## C Roles & Responsibilities

Roles	Description
Offshore Installation Manager (OIM)/ Facility Manager/ Well Site Leader (WSL) or Designee	<ul style="list-style-type: none"> <li>• Has overall responsibility for the site and for applying safety management systems</li> <li>• Authorizes or designates a PIC who has the required competence and will be positioned onsite to control the lift safely</li> <li>• Authorizes or designates lifting equipment operator</li> <li>• Shall confirm authorities are notified if an incident or accident occurs</li> </ul>
Person in Charge (PIC)	<ul style="list-style-type: none"> <li>• Onsite responsible person to coordinate, control, and execute the lift</li> </ul>
Designated Signaller	<ul style="list-style-type: none"> <li>• Is designated by the PIC</li> <li>• Is the sole signaller at any given time</li> <li>• Has direct line of sight of the load. (Note: Blind lifts may require more than one signaller)</li> <li>• Adheres to a clear process, including confirmation of handover by PIC and operator, if a handover to another signaller is required</li> <li>• Does not perform rigger duties while load is suspended</li> <li>• Is clearly identified, by distinctive clothing</li> <li>• Shall stay with the load until the load is safely landed and/or relieved by another signaller (i.e., signaller on a boat or lower level)</li> </ul>
Crane Operator	<ul style="list-style-type: none"> <li>• Shall have authorization to use the equipment</li> <li>• Is responsible for pre-use inspection of the lifting appliance</li> <li>• Is responsible for using the equipment properly</li> </ul>
Rigger	<ul style="list-style-type: none"> <li>• Works under direction of the PIC to hook/unhook, sling, and handle loads at lower than waist height</li> <li>• Provides minimal necessary load handling; shall never attempt to stop a swinging load manually</li> <li>• Utilizes load tag lines only as determined by JSEA and lift plan</li> </ul>
All involved personnel	<ul style="list-style-type: none"> <li>• Shall understand their role and be competent to do it</li> <li>• Shall inform the PIC if conditions change</li> <li>• Shall be trained per GoM Lifting Policy</li> </ul>

## D BP GoM Lifting Policy

### D.1 Planning

- A Job Safety and Environmental Analysis (JSEA) is required for all lifting operations. If the lift deviates from the plan, STOP the job, and make it safe
- An assessment of the lift and determination of the lift method, equipment, and number of personnel required are critical to planning the lift
- BP GoM Offshore lifts fall into two categories: Routine and Critical. Each category requires a different level of documentation and control based on complexity and potential severity. Lifts will be categorized, planned, and carried out according to the appropriate documentation and controls provided in Table 1;

Table 1: Lift Categorization and Requirements Table

Definition of Lift Category	Required Documentation and Control
<b>Routine Lifts</b>	
<ul style="list-style-type: none"> <li>• Within the normal operating parameters of the lifting equipment</li> <li>• Lifting over non-sensitive areas</li> <li>• Suitable environmental conditions</li> <li>• Within operational skill level of the Crane Operators</li> <li>• Load has typical shape and configuration with appropriate center of gravity</li> <li>• Standard rigging arrangements</li> </ul>	<ol style="list-style-type: none"> <li>1. BP GoM SPU Lifting JSEA includes onsite pre job review</li> <li>2. Review questions for a safe lift</li> <li>3. Identify the (person in charge) PIC on the JSEA (e.g., Crane Operator, Deck Foreman)</li> </ol>
<b>Critical Lifts</b>	
<p>Lifting of personnel for work activities (I.E. Personnel Work Basket)</p> <ul style="list-style-type: none"> <li>• Approaches the operating limits of crane (Heavy Lift - 80% of the crane's rated capacity)</li> <li>• Approaches the limit of the operational skill level of the Crane Operator</li> <li>• Tandem lifts</li> <li>• Within sensitive, difficult, or restricted areas</li> <li>• High wind, sea/swell state, high cargo cost, risk (fire, explosion, and dangerous cargo) as defined by facility management</li> <li>• Non-standard rigging or load arrangements</li> <li>• Subsea lifts</li> <li>• SIMOPS or other operations that conflict with operations</li> <li>• As locally determined by facility management</li> </ul>	<ol style="list-style-type: none"> <li>1. BP GoM SPU Lifting JSEA includes onsite pre job review</li> <li>2. Review questions for a safe lift</li> <li>3. WCC (Work Control Certificate)</li> <li>4. Identify the PIC on the lift plan (e.g., Operations Supervisor, Crane Operator, Deck Foreman, or other supervisor)</li> <li>5. Specific engineering input (if required)</li> </ol>

### **D.1.a Lift Plan**

All lifting operations shall have a BP GoM SPU Lifting JSEA Plan that documents the job scope, hazards, risks and controls of the operation. The detail required is related to the risk and complexity of the lift. A JSEA will be required for critical and routine lifts. The BP GoM SPU Lifting JSEA Plan shall be used for critical lifts and all sections must be completed. Routine lifts may complete Sections 1 through 5 and Section 8 of the BP GoM SPU Lifting JSEA plan or use a routine JSEA in. BP GoM SPU Lifting JSEA Plans for routine operations shall be periodically reviewed and updated (i.e., moving equipment around on deck, boat loading and unloading). Facilities may use GoM SPU Lifting JSEA Plans as a stand-alone document for assessing and planning lifting operations or it may be used as a guideline to complete the risk assessment using existing facility based JSEA tools (eg. ISSOW). The BP GoM SPU Lifting JSEA Plans may be appropriate for multiple similar lifts associated with a task (e.g. moving equipment around on deck, boat loading & unloading).

The Lift Plan shall address, but not be limited to, the following:

- Person in Charge (PIC) of operations, number of personnel required, their roles, and responsibilities
- Configuration/weight of load and lifting points
- Pick-up and set-down areas with any constraints such as space and stacking
- Equipment required and certification
- Step-by-step instructions
- Communication to be used
- Emergency and rescue plans
- Restrictions on lifting operations, e.g., weather, lighting, sea state
- Access and egress for slinging and un-slinging the load
- Simultaneous, conflicting or nearby operations
- Work Control Certificate (WCC) (if required)
- Load integrity checks
- An assessment of whether tag lines should be used, their hazards and limitations
- Before lifts are conducted, all personnel involved in the lift team should review the "Questions for a Safe Lift"

### **D.2 Control**

- One person in the lift team shall be designated as the PIC of the lifting operation
- The PIC shall review the lift plan and confirm that the required controls are in place and that the lift is carried out in accordance with the BP GoM SPU Lifting JSEA Plan
- The PIC confirms that the lift team has tested and understands visual or radio communications prior to the lift
- All personnel involved in the lifting operations shall have their individual responsibilities clearly allocated
- All people shall be kept clear of overhead loads and areas of potential impact
- Manual load handling shall not be used to stop a swinging load and shall only be performed below waist height
- No one shall stand or work directly below a load. Physical barriers may be required to maintain this separation

### D.2.a Person in Charge (PIC)

The PIC has operational control of the lift. The PIC:

- Is designated as being in charge of onsite coordination, control, and execution of the lift
- Reviews the BP GoM SPU Lifting JSEA Plan and confirms that the required controls are in place
- Confirms that the lifting equipment is inspected and appropriate for use
- Assures that load integrity and stability is satisfactory
- Confirms that BP employees and contractors involved are: competent to perform their task, aware of the task and procedures to be followed, and aware of their responsibilities
- Briefs BP employees and contractors involved in or affected by the lift on the plan and "Stop the job" responsibilities
- Confirms the lift is carried out consistent with the BP GoM SPU Lifting JSEA Plan. Stops the lift if changes or conditions (e.g., wind, personnel changes) occur that would cause a deviation from the plan
- Monitors the performance of all involved personnel to confirm that adequate standards of performance are maintained
- Manages any special issues such as language barriers and new/inexperienced personnel
- Checks that there is no deviation from standards for routine lifts
- Will coordinate concurrent or simultaneous operations that may affect or be affected by the lift, e.g., helicopter operations, ballast control, other crane movement

### D.2.b Conducting the Lifting Operation

The PIC will ensure that lifting operations shall be conducted in accordance with the BP GoM SPU Lifting JSEA Plan.

The following are requirements for conducting the lifting operation:

- Responsibility for lifting operations shall be the PIC of the lifting operation that is designated by the OIM/WSL or designee. Ownership of the lifting operation will begin when lifting activities commence with the vessel, not as the vessel enters the 500-meter zone. The vessel captain will maintain ownership and control of the vessel at all times
- The OIM/WSL or designee shall, at all times, continue to hold ultimate authority for the safe execution of all activities on their respective facilities
- The Crane Operator shall obey an emergency stop signal at all times, no matter who gives it
- The load to be lifted shall be confirmed as within the rated capacity of the lifting equipment and attached by means of suitable lifting accessories
- The operator of the lifting appliance shall not leave the operating controls while the load is suspended
- Personnel shall not undertake more than one task at a time, e.g. the signalman shall not handle suspended loads and signal at the same time
- All personnel and third parties shall be kept out of any area where they might be struck or crushed by a load or lifting equipment if it swings, shifts or falls. No one shall stand or work directly below a load. Physical barriers may be required to maintain this separation
- Operators shall never move a load or crane boom directly over people
- Personnel shall have an escape route in case of an unexpected movement of the load or equipment
- Manual load handling shall not be performed to stop a swinging load and shall only be performed when load is below waist level

### D.2.c Minimum personnel requirements for marine transfers

- A minimum of five competent personnel (including the PIC) is required for all marine transfers (i.e. a crane operator, a designated signalman, a rigger on the vessel, as well as a designated signalman and a rigger on the facility.) A minimum of three competent personnel (including the PIC) is required for crane material transfers within the facility (i.e. a crane operator, a designated signalman and a rigger). (Note: critical lifts may require more personnel)

### D.2.d Communication

Before starting lifting operations, the PIC will hold an on-site pre-job meeting to explain the BP GoM SPU Lifting JSEA Plan to each person on the lift team to confirm their understanding of the plan and hazards involved. A loading/offloading sequence shall be established for all marine vessels prior to starting the lifting operations. This sequence will then be communicated by the PIC of the lifting operation to the captain of the vessel to ensure all are in agreement with the plan. The PIC of the lifting operation, the crane operator and the boat Captain will be jointly responsible for determining when to begin loading & unloading operations. The PIC or OIM/WSL shall retain the right to shut down crane operations, but will not override a decision to suspend crane operations made by the crane operator or boat captain.

- Particular attention needs to be placed on verifying the effectiveness of communications for blind lifts (e.g. designated channels on radio for the operation)
- A designated signalman shall be assigned. Signals between the lifting appliance operator and the designated signalman shall be discernable - audibly or visually - at all times. When using radio communication, continuous verbal instruction shall be used. The operator shall stop whenever there is no clearly understood signal
- Two-way radio communication is required between the vessel captain, crane operator and designated signalman on the back deck of the vessel during marine transfers
- The PIC and the designated signalman shall be identified and documented on the lifting JSEA plan and be communicated to the lift team and personnel in close proximity to the lift. The designated signalman shall be clearly identified by high visibility vest or hardhat cover that is different from the red vest of the fire watch

**NOTE:** Operating cranes is prohibited while a helicopter is landing, taking off, or running on the heliport

## D.3 Competency of Personnel

All offshore personnel shall have sufficient training and experience to be competent to carry out their role. PIC, riggers, designated signalmen and crane operators shall be qualified and trained as per the current edition of the American Petroleum Institute, Recommended Practice 2D (API RP 2D) within the last two years.

Supervisors of crane operators and/or riggers will have successfully passed an American Petroleum Institute, Recommended Practice 2D (API RP 2D, current edition) training course and are required to re-fresh every 4 years.

## D.4 Equipment

Specific items to be addressed by each facility:

- Facility lifting equipment shall be recorded in a facility equipment register. Lifting equipment comprises lifting appliances (equipment performing the lifting), lifting accessories (devices

that connect the load to the lifting appliance) and lifted equipment (i.e. containers, baskets, etc.)

- An ISO/Connex shipping container without pad-eyes are not designed for offshore crane or marine cargo lifts and shall not be used. ISO/Connex shipping containers that have been re-engineered with certified lifting pad-eyes and certified are acceptable for marine lifts
- All lifting points shall be certified
- Suspension points for sheaves in winch systems should be rated to withstand the maximum credible winch pull
- Marine cargo transfer lifts using the crane auxiliary hoist line will utilize a stinger (length 10-15 feet) to prevent headache ball contact with marine riggers hooking/unhooking loads on vessel decks
- All crane stinger hooks shall be of the "closed" type safety hooks. The closed type hook has a smooth profile, which will not easily become snagged or fouled during lifting operations, and incorporates an offload release trigger mechanism together with an on load automatic latch
- Equipment for lifting people shall be fitted with two distinct mechanisms for preventing the load from falling, one of which shall be a self-acting fail safe. Any freefall capability shall be positively locked out

### ***D.5 Inspection, Maintenance and Certification***

BP GoM facilities will maintain a register of lifting equipment. Cranes and lifting equipment will be maintained as per the American Petroleum Institute, Recommended Practice 2D (API RP 2D) current edition and BP maintenance schedules.

General facility and cargo slings shall be certified annually at a minimum.

Lifting equipment utilized for lifting personnel and personnel transfers shall undergo a detailed thorough examination at a minimum of every 6 months.

Users of lifting equipment must carry out a pre-use inspection to ensure the equipment is suitable for the task, has not been damaged and is correctly installed.

Equipment that has been involved in any of the following shall be examined equivalent to an annual inspection:

- An incident (lifting incident or damage sustained during storms, e.g., hurricane)
- Overload
- Subject to modification or major repair to components in the load path or other safety critical components
- Changes in condition or use including periods out of service, etc

### ***D.6 Load Integrity & Stability***

All offshore cargo will be preslung prior to loading onto transport vessels. All cargo will be slung as per "GoM Certified Sling and Rigging Procedure" and will meet the "BP Cargo Manifesting and Material Identification Procedure"

The load itself shall have sufficient integrity to withstand the lifting forces to which it will be exposed.

Rigging methods must be used which ensure the load remains stable and does not tip, slip, swing or fall. If necessary, stability should be checked by a limited trial lift.

Cargo in containers shall be secured so that it does not shift during lifting.

There will be no stacking of containers, baskets or tanks unless prior approval has been obtained from the OIM and the following requirements are met:

- Equipment is specifically designed for that purpose and suitable for stacking on facilities operated by BP or on BP-contracted facilities
- Stacking is confined to pre-designated areas
- Risk assessment of stacking operations is performed and documented showing that the risk involved in stacking and destacking is less than the risk of alternative approaches
- Stacked containers must have an additional pennant line so that the crane hook can be attached/detached while the rigger is standing at deck level
- Stacking and destacking shall be controlled by a WCC (Work Control Certificate)

### ***D.7 Lifting Personnel for Work Activities, Excluding Personnel Transfer***

Lifting of personnel shall be avoided, unless it is the lowest risk option. All personnel lifts shall be classified as a critical lift and be subject to stringent planning and controls, and written authorization by the OIM or designee. Before lifting personnel, the PIC shall sign the BP GoM SPU Lifting JSEA Plan to confirm that all involved personnel have been trained and understand the operation and the risks involved. A specific BP GoM SPU Lifting JSEA Plan is required to be followed for each personnel lift. For lifting of personnel, only dedicated man-riding winches shall be used, a dedicated man rider can be used to move light loads around the rig floor, but recommended use is only for personnel. The "IADC, Step Change", or equivalent guidelines shall be followed.

### ***D.8 Personnel Transfer by Lifting***

The standard for personnel transfers on "facilities owned by BP" shall be of the X-904 style transfer device. Personnel transfer by lifting shall not be permitted in hours of darkness unless specifically approved by the OIM or designee and supported by the BP GoM SPU Lifting JSEA Plan and assessment of alternatives. Pick up/set down areas shall be of an adequate size and free from hazards affecting access and egress from the carrier. Emergency rescue provisions will be included in the BP GoM SPU Lifting JSEA Plan.

### ***D.9 Monitoring & Audit***

Periodically, but no less than weekly, facility leadership shall perform Safety Observation Conversations (SOC) and site inspections of lifting operations to ensure lifting operations are in compliance with the BP GoM Lifting Policy. SOC's shall be documented in Tr@ction so that trends can be tracked.

## **E Key Documents**

BP Golden Safety Rules - Lifting

American Petroleum Institute API RP 2D Operation and Maintenance of Offshore Cranes

OGP Safety Committee Task Force on Lifting and Hoisting - OGP Report 376

GoM Certified Sling & Rigging Procedure

GoM Cargo Manifesting and Material Identification Procedure

GoM Lifting Gear Inspection and Maintenance Requirements

Example Equipment Registry

BP GoM SPU Lifting JSEA Plan

Questions for a Safe Lift



**Revision Log**

Revision Date	Authority	Custodian	Revision Details
05/01/09	GoM HSSE Director	GoM HSSE Programs Manager	Section D.1.a, Lift Plan – 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> sentences – Replace with new statement with would describe when an JSEA will be used when lifting.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Revised to ensure compliance with BP's Lifting Golden Rule, regulatory requirements, latest edition of API RP 2d (Recommended Practice for Operation and Maintenance of Offshore Cranes) and the Oil and Gas Producer's International Lifting and Hoisting Safety Recommended Practice Roles and responsibilities for GoM SPU Lifting Specialist, OIM and WSL clarified Scope of practice clarified Definition of routine and critical lift and required planning/documentation clarified Addition of GoM SPU Lifting JSEA



## GoM Safe Practices Manual (SPM) - Management of Change (MOC)

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00082-3

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	03/15/04	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	12/11/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter outlines the Management of Change (MOC) process.

The duration of a MOC may be permanent, temporary, or emergency.

### B Definitions

Definitions Table

Term	Definition
Emergency Management of Change (MOC)	Any change necessary to remedy an emergency that poses imminent impact to safety, health, or the environment. Emergency MOCs demand an immediate response
Permanent MOC	Any change to equipment, materials, systems, procedures, personnel, etc., that affects the original/current design intent, specifications, practices, or organization
Replacement In Kind (RIK)	A replacement that satisfies the original design specification and includes changes that use the same size, material, style, type, range, chemicals, control, operations, and procedure
Technical Authority (TA)	Persons with specific discipline expertise appointed by the Engineering Authority (EA)
Temporary MOC	Any change that is for a specified time period and is not intended to be permanent

### C General Requirements

Any deviations from GoM Safe Practices require a written Management of Change (MOC).

The MOC process addresses the management of risks from the following types of changes:

- **Technical** - permanent or temporary changes to an existing facility or process or a deviation from the documented design limits

- **Administrative** - permanent or temporary change to a policy, procedure, process, or form that affects process safety and integrity management
- **Organizational/personnel** - permanent or temporary change in the organization or personnel with specific knowledge or experience who supervise or operate a facility which would lead to a loss of knowledge or experience

MOC does not include changes that are Replacement In Kind (RIK).

## **D Exploration and Production Integrity Management (E&P IM) Minimum Requirements**

GoM shall develop and maintain a single MOC system. An annual audit of the MOC system shall be performed by the EA or delegate.

Each MOC shall include the following:

- Clearly defined and documented procedure
- Roles and responsibilities for each step in the MOC procedure
- Risk assessment of the proposed change by knowledgeable personnel
- Requirements that shall manage identifiable risks
- Specification of the timeframe for the change
- Review of the impact of the change on emergency response plans
- Assessment of the need for a Pre-Start Up Safety Review (PSSR)
- Review and approval of proposed changes as per Appendix I, MOC Delegation of Authority

An MOC shall confirm that:

- Changes accomplish their original intent
- Changes are correctly executed
- Specified actions are closed out

MOC is a system to evaluate, authorize, and document all changes before they are made and to confirm that the operational and HSSE risks arising from proposed changes are managed to an acceptable level. The MOC process also provides an excellent communication tool to inform impacted personnel of the appropriate details of a change.

## **E Procedures**

The process to manage each change is structured into the stages described in the following sections. Applications requiring formal MOC vary widely, as described in the scope of this document and as illustrated in the GoM MOC Workflow Process.

### **E.1 Initiate**

The MOC process begins when an individual identifies the need for a change. This person is known as the Initiator. After an Initiator proposes an MOC, they shall:

1. Develop and communicate the scope and justification for the change
2. Identify the type and duration of the change
3. Identify the expected start up date
4. Clearly communicate to the Verifier/Coordinator a description of, and a reason for, the change if the initiation of the proposed change is not the result of the Request For Action (RFA) process

**NOTE:** Administrative and organizational MOCs do not require an RFA.

5. Assemble the available supporting data/information and include it with the proposal to aid in decision rationale

## **E.2 Verification**

If the initiation of the MOC is not the result of the RFA process, the Verifier will determine if an MOC is required or if it is a RIK.

The MOC verification process is as follows:

- If the MOC process does not apply, the Verifier shall notify the Initiator of the decision rationale
- If an MOC is required, a cross-discipline team of reviewers shall be identified by the Verifier. The number and qualifications of team members depends on the scope of the proposed change. The reviewers should be experienced with the equipment, practices, and process changes under consideration. The review team will include, as a minimum, a technical reviewer, an operations/maintenance reviewer, an HSSE reviewer, and any others with specific expertise necessary for a complete review.
- Verifier identifies the type of hazard assessment, confirms the assessment is conducted to identify the HSSE and operational risks related to the change, and develops action plans to eliminate or mitigate these risks. Proposed changes may be subject to a What-If Hazard Analysis. For more complex changes or changes that affect safety systems, a Hazards and Operability (HAZOP) study may be required as part of a formal project safety review. The level of detail for each review should be appropriate for the complexity of the proposed change and for the potential hazards the change poses. Guidelines to assist in completing basic hazard reviews are listed in the Guidelines for Performing Hazard Reviews.
- Verifier identifies the person accountable for coordinating the completion of the PSSR, and identifies the PSSR action items based on complexity of the change
- Verifier identifies post-start up action items

**NOTE:** Action item additions for both the PSSR and the post-start up can be made by the review team members, the approvers, and the authorizer.

## **E.3 Review**

When a proposed change has been identified as applicable to MOC, it shall be evaluated for potential technical, HSSE, and regulatory implications by a Reviewer.

- The available supporting data/information is provided by the Initiator for formal review. Examples include:
  - Codes and standards
  - Design specifications and accepted engineering practices
  - Redlined P&IDs, PFDs, operating procedures, and maintenance procedures
  - Hazard assessments (What-If, HAZOP, blast analysis, dropped objects studies, etc.)
  - Vendor data and layout drawings
  - HSSE and regulatory documentation
  - Consideration of the impact to future operations
  - Deviations from Engineering Technical Practices (ETPs) or Site Technical Practices (STPs) (require EA approval) and deviations from Site Operating Procedures (SOPs) require Line Operational Leadership approval
  - Documentation of rejections by the review team
    - All affected personnel will be advised of the rejection rationale

Review team members are responsible for documenting and formally acknowledging their review and concurrence with the technical, HSSE, and regulatory aspects of the proposed change.

If a change will require a deviation from STPs or industry standards, the change shall be subject to the review by the governing TA/EA. Any deviation from STPs or industry standards shall be approved, documented, and maintained in a register by the EA for STPs or Operational Leadership for operating procedures.

#### ***E.4 Management Approval***

Final approval of MOCs shall be the responsibility of the manager in charge of the affected facility or their designee. All MOCs shall have management approval before changes are initiated.

#### ***E.5 Pre-Start Up***

A formal PSSR shall be completed and documented for all technical MOCs to verify that the change was completed as intended and that the change can be safely started or implemented. Exceptions to the PSSR requirement are permitted for documentation changes and personnel changes. The complexity of the change will determine the scope of the PSSR. As an alternative, a PSSR checklist can be developed that is specific to a change for this documentation requirement. The alternate PSSR checklist used to verify a change that can be safely started or implemented shall be included in the MOC documentation.

#### ***E.6 Authorization to Start Up***

The BP manager in charge of the affected facility or their designee shall authorize implementation/start up of the change. Authorization to implement/start up the proposed change is contingent upon verifying that all identified PSSR action items have been completed or closed out.

BP management team members shall then schedule and start up or implement the change. If the change is temporary, prescribed time limits shall be set. The time limits and any other stipulations of the temporary change shall not be violated.

#### ***E.7 Post-Start Up***

Closure of an MOC shall not be made until relevant documentation is updated and made available to Operations. Examples of relevant documentation include: P&IDs, cause-and-effect/SAFE charts, area classifications, and procedures. Superseded documents shall be withdrawn from circulation.

#### ***E.8 Close Out***

After the change has been implemented or started-up, the Verifier/Coordinator ensures the following;

- changes were performed as intended, (construction is in accordance with design and all required verification testing is complete and acceptable).
- all post startup action items have been completed or closed out (all recommendations/deviations are closed and approved by the designated technical reviewer (referred to as technical authority gHSEr 6.1))
- Once all post-startup action items are completed and filed with the MoC, only then shall the MoC be closed.

### **E.9 Record Retention**

At a minimum, the MOC form, with approvals and all required documentation for that particular change, shall be kept in a central location for a minimum of five years for each facility, unless stipulated otherwise by legal, regulatory, or compliance guidelines.

### **E.10 Emergency Changes**

In an emergency, it may be necessary to carry out a modification or procedural change before normal MOC procedures can be followed. In these cases, the change shall be permitted only on the verbal authority of the manager in charge of the affected facility or their designee and only following completion of a risk analysis. Emergency changes are subjected to the normal MOC procedures and documentation at the earliest possible time that the emergency situation reasonably allows.

## **F Key Documents**

The following key documents, tools, and reference material support this chapter:

GoM RFA Workflow Process

Examples of Change

Examples of Replacement in Kind

Guidelines for Performing Hazard Reviews

Process Hazards Analysis Risk Matrix

HSE and Regulatory Review Checklists

Delegation of Authority

Revision Date	Authority	Custodian	Revision Details
12/11/08	GoM HSSE Director	GoM HSSE Programs Manager	Clarification and further definition of close out requirements in Section E.8.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Minimum requirements for each MoC as defined by the IM Standard added Pre-Start Up, Authorization to Start Up and Post Start Up sections added
06/28/07	Robert Peloubet	Vani Rao	Revised section 1.1 to include S&O Audit Finding requirement – Organizational changes should include any unfilled vacancy greater than 90 days Revised document Authority from GOMP Operations Manager to GOMP Engineering Authority Revised document Custodian from GOMP Integrity Manager to GOM Engineering Assurance Coordinator Revised Doc Administrator from Michele Strauss to GoM HSSE Doc Mgmt Administrator

Revision Date	Authority	Custodian	Revision Details
06/30/06	Tom Gray	Phil Clasen	<p>Revised title from GoM Deepwater Integrity Management (IM) Guidelines – Management of Change (MOC) to GoMP BU – Management of Change.</p> <p>Revised Scope from GoM Deepwater to GoMP only.</p> <p>Added responsibilities for Engineering and Technical Authorities as a new section 3.5 and changed Maintenance and Integrity Management Team to section 3.6</p> <p>Changed CD # from 1184 to UPS-US-SW-GOM-HSE-DOC-00082-3.</p> <p>Removed this item from key documents: Operations &amp; Deepwater Production &amp; Shelf Operations and Drilling Engineering Assurance Guideline – <u>EA/TA Guidance</u>.</p> <ul style="list-style-type: none"> <li>• Technical MOC requires an appropriate hazard assessment be completed and documented.</li> <li>• A cross disciplinary team review that includes engineering, operations and HSSE personnel is required and their concurrence documented.</li> <li>• Appendix A – MOC Process Flowchart – updated and now titled GOMP MOC Workflow Process.</li> <li>• Appendix B – was Guidelines for Performing Hazard Review (Now Appendix E) and Replaced with GOMP RFA Workflow Process</li> <li>• Appendix D – Examples of Change – now Appendix C</li> <li>• Appendix C – Risk Assessment Techniques for MOC – eliminated</li> <li>• Appendix E – Examples of Replacement-in-Kind – now Appendix D</li> <li>• Appendix E – Becomes <u>Guidelines for Performing Hazard Reviews</u></li> <li>• Appendix F – MOC Form – eliminated and replaced with new Appendix F – Process Hazards Analysis Risk Matrix</li> <li>• Appendix G – <u>HSE and Regulatory Review Checklists</u> – no changes</li> <li>• Appendix H – PSSR Checklist – updated</li> <li>• Appendix I – Delegation of Authority – updated</li> <li>• Appendix J – Hazard Review Statement – eliminated</li> <li>• Appendix K – Environmental Triggers – eliminated</li> </ul>
03/15/04	Jeff Hohle	Phil Clasen	Initial issue.



## GoM Safe Practices Manual (SPM) - Naturally Occurring Radioactive Materials (NORM)

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00121-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	06/10/05	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	10/01/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	10/01/12		

### A Purpose/Scope

The purpose of this chapter is to reduce occupational exposure to Naturally Occurring Radioactive Materials (NORM). This chapter and the GoM NORM Manual provide safe work procedures to be used when NORM is present at twice background. The three types of NORM of interest are Radium-226, Radium-228 and Radon-222.

### B Overview

NORM can be deposited as solids inside of down-hole equipment (tubing, landing nipples, sub-surface safety valves) and in fluid meters, separators, chokes, drains, and oil tanks. During production of gas and water, these materials can be transported to the surface, where they may be found as produced sands or scale inside heater treaters, separators, tubing, flow lines, pumps, filters, and, on rare occasions, inside short sections of process pipe downstream from elbows or transitions. NORM is most commonly found where there is a pressure drop, or change in velocity, or direction of flow.

#### B.1 Health Effects

NORM is primarily an internal hazard, with the highest health risk presented by ingestion, inhalation or absorption of radioactive materials. Although NORM does not usually present a significant external radiation hazard, there is some potential for external hazards in areas where NORM levels are very high (> 2,000 uR/hr).

Most NORM entering the body is deposited in the bones. Overexposure to radium has been associated with an increased risk of lung cancer and leukemia and does not "clear" from the body over time.

#### B.2 Regulatory Limits

NORM itself is not specifically regulated by Federal Agencies; however, a number of states have developed and instituted varying degrees of NORM regulations. The Minerals Management Service (MMS) has issued some guidelines in the form of Notice to Lessees (NTL's). Any material considered as NORM must be shipped according to Department of Transportation (DOT) regulations.



## C Key Responsibilities

Position	Responsibilities
Industrial Hygienist	SME and Custodian of the GoM NORM Manual
Offshore Installation Manager (OIM) or Their Designee	Compliance with the GoM NORM Manual
Personnel	Compliance with the requirements of the NORM Manual as they pertain to their job responsibilities
Supervisor	Compliance with the NORM Manual Understanding the hazards associated with work involving NORM

## D Training

All personnel who work with NORM-containing equipment and materials shall attend the appropriate level of NORM training:

- Personnel involved in activities with potentially NORM-containing equipment and materials (e.g., equipment inspections, equipment removal/demolition equipment maintenance such as cleaning, etc.) shall attend the BP internal NORM Awareness Training Class (e.g., NORM Awareness training obtained through CBT).
- Personnel responsible for gathering samples and/or conducting surveys with detection equipment shall complete a NORM surveillance course consistent with applicable state regulations. A refresher is required every 5 years.

**NOTE:** When survey readings indicate that NORM is greater than 2,000  $\mu\text{R/hr}$ , a licensed NORM contractor shall perform the work.

## E Procedures

Refer to the Naturally Occurring Radioactive Material [NORM] Manual found online at the BP GoM HSSE website. Also refer to GoM Waste Management Procedures web site.

## F General Requirements

- Prior to any work on or with equipment or materials that have the potential to contain NORM, a survey of the external surfaces of the equipment/material shall be conducted per the NORM Manual
- Personal Protection Equipment Requirements shall be identified on the Facility PPE Matrix as per the NORM Manual
- Any work on equipment, tubulars, vessels, or machinery reading 50  $\mu\text{R/hr}$  or greater requires specific work procedures. Consult with the GoM Industrial Hygienist or Waste Coordinator if any readings exceed twice background levels.
- In general, radiation exposure can be prevented or minimized by the following precautions:
  - Avoid direct skin contact with radioactive scale, solids, and liquids
  - Limit the number of workers in the work area
  - Prohibit eating, drinking, smoking, and chewing (gum or tobacco) in the work area

- Cover openings of NORM-containing pipe and equipment with thread protectors or other suitable coverings
- Use plastic ground covers when performing maintenance to facilitate clean-up operations and prevent exposure to the ground
- Dampen or wet NORM-containing material when possible to minimize the generation of airborne radioactive materials
- All workers conducting NORM surveys shall have a thorough understanding of the proper use and limitations of radiation survey instruments and be trained to conduct NORM surveys
- NORM-containing waste, materials and equipment shall have detailed storage, labeling, shipping, and disposal requirements
- No piping or equipment shall be sent for scrap disposal unless it has been cleared using the testing process outlined in the NORM Manual.

## G Key Documents

### GoM Naturally Occurring Radioactive Material (NORM) Manual

Revision Date	Authority	Custodian	Revision Details
10/01/09	GoM HSSE Director	GoM HSSE Programs Manager	Revised Sections B, D, E, and F to be consistent with current training requirements and the NORM Manual.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Short overview of the GoM NORM Manual
11/01/06	Stan Garner, Steve Tink, Curtis Jackson and Duane Kortsha	Jack Kogut	Converted from a GoM Document to a Regional NAG/GoM document. Changed the GoM Industrial Hygiene Coordinator title of custodian to Regional Industrial Hygiene Coordinator.
06/10/05	Stan Garner, Curtis W. Jackson, Ralph DeLeonardis, Bernie Herbert	Jack Kogut	Initial Issue as controlled document.



## GoM Safe Practices Manual (SPM) - Offshore Travel Requirements

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00136-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/06/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter establishes the minimum standards for successful completion of the GoM Offshore Travel Requirements.

### B General Requirements

All personnel traveling offshore to a BP managed facility are required to have the first four items listed below. Additionally, contractor personnel must comply with number five.

- Offshore water survival training
  - The training shall be completed every five years. Any deviation from this requirement shall require an MOC. The MOC shall be approved as outlined in the GoM MOC Delegation of Authority.
  - Offshore Water Survival Training vendors shall meet the following standards and criteria: All International Association for Safety Survival Training (IASST) Water Survival Course qualifications and requirements for Lead Instructors (at least one instructor) are current and available for review
  - Offshore Water Survival Training including Helicopter Underwater Egress Training (HUET) is required if personnel are being transported offshore by helicopter
- BP offshore orientation
  - Involves minimum HSSE requirements
- Transportation Worker Identification Credential (TWIC™) is required to work offshore on a BP owned Outer Continental Shelf facility as of September 25, 2008
- Current Government issued ID
- Safe Gulf or reciprocal program (contractor only)
  - International Association of Drilling Contractors (IADC)
  - Petroleum Education Council (PEC)
  - Offshore Marine Services Association (OMSA)
  - Associated Safety Councils (ASC)
  - Personnel working on contractor facilities and/or vessels are required to meet the minimum requirements set forth by that facility/vessel. All personnel flying to these facilities must have offshore water survival training including HUET.

## C Overview

BP and contractor personnel working offshore on a BP managed facility are required to attend an Offshore Water Survival Training course and BP Offshore Orientation prior to working offshore. Additionally, Safe Gulf training is required for contract personnel. It is the responsibility of the Contract Company to provide this training for their employees. Employees working on third contractor facilities/vessels must meet the requirements of that location.

**NOTE:** If BP employees who are not U.S. citizens are traveling offshore, they shall contact the BP Immigration Attorney to confirm compliance (Letter of Determination) with USCG regulation. Contract employees must contact the appropriate USCG sector office to obtain an exemption to travel offshore.

## D Key Responsibilities

Position	Responsibilities
Supervisors	<ul style="list-style-type: none"> <li>Confirms affected personnel comply with GoM Offshore Water Survival Training policy</li> </ul>
Contract Company	<ul style="list-style-type: none"> <li>Provides and/or confirms all their personnel attended an Offshore Water Survival Training and Safe Gulf equivalent type course prior to traveling offshore</li> </ul>

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Changed Title from Water Survival Policy to Offshore Travel Requirements but kept the same doc number Describes minimum requirements for Bp and contractor employees traveling offshore to BP or contractor managed facilities/vessels.
01/31/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Removal of 12 day exemption and 4 hour refresher for water survival. Changed CD # from 10,082 to UPS-US-SW-GOM-HSE-DOC-00136-2 to conform to new numbering nomenclature inside of the GoM HSSE doc base. Changed one custodian and 3 authority names.
05/08/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Revise Policy to include specific minimum training requirements and amend refresher-training frequency from 4 years to 5 years.
02/06/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Personal Protective Equipment (PPE)

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00124-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/29/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	07/16/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter describes Personal Protective Equipment (PPE) that is intended to protect, shield, or isolate personnel from hazards.

Engineering and administrative controls should be implemented, where possible, before PPE is used.

### B Definitions

Definitions Table

Term	Definition
Administrative Controls	Procedures and methods that significantly reduce exposure to hazards by altering the way in which work is performed; examples include employee rotation, job task enlargement, and adjustment of work pace
Engineering Controls	Design features of equipment that help reduce exposure to potential hazards either by isolating the hazard or by removing it from the work environment. Examples of engineering controls include mechanical ventilation and process enclosure
Personal Protective Equipment (PPE)	Personal Protective Equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to a variety of hazards. Examples of PPE include such items as gloves, foot and eye protection, protective hearing devices (earplugs, muffs) hard hats, respirators and full body suits

### C General Requirements

BP supervision shall confirm that appropriate PPE is available and worn properly by all personnel.

## **D Overview**

Supervisors are responsible for implementing and enforcing BP's PPE requirements. Personnel are responsible for using PPE appropriately.

## **E Procedures**

### ***E.1 Hazard Assessment***

A hazard assessment of the workplace shall be performed to determine if hazards are or may be present that necessitate the use of PPE (refer to 29 CFR 1910, Subpart I, Appendix B, to determine the proper method of conducting an assessment). Hazard assessments shall be referenced to determine proper PPE selection for work tasks. Hazard assessments shall be documented on a PPE matrix (See Table 1 in this chapter for an example of a PPE matrix).

**NOTE:** If a particular work task is not on the PPE matrix, then the JSEA may serve as a PPE hazard assessment.

### ***E.2 Certification of PPE Hazard Assessment***

A written certification containing the following information shall be prepared for each location or workplace:

- The location or workplace evaluated
- The name of the person certifying that the evaluation has been performed
- The date(s) of the hazard assessment
- A statement that identifies the document as a PPE hazard assessment

### ***E.3 Inspection and Use***

PPE shall be used in accordance with manufacturer's requirements. Visual inspection of PPE shall be conducted before each use.

### ***E.4 Training***

Personnel shall be trained in the following:

- When PPE is necessary
- What PPE is required
- How to properly put on, remove, adjust, and wear PPE
- Limitations of PPE
- Proper care, maintenance, useful life, and disposal of the selected PPE

Personnel shall demonstrate an understanding of the information in PPE training and the ability to use PPE properly before initial use in the workplace.

PPE re-training shall be performed when:

- There are changes in the workplace that make previous training obsolete
- There are changes in the types of PPE to be used
- There are inadequacies in the individual's knowledge of or use of the chosen PPE

Personnel training and understanding shall be documented in a training certification record that contains the name of the employee trained, the date(s) of training, and identification of the subject of training.

## **E.5 Requirements**

The following requirements apply to work tasks performed in operational areas such as production facilities, drilling rigs, shore bases, construction sites, etc. Administrative and clerical tasks in office settings normally do not require PPE. Maintenance and construction work tasks in office settings require applicable PPE.

Minimum PPE required on BP operations locations, consists of safety-toed shoes with a distinctive heel and oil-resistant soles (ASTM Z41), hard hats (ISEA Z89.1, Class E), and approved safety glasses with side shields (ASSE Z87.1).

Additional PPE will be required as directed by hazards associated with the work to be performed (e.g., hearing protection, face protection, fall protection, hand protection, etc.). See Personal Protective Equipment and site-specific PPE assessment for additional data.

### **E.5.a Foot Protection**

Safety-toed shoes/boots, shall meet the requirements of ASTM F 2412 and F 2413.

Shoes or boots shall have leather or rubber uppers, an oil-resistant sole, and a distinctive heel (defined as a raised section 3/8" - 1/2" across the entire heel).

### **E.5.b Eye Protection**

Safety glasses, with side impact protection, or goggles shall meet the requirements of ASSE Z87.1.

Operations that require additional eye protection shall be assessed on an individual basis.

Chemical handling may require the use of specific safety glasses/goggles per the MSDS and/or PPE Hazard Assessment.

### **E.5.c Face Protection**

During all operations involving grinding, chipping, buffing, or where material could separate and become a projectile, a face shield shall be worn in conjunction with safety glasses/goggles or per the local hazard assessment. Chemical handling may require the use of specific face shields per the MSDS or per the local hazard assessment.

### **E.5.d Flame Resistant Clothing (FRC)**

Flame Resistant Clothing (FRC) is required for all BP employees, contractors, and visitors when:

- Located on a production facility with hydrocarbon-containing equipment when in PPE-required areas
- An employee and/or supervisor identifies a site-specific job and/or area with potential exposure to flash/arc burn injuries (i.e., electrical circuit)

FRC is not required on drill ships/MODUs that are not located on a production facility unless conducting live well servicing, well testing or otherwise specified in local policies.

FRC garments shall comply with the requirements below:

- Fabric Weight: FRC material shall not be less than 4 oz/yd<sup>2</sup> (150 gram/m<sup>2</sup>)
- FRC materials shall comply with NFPA 2112 and tested to ASTM F 1930.
- Optional reflective stripes shall conform to the ISEA 107 Level 2

Treated Cotton or Nomex™ are acceptable FRC fabrics.

FRC shall be worn and maintained accordingly:

- Personnel shall wear FRC as the outer-most garments except when other personal protective clothing is required (e.g., chemical resistant suits, welder's leather, and personal flotation devices)
- External protective garments such as slicker suits shall be made of flame-retardant material
- Personnel shall not wear synthetic blends such as nylon, polyester, rayon, or polyethylene under FRC. Natural fibers such as cottons and wools shall be worn under FRCs
- Only long-sleeved FRC shall be worn in designated FRC areas/jobs. FRC shall cover the torso, arms, and legs (sleeves rolled down and body fully zipped or buttoned up).
- FRC shall be laundered, repaired, and taken out-of-service per the manufacturer's recommendations.

### E.5.e Hand Protection

Personnel shall use hand protection when performing jobs that expose the hands to absorption of harmful substances, cuts or lacerations, abrasions, punctures, chemical burns, thermal burns, and harmful temperature extremes.

Selection of hand protection shall be based on evaluation of the task being performed, conditions present, duration of exposure, potential hazards identified, and performance characteristics of glove material.

#### NOTE:

1. Refer to Table 2 (in this chapter) for types of job tasks that require hand protection to be worn and the proper selection of gloves for the tasks. Refer to Table 3 for types of job tasks that normally do not require gloves to be worn. The job tasks identified are not inclusive. Therefore, if a job task to be conducted is not listed and is not similar to the ones below, the person conducting the task shall discuss the requirements of hand protection with facility supervision.
2. Individual facilities may choose to implement more stringent hand protection program requirements. Deviations from this program are to be addressed through the GoM's Management of Change process.

### E.5.f Head Protection

Hard hats shall meet the requirements of ISEA Z89.1, Class E.

Users shall visually inspect their hard hats prior to each use per the manufacturer's recommendation. If a hard hat becomes brittle, cracks, or is otherwise damaged, it shall be replaced immediately. Painting of hard hats is prohibited.

Suspensions and shells shall be replaced per the manufacturer's recommendation.

#### NOTE:

1. MSA recommends that suspensions be replaced at least annually and that shells be replaced at least every 5 years.
2. The date stamp on hard hats is the date of manufacture, not the expiration date.

### E.5.g Hearing Protection

The hazard assessment shall identify areas where hearing protection is necessary and the type of hearing protection necessary. Various forms of hearing protection are available and shall be worn when noise levels of 85 dBA exist. Signs shall be posted where continuous noise levels are at 85 dBA or greater. Refer to the Hearing Conservation chapter, in the BP GoM Safe Practices Manual



### E.5.h Fall Protection

Refer to the Working at Heights chapter, in the BP GoM Safe Practices Manual, for information regarding fall protection.

### E.5.i Personal Flotation Devices for Over-Water Operations

The appropriate Personal Flotation Device (PFD) will be worn by all personnel as follows:

- U.S. Coast Guard Type 1 (PFD) shall be worn when transferring to and from boats to the facility via personnel basket
- Work Vest/Type 5 PFD, at a minimum, shall be worn while working on boats and barges
- When flying in aircraft over water, wear an FAA approved, inflatable PFD

Fall protection with flotation devices should be worn by all personnel working outside of handrails. See Working at Heights chapter of Safe Practices Manual for further detail.

Prior to each use, the user shall examine PFDs for deterioration or damage that might affect their strength and buoyancy. Defective PFDs shall be removed from service and either repaired or replaced.

## F Key Documents

Occupational Safety and Health Administration, Department of Labor: 29 CFR 1910.95, 1910.132, 1910.133, 1910.135, 1910.136, 1910.137, 1910.138; and 1926.104, 1926.105, 1926.556, 1926.605, 1926.951, 1926.959

ASSE Practice for Occupational and Educational Eye and Face Protection, Z87.1.

ISEA Standard Industrial Head Protection Z89.1

ASTM F 2412 Standard Test Methods for Foot Protection

ASTM F 2413 Standard Specification for Performance Requirements for Foot Protection

National Institute of Safety & Health (NIOSH) Respirator Certification Standard, 42 CFR part 84

ASTM D 120, Standard Specification for Rubber Insulating Gloves

ASTM D 178, Standard Specification for Rubber Insulating Matting

ASTM D 1048, Standard Specification for Rubber Insulating Blankets

ASTM D 1049, Standard Specification for Rubber Insulating Covers

ASTM D 1050, Standard Specification for Rubber Insulating Line Hoses

ASTM D 1051, Standard Specification for Rubber Insulating Sleeves

Table 1 PPE Matrix, Table 2 Hand Protection Program, and Table 3 Non Hand Protection Tasks follow:

## Chapter 26 – Personal Protective Equipment (PPE)

[illegible]

[illegible]

## F.2 Hand Protection Program

Table 2: Glove Selection

Job Tasks Requiring Hand Protection	Glove Selection				
	Cotton or Leather	Chemical Resistant (per MSDS) <sup>1</sup>	Welders/ Thermally Insulated	Cut Resistant (i.e., Kevlar)	Voltage Rated (per NFPA 70E) <sup>2</sup>
Abrasive Blasting	✓ leather				
Biological Substances – Exposure to (e.g., 1st Responders)		✓			
Chemical Handling (e.g., paints, solvents, additives, and acids)		✓			
Chipping, Chiseling, Grinding, Hammering, Scraping	✓				
Compressor/Pump/Engine/Crane – Maintenance	✓				
Cutting and Sawing	✓			or ✓	
Electrical Work	✓ non-energized				✓ energized
Food Preparation (cook using knife to cut food)				✓	
Heaters/Reboilers – Lighting of	✓ leather				
Housekeeping (moving equipment and debris)	✓				
Hydrocarbons, engine oils, fuels, lubricants –Exposure to (e.g., collecting process samples & pigging operations)	✓ if chemical resistant is not required	✓ based on exposure frequency and duration			
Ladders – Use of	✓				
NORM – Exposure to		✓			
Pipe/Tubing Handling, Cutting, Threading	✓				
Pressure Washing	✓ leather	✓ if using chemical additives			
Process Equipment Modifications – • Pressuring/de-pressuring lines and line breaking • Inserting/removing blinds, sight glasses, and gauges • Operating valves, orifice meters and controllers	✓				
Rigging loads for lifting operations Handling of wire rope	✓ ✓ leather				

Job Tasks Requiring Hand Protection	Glove Selection				
	Cotton or Leather	Chemical Resistant (per MSDS) <sup>1</sup>	Welders/ Thermally Insulated	Cut Resistant (i.e., Kevlar)	Voltage Rated (per NFPA 70E) <sup>2</sup>
Scaffolding – Erection and use of	✓				
Sharp Objects/Materials – Exposure to	✓			or ✓	
Temperature Extremes – Exposure to	✓		or ✓		
Tool Use (non-powered and powered)	✓				
Welding/Cutting / Brazing	✓fitters and helpers		✓welders		

Although BP encourages the use of hand protection while conducting work, the following job tasks may be performed without wearing gloves:

- Where the task being performed is considered low risk with respect to hand/finger injury potential
- Where the task being performed requires micro/precise movement of the fingers and the use of gloves could cause significant loss of dexterity

Examples of job tasks that normally do not require the use of gloves are listed in Table 3 below.

Table 3: Non Hand Protection Tasks (not inclusive)

Job Tasks Not Requiring Hand Protection	Specific Examples
Activities conducted inside of living quarter, control room, and break room settings	Office work, eating, smoking, etc.
Walking between buildings and/or across decks (same or different levels) without manipulating equipment	Visual surveys, sketching equipment layouts, conducting clipboard/paperwork activities, placing weight indicator stickers on loads for back loading onto boat, taking meter readings, etc.
Working with small hardware and equipment	1/4" bolts/nuts/screws/pins, tube fittings and ferrules, Teflon tape, wiring connections, adjusting programmable flow meters and level controllers, etc.
Using fine instruments and electronics	Multi-meters, Pride Route meters, gas meters, cameras, two-way radios, etc.
Donning PPE	Hearing protection, fall protection, cleaning safety glasses, SCBAs, respirators, etc.

Revision Date	Authority	Custodian	Revision Details
07/16/08	GoM HSSE Director	GoM HSSE Programs Manager	Changed references to correct industry standards and specifications listed Sections E.5 and F.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Electrical protection section moved to Electrical Safety practice
06/09/06	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Kathy Kanocz	Modified PPE Matrix. Incorporated new sections 6.1 Appendix A - PPE Matrix and 6.2 Appendix B - Hand Protection Program. Added definition for a distinctive heel in foot protection section. Added Flame Resistant Clothing (FRC) section and Personal Floatation Devices (PFD) section. Deleted Today's Vision information and authorization form. Changed CD # from 10063 to UPS-US-SW-GOM-HSE-DOC-00124-2 to conform to new numbering nomenclature in the new GoM HSSE doc base. Changed 3 authorities and 1 custodian.
05/02/03	S. Garner/ B. Herbert/ R. DeLeonardis/ S. Flynn	Ray Britt	Changed the vendor, address and phone number information in the table on page 4 and added the a BP GoM Today's Vision Safety Glasses Authorization Form that the employee is required to complete and get signed by a BP Safety Representative to go to Today's Vision and order safety glasses; also changed one authority.
01/29/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Pipe and Vessel Purging

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00566-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	06/01/08	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter outlines minimum requirements for Purging Operations that are used either to clear in-service lines of hydrocarbons or for commissioning open lines to evacuate the oxygen prior to introducing hydrocarbons. The most appropriate method shall be chosen from those described below.

### B Definitions

Definitions Table

Term	Definition
Affected Employees	Individual who operates or uses a machine or equipment on which servicing or maintenance is being performed under lockout or tagout conditions or whose job requires them to work in an area in which such servicing is being performed
Isolator/Authorized Employee	Individual who is authorized to lockout or tagout machines or equipment in order to perform servicing or maintenance on those machines or equipment
Lower Explosive Limit (LEL)	Minimum concentration of a particular combustible gas or vapor necessary to support its combustion in air
Lockout	The placement of a locking device on an energy isolating device confirming that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed
Upper Explosive Limit (UEL)	Maximum concentration of a particular combustible gas or vapor necessary to support its combustion in air

### C General Requirements

Prior to Purging Operations, all Affected Employees shall understand the potential hazards associated with Purging Operations. Some examples are:

- The use of natural gas to purge systems of oxygen
- The use of nitrogen or an inert gas to purge hydrocarbon gas

- Pressure of the system being purged
- Contaminated fluids being flushed through the system
- Potential for 100% LEL during the purging process

## D Key Responsibilities

Position	Responsibilities
Isolator/Authorized Employee	<ul style="list-style-type: none"><li>• Prior to Purging Operations, shall confirm all Affected Employees understand the potential hazards associated with Purging Operations (e.g., the use of natural gas and nitrogen as ways of purging hydrocarbon systems)</li><li>• Verifying that the equipment to be purged has been de-pressurized and brought to a zero energy state before commencement of work</li></ul>
Issuing Authority	<ul style="list-style-type: none"><li>• Confirming the Isolator/Authorized Employee is aware of and understands potential hazards associated with Purging Operations</li><li>• Confirming all equipment and energy sources are properly locked and tagged out prior to starting work</li></ul>

## E Procedures

### E.1 Methods of Purging

#### E.1.a Pressurization Purging (Blowdown)

Pressurization purging (blowdown) is the process of introducing a purge gas to increase the system pressure to 15 psig, followed by depressurization to the atmosphere. The pressurization purging method is considered superior to other purge methods.

This procedure empties the vessel and purges the vapor space in the same process (e.g., pressure vessels, manifolds, and entire plant or platform process systems).

A minimum of four pressure-depressure cycles at 15 psig will be required to purge a vessel at atmospheric pressure.

If a system filled with a combustible liquid needs to be emptied and then purged, a purge gas may be applied to the vapor space at a pressure consistent with equipment design limitations.

#### E.1.b Displacement Purging (Slug)

Displacement purging (slug) is the process of introducing an inert purge gas until a buffer or separation zone is established, followed by the introduction of a chase gas of a different type. The slug shall be of sufficient volume to prevent the original gas and chase gas from mixing. Slow flow rates are used for the inert gas slug and the first portion of the chase gas. The flow rate can then be increased for the remaining chase gas if laminar flow is maintained to avoid mixing (e.g., pipelines).



In-service hydrocarbon gas may be purged by an inert gas slug followed by compressed air. A line that has been opened to air can be purged with an inert gas slug that is followed by natural gas.

### **E.1.c Dilution Purging (Sweep-Through)**

Dilution purging (sweep-through) is the process of introducing a purge gas at one opening and letting the system contents escape through another opening at the opposite end of the system. This is the least economical purging method.

Consider siphon purging instead of dilution purging for thin-walled vessels and tanks or pressurization purging for pressure vessels (e.g., produced water tanks).

### **E.1.d Siphon Purging**

Siphon purging is the process of filling the system with a liquid and introducing a purge gas into the vapor space to replace the liquid as it is drained from the system. The volume of purge gas required will be equal to the volume of the system, and the rate of application can be made to correspond to the rate of draining, plus any effects from temperature change (e.g., pressure vessels and tanks).

### **E.1.e Water Flush**

Water flush is primarily used to clean in-service lines prior to Hot Work or system entry. This involves filling and flushing the system with water to remove residual hydrocarbon from the pipe, vessel, or process component walls. Soap may be added as an agent to enhance the removal of the residual hydrocarbon.

## **E.2 Restoring Service to Equipment After Purging**

After work is completed, the work area shall be inspected by the Isolator/Authorized Employee to confirm that the work area is cleaned of liquid hydrocarbons.

## **E.3 Precautionary Considerations**

Purging of piping open to the atmosphere should continue until the residual air and purge gas has an oxygen level below five percent when using an inert purge gas. When using a hydrocarbon sweep-through purge, the atmosphere shall have an oxygen concentration below one percent.

**NOTE:** When testing the atmosphere, confirm that all personnel understand the potential for an oxygen deficient atmosphere and other LEL issues when purging with hydrocarbon gas.

Natural gas shall be vented away from fired vessels, compressors, electric motors, etc. Vent gas to the low-pressure vent system or flare to prevent a build-up near equipment or personnel. Purging to a flare requires the use of inert gas in order to prevent oxygen/hydrocarbon mixtures developing inside the flare header.

**NOTE:** Inert gas is an asphyxiant. Prior to entry, refer to the Confined Space Entry program for details.

LEL monitors are limited in their ability to accurately read levels of combustible gas above the Upper Explosive Limit (UEL) or in low oxygen levels. Verify that low or zero readings are not being caused by the absence of oxygen or by high combustible gas levels.

Channeling can occur in large enclosures. Similar situations can occur in pipelines with elevation changes. When channeling occurs, the purge gas may not sweep the entire vessel or

pipng system. In order to confirm that channeling is not occurring, sample the effluent at more than one vent point.

Residual liquids, rust, scale, or coatings on vessel walls can continuously release vapors into the enclosure. A single test of the atmosphere may indicate a full purge was accomplished, while later readings may indicate high levels. For this reason, continuous sampling shall be conducted at several sampling points.

When hydrocarbon gas is used to purge air, always limit the pressure to 30 psig or 1/10 Maximum Vessel Design Pressure, whichever is less. An internal ignition can generate pressures up to 10 times the pre-ignition pressure.

When returning equipment to service after purging, pressure staging shall be done gradually, in 10 psi increments, until 200 psi is reached. Thereafter, staging can be done in 25 psi increments until working pressure is reached.

Open piping may be purged with hydrocarbon gas when:

- A safe vent point is available
- The system being purged has minimal dead zones
- Compressors downstream are thoroughly purged or were not contaminated with air

When using steam as a purging agent, monitor system pressure frequently in order to avoid creating vacuums when the steam condenses.

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	Formatting and minor edits for clarification Key responsibilities revised to be consistent with COW terminology and roles and responsibilities.



**GoM Safe Practices Manual (SPM) - Potable Water**  
**Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00627-2**

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	09/17/03	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	12/15/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

## A Purpose/Scope

This chapter outlines requirements to provide Potable Water for personnel at GoM offshore facilities.

The GoM Offshore Production Facilities Potable Water Analysis and Inspection Program apply to both purchased water and onsite generated potable water because the same risks exist with both types. The procedures do not apply to unmanned platforms, drilling rigs or lift boats under contract to BP.

## B Definitions

Definition Table

Term	Definition
Coliform	Bacteria normally found in the colons of humans and animals. It should not be present in the food or water supply
Legionella	Bacteria that can cause Legionnaires Disease and Pontiac Fever.
Potable Water	Water that is used for drinking, bathing, cooking, food washing, dishwashing, bathrooms, eyewash stations, and safety showers

## C General Requirements

The program addresses requirements for:

- Recordkeeping
- Testing, treating, and storing Potable Water
- Marking and inspecting hoses and storage tanks

## D Key Responsibilities

Position	Responsibilities
Industrial Hygienist	<ul style="list-style-type: none"> <li>Subject Matter Expert</li> <li>Custodian of the GoM Offshore Production Facilities Potable Water Analysis and Inspection Program</li> </ul>
Offshore Installation Manager (OIM) or Their Designee	<ul style="list-style-type: none"> <li>Compliance with GoM Offshore Production Facilities Potable Water Analysis and Inspection Program</li> </ul>
Supervisors	<ul style="list-style-type: none"> <li>Compliance with GoM Offshore Production Facilities Potable Water Analysis and Inspection Program</li> </ul>

## E Procedures

Refer to the GoM Offshore Production Facilities Potable Water Analysis and Inspection Program on the GoM HSSE website. Potable water shall be tested according to the following table when contamination is suspected due to a change in taste, smell or appearance.

Table 1: Potable Water Testing Schedule

Water Supply	Frequency	Water Quality Test
Water supplied by municipal water source	Weekly	Free Chlorine (between 0.2 and 0.5 parts per million (ppm) at end user interface such as a faucet or shower head) Note: 1 ppm = 1mg/l.
	Monthly	Total Coliform Bacteria
	Annually	Legionella Bacteria
Water Generators	Weekly	Free Chlorine (between 0.2 and 0.5 ppm at end user)
	Weekly	If a location is using bromine (between 0.2 and 2.0 ppm at end user interface such as a faucet or shower head)
	Monthly	Total Coliform Bacteria
	Annually	Legionella Bacteria

### E.1 Chlorine or Bromine Testing

Potable Water shall be tested for free chlorine using a Hach Model CN 66F Test Kit or an equivalent. The recommended free chlorine level is between 0.2 and 0.5 ppm. For locations using bromine, a Pentair Water Treatment Part Number 169077 or equivalent shall be used. The recommended bromine level is between 0.2 and 2.0 ppm. All levels of chlorine or bromine should be measured at the end user interface such as a faucet or shower head.

Each location shall establish a testing schedule in order to maintain chlorine/bromine at the proper level. Each facility shall maintain test results for three years.

## ***E.2 Monthly Coliform Testing and Annual Legionella Testing***

Samples shall be collected and analyzed for total coliform and legionella bacteria per the testing schedule in Table 1. The sample(s) should be collected from an end-point of the water's distribution system, such as a galley faucet and/or the furthest quarter's faucet.

For coliform, analysis can be done in the field with a Colilert kit or by sending a sample to a microbiology lab. Contact the GoM Industrial Hygienist or GoM Water Specialist for assistance with selecting a lab or obtaining a Colilert Kit.

For Legionella, collect a sample or multiple samples and analyze for Legionella at least annually. Also collect samples for Legionella if free chlorine or bromine are found to be below 0.2 ppm or if a positive test for coliform is detected. Analysis can be done by sending sample(s) to an external lab certified for microbial water analysis.

### **E.2.a Positive Coliform or Legionella Testing**

If the sample tests positive for coliform bacteria or legionella:

- Follow the requirements of the GoM Offshore Production Facilities Potable Water Analysis and Inspection Program
- Contact the GoM HSSE Advisor and GoM Industrial Hygienist.
- Commence disinfection treatment
- Complete an incident report using Tr@ction

## ***E.3 Treatment for Chlorine Maintenance or Disinfection***

### **E.3.a Chlorine Maintenance Treatment**

Treat Potable Water to maintain chlorine at 0.2 to 0.5 ppm at the end user interface (e.g. faucet or shower head).

### **E.3.b Disinfection Treatment**

Disinfection treatment shall be performed:

- Before placing new Potable Water tanks and systems in service
- After flushing, cleaning or repairing existing Potable Water tanks
- Whenever a positive test is obtained on total coliform bacteria

## ***E.4 Hoses and Supply Vessel Tanks***

Hoses and supply vessel tanks for the delivery of Potable Water shall be dedicated exclusively for that purpose.

## ***E.5 Storage and Inspection***

Tightly cover storage tanks used for Potable Water and protect them from intrusion by rodents, birds, and insects.

Annually perform visual inspections of the potable water system using the GoM Potable Water System Site Survey Checklist (See Technical Reference) to ensure that interior surfaces are free of corrosion, algae growth, mold, and slime. If inspecting the interior of the storage tank is

not practical and introduces additional unacceptable risk, consult with the GoM Industrial Hygienist for further advice.

### E.6 Record Keeping

Document all disinfection treatments, maintenance chlorine/bromine treatments, free chlorine/bromine tests and coliform tests on the Potable Water System Record Form. Record the test date, test results, and the person performing the test. Use one form each month. Also document all legionella tests on forms provided by external laboratory.

## F Key Documents

GoM Offshore Production Facilities Potable Water Analysis and Inspection Program

OSHA 29 CFR 1910.141 - Sanitation

EPA 40 CFR 141 - National Primary Drinking Water Regulations

Potable (Drinking) Water System Record

Revision Date	Authority	Custodian	Revision Details
12/15/08	GoM HSSE Director	GoM HSSE Programs Manager	Changed Chlorine Max. level from 3.5 ppm to 0.5 ppm at end user interface to reduce confusion. Added annual Potable Water Inspection Checklist as an attachment. Added annual Legionella testing requirements.
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Provides a short overview of the GoM Offshore Production Facilities Potable water Analysis and Inspection Program
03/03/06	Ralph DeLeonardis, Stan Garner, Bernie Herbert and Curtis Jackson	Jack Kogut	Added information for water systems where bromine is used. Changed CD # from 10125 to UPS-US-SW-GOM-HSE-DOC-00001-3 to conform to new numbering nomenclature inside of the new GoM HSSE doc base. Changed 2 authorities. Changed revision date on GoM Monthly Potable (Drinking) Water System Record Form to match revision date of main procedure.
08/18/04	Ralph DeLeonardis, Steve Flynn, Stan Garner and Bernie Herbert	Jack Kogut	Added suggested procedure for testing for free chlorine and suggested procedure for testing for coliforms with Colilert Test Kit; and referenced in Section 6.0, three MSDSs for DPD Free Chlorine Reagent, Colilert ® and Colilert ® Comparator.
09/17/03	Ralph DeLeonardis, Steve Flynn, Stan Garner, Bernie Herbert	Jack Kogut	Initial issue.



## GoM Safe Practices Manual (SPM) - Radiation Source Handling

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00579-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	10/14/04	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter outlines requirements to reduce personnel exposure to ionizing radiation from radiation-producing machines and other sources of radioactive materials.

These requirements do not apply to background sources of radiation (e.g., Naturally Occurring Radioactive Material [NORM]). NORM is addressed in the NORM chapter of this manual and the NORM Manual found online at the BP GoM HSSE website.

### B Definitions

Definitions Table

Term	Definition
Background Sources of Radiation	Cosmic radiation or Naturally Occurring Radioactive Materials (NORM)
Controlled Area	An area, outside a restricted area, but inside the site boundary, to which access can be limited by the licensee for any reason
Ionizing Radiation	Charged particles (alphas, betas, positrons and protons), neutrons, gamma rays and x-rays capable of creating damage to human cells through the ionization of chemicals within the cell
Naturally Occurring Radioactive Materials (NORM)	Any material containing natural radioactive nuclides in concentrations consistent with those found in nature
Occupational Sources of Ionizing Radiation	Radiation-producing machines and radioactive source materials either present or used at BP locations or for BP operations (background sources of radiation are not occupational sources of ionizing radiation)
Radiation-Producing Machine	Any device with the specific purpose of creating ionizing radiation (e.g. X-ray units, X-ray fluorescence devices, radiation flow detection device and level detection devices, etc.)

Term	Definition
	<b>NOTE:</b> Electronic devices creating ionizing radiation as an indirect consequence of their operation are not classified as radiation-producing machines.
Restricted Area	An area, where access is limited by the licensee or registrant for the purpose of protecting individuals against undue risks from exposure to sources of radiation A restricted area does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area
Roentgen Equivalent Man (REM)	A unit of dose equivalent (Quality Factor X Absorbed Dose)
Teratogenic	Causing malformations of an embryo or fetus

## C General Requirements

Work involving the use of ionizing radioactive materials is typically conducted by a contract company. The responsibility for the radioactive material, implementing testing and exposure control measures, disposal, and decontamination of any associated equipment or the site is the responsibility of the contract company and shall be managed, at a minimum, in accordance with the regulatory requirements.

## D Overview

### D.1 Recognition of Hazards

#### D.1.a Sources of Ionizing Radiation

Manmade and enhanced radioisotopes are used by the oil and gas industry to:

- Explore for oil and natural gas
- Test pipes and welds, including structural cracks and stresses in equipment
- Test the thickness of metal products such as steel
- Identify density or level interfaces of substances

#### D.1.b Health Effects

Cancer is considered to be the primary health effect from long-term chronic exposure to low levels of radiation.

Unlike cancer, health effects from "acute" exposure to radiation usually appear quickly. Acute health effects include burns and radiation sickness. Radiation sickness is also called "radiation poisoning." It can cause premature aging or death. The symptoms of radiation sickness include: nausea, weakness, hair loss, skin burns or diminished organ function.



## E Key Responsibilities

Position	Responsibilities
Contractors	<ul style="list-style-type: none"> <li>Compliance with the requirements of the GoM Handling of Radioactive Sources Program</li> <li>Compliance with all regulatory requirements of federal and state agencies</li> </ul>
Industrial Hygienist	<ul style="list-style-type: none"> <li>Subject matter expert</li> <li>Custodian of the Handling of Radioactive Sources Program</li> </ul>
Offshore Installation Manager (OIM) or Their Designee	Compliance with the requirements of the GoM Handling of Radioactive Sources Program

## F Procedures

Refer to the Health Protective Measures and Handling of Radioactive Sources at the BP GoM HSSE website.

### F.1 Controlling Ionizing Radiation Exposures

Multiple methods are used to prevent personnel overexposure to ionizing radiation. These include complying with exposure limits, conducting workplace surveys, testing radiation sources for leaks, controlling the purchase and use of radioactive sources and complying with requirements for the safe storage of radioactive materials.

### F.2 Incident and Emergency Reporting

Any accident, injury, or loss of control of a radiation source that could cause an excessive or uncontrolled radiation exposure to any individual is considered a radiation emergency. The first action to take in any such emergency is to provide first aid to injured persons and/or prevent further injury. Persons should immediately leave the affected area until the extent of the radiological hazard has been determined, but should remain in the vicinity until they have been personally scanned for contamination. Immediately notify the Supervisor, HSSE Advisor and Industrial Hygiene Coordinator.

### F.3 Disposal

Contact the HSSE Advisor for transportation and disposal information. The BP GoM Environmental Group is an additional resource. Most special form materials should be returned to the manufacturer/origin for disposal.

### F.4 Training

All personnel whose work tasks may expose them to ionizing radiation shall receive General Awareness training. Those who may be exposed to levels above 5 REM per year, operate ionizing radiation devices, handle ionizing radiation sources or work within Restricted Area shall receive General Awareness training and additional Task and Exposure Control training.

### **F.5 Record Keeping**

The following records shall be maintained by the HSSE department:

- All survey and calibration records maintained for a minimum of three years
- All dosimetry records maintained for a minimum of 30 years
- Source leak tests maintained for five years
- Exposure monitoring and health records

## **G Key Documents**

GoM Health Protective Measures - Handling of Radioactive Sources

OSHA 29 CFR 1910.1096 - Ionizing Radiation

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Provides a short overview of the GoM Health protective Measures – Handling of radioactive Sources



## GoM Safe Practices Manual (SPM) - Respiratory Protection

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00581-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	11/01/00	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	08/31/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	08/31/12		

### A Purpose/Scope

This chapter provides the requirements for protecting personnel in environments with potentially harmful airborne contaminants and/or low oxygen concentrations. The first line of defense against harmful atmospheres is the use of engineering and administrative controls. Where such methods are not feasible, personnel shall use Respiratory Protection.

### B Definitions

Definitions Table

Term	Definition
Respiratory Protection Program	<ul style="list-style-type: none"> <li>A written Respiratory Protection Program that is available online at the GoM HSSE website</li> <li>The written program is evaluated annually for effectiveness</li> </ul>

### C General Requirements

This program applies to all BP GoM employees who are required to wear a respirator to perform assigned duties. Contractors who use respiratory protection equipment while performing work at BP GoM sites shall implement a written program that complies with the OSHA standard and the GoM Respiratory Protection Program (on the GoM HSSE website).

#### C.1 Site Specific Respiratory Protection Program

The site specific program shall be developed for each facility. The program shall be reviewed and documented annually. The template can be found online within the GoM Respiratory Protection Program.

#### C.2 Exposure Assessments

Respirators shall be selected for the hazards to which personnel may be exposed. Exposure assessments shall be performed to determine the need for and the type of respirator to be used. Atmospheres shall be considered to be Immediately Dangerous to Life and Health (IDLH) if no

exposure assessment has been conducted or a reasonable estimate of employee exposure cannot be made.

**NOTE:** Contact GoM Industrial Hygiene for exposure assessment and respiratory selection support.

### ***C.3 Voluntary Respirator Use***

Dust masks and tight fit respirators can be used voluntarily in non-hazardous atmospheres not requiring Respiratory Protection if the respirator use will not create a hazard for personnel and approval is first obtained from the HSSE Advisor. Personnel shall be medically cleared, trained, and respirator fit tested prior to using a respirator.

### ***C.4 Seal Checks and Inspection***

Each individual who uses a tight-fitting respirator shall perform a positive and negative pressure seal check each time the respirator is worn to confirm that an adequate seal is achieved. All respirators shall be inspected before each use, during cleaning, and after each use.

**CAUTION:** During cleaning and maintenance, respirators that do not pass inspection shall be removed from service and replaced or repaired immediately. The HSSE Advisor shall be contacted immediately **before** any item is replaced or repaired.

### ***C.5 Medical Evaluation***

Personnel shall be medically evaluated and cleared prior to respirator use since wearing a respirator may not be safe for individuals with certain medical conditions. Personnel shall complete a medical evaluation questionnaire annually and submit it to the BP Medical Department to receive respirator clearance. Respirator clearance shall be received prior to obtaining an annual fit-test and to wearing a respirator.

### ***C.6 Training***

Training shall be provided prior to respirator use and on an annual basis, as well as when there are significant changes in the workplace or the type of respirator used.

### ***C.7 Respirator Fit Testing***

Respirator fit testing is performed prior to respirator use and annually thereafter. Fit testing is required for voluntary use of a tight fitting respirator. Fit testing will not be performed on individuals who have facial hair that interferes with a good seal.

### ***C.8 Respirator Selection***

The type of respirator to be used shall be determined by the exposure assessment. Only respirators identified on the Facility PPE Matrix are permitted for use in facilities. For IDLH atmospheres, only full-faced positive-pressure (Self-Contained Breathing Apparatus (SCBAs) or supply air line positive pressure respirators with egress bottles are permitted for use. Compressed breathing air bottles shall meet grade D quality breathing air or better. Oxygen as the compressed gas is not permitted.

For information on types of respirators see the GoM Respiratory Protection Program.

### C.9 Maintenance

All respirators maintained for use in emergency situations shall be inspected at least monthly by the emergency response team (EMT) members and in accordance with manufacturers' recommendations. A visual and functional inspection of the regulator must be done by a certified technician. The inspection must be done at least every two years or more often as recommended by the manufacturer.

### C.10 Cleaning and Storage

Personnel are required to clean and disinfect their respirator after each use and place in a clean dry plastic bag or other container to protect against damage, contaminants, dust, sunlight, heat, extreme cold, excessive moisture and damaging chemicals.

## D Key Responsibilities

Position	Responsibilities
GoM Occupational Health	Evaluation and Approval of Medical questionnaire evaluations
GoM Industrial Hygienist	<ul style="list-style-type: none"> <li>• Subject Matter Expert</li> <li>• Custodian of the Respiratory Protection Program</li> </ul>
Offshore Installation Manager (OIM)	Compliance with the GoM Respiratory Protection Program
Personnel Assigned to Respirators	Compliance with the GoM Respiratory Protection Program

## E Key Documents

GoM Respiratory Protection Program  
GoM Site Specific Respiratory Protection Program Template  
GoM Hexavalent Chromium Protection Program  
ANSI 88.2 Standard Practices for Respiratory Protection  
OSHA 29 CFR 1910 Subpart I Personal Protective Equipment  
OSHA 29 CFR 1910.1020 Employee Exposure and Medical Records  
OSHA 29 CFR 1910.1026 Chromium (VI)  
OSHA 29 CFR 1910.1200 Hazard Communications Standard  
OSHA 29 CFR 1910.134 Respiratory Protection  
OSHA 29 CFR 1910.134 (a) (1) Ventilation  
USCG 33 CFR 142.39 Respiratory Protection

Revision Date	Authority	Custodian	Revision Details
08/31/09	GoM HSSE Director	GoM HSSE Programs Manager	Added Section C.9 regarding maintenance.
06/01/08	GoM HSSE	GoM HSSE	New chapter added to the revised SPM

	Director	Programs Manager	Short overview of the GoM Respiratory Program
01/31/06	S. Garner/S. Tink/C. Jackson, R. DeLeonardis	Kathy Kanocz	Reviewed no content changes. Changed 3 authorities and one custodian name. Changed CD # from 10069 to UPS-US-SW-GOM-HSE-DOC-00128-2.
02/05/02	S. Garner/B. Herbert/R. White/S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Scaffolds

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00131-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	01/31/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter describes requirements that apply to Scaffold erection, dismantling, and use. Scaffolds shall be erected and dismantled by contractors utilizing competent persons as prescribed in 29 CFR 1926, Subpart L.

### B Definitions

Definitions Table

Term	Definition
Boatswain's Chair	A single point adjustable suspension Scaffold consisting of a seat or sling designed to support one employee in a sitting position
Competent Scaffold Person	A person who is trained to identify hazards associated with Scaffolds and their use, has the authority to take action to correct deficiencies, and is trained in erecting the types of Scaffold being used
Guardrail System	Vertical barrier, consisting of but not limited to, toprails, midrails, and posts, erected to prevent employees from falling off a Scaffold platform or walkway to a lower level
Personal Fall Arrest System	A system used to arrest a fall. It consists of an anchor point, connectors, and safety harness. It shall also include a lanyard, deceleration device, lifeline, or combinations of these
Qualified Person for Scaffolding Purposes	One who by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problems related to scaffolding, the work, or the project
Rated Load	The manufacturer's specified maximum load to be lifted by a hoist or to be applied to a Scaffold or Scaffold component
Scaffold	Any temporary elevated platform (supported or suspended) and its supporting structure (including points of anchorage), used for supporting employees, materials, or both

## C General Requirements

Scaffold requirements:

- The design of any Scaffold erected or used shall meet the requirements specified in 29 CFR 1926, Subpart L, Appendix A
- Only the following types of Scaffolds shall be used:
  - Welded tubular end frame Scaffolds
  - Tube and coupler Scaffolds
- Scaffold equipment shall be assembled, used, and maintained in accordance with manufacturer's requirements
- The use of ladders as Scaffold components or supports for Scaffolds is prohibited
- The use of Ladder Jack Scaffolds is prohibited
- The use of single-point adjustable suspension Scaffolds, (i.e., boatswain's chairs) is prohibited unless their use is safer than all other methods. This safety determination shall be documented via a Risk Assessment. The use of homemade boatswain's chairs is prohibited. Any boatswain's chair shall meet all requirements of the OSHA regulations.
- The use of suspended Scaffolds supported only by counterweights is prohibited
- Each Scaffold shall be tagged with: rated load, installer, and installation date. Additionally, the tag shall be used to record daily inspections
- No Scaffold shall be loaded beyond its rated load capacity
- During Scaffold dismantling, lower Scaffold components to the ground in a manner that does not damage the component or endanger personnel

## D Overview

### D.1 Competent Person

Contractors performing Scaffold work shall have their own designated competent persons as required by 29 CFR 1926, Subpart L.

All competent persons shall receive specific training on the type of Scaffolding to be used before performing the duties of a competent person.

Scaffolds shall be erected, moved, altered, or dismantled only under the direction of a competent person. The competent person shall be physically present at the Scaffold during such work. A competent person shall be available on site at any time Scaffolding is in use in the event conditions change or the Scaffolding is moved or modified.

The competent person can have other duties, such as working on the Scaffold or other supervisory duties and verification of fall arrest anchor points.

### D.2 Qualified Person

The qualified person is responsible for the safe design of Scaffolds and for resolving problems associated with Scaffolds as required by 29 CFR 1926, Subpart L.

For Scaffolding purposes, a qualified person shall also have the skills and knowledge to utilize Appendix A of the OSHA regulations to design Scaffolds or verify that the design of a Scaffold is safe.



## E Key Responsibilities

Term	Definition
Competent Person	<ul style="list-style-type: none"> <li>Responsible for selecting the personnel (who shall be experienced) who will erect, move, alter, or dismantle Scaffolds</li> <li>Verifies training of personnel selected to perform the work (erect, move, alter, or dismantle Scaffolds)</li> <li>Responsible for training in this area</li> </ul>
Qualified Person	Responsible for the safe design of Scaffolds and for resolving problems associated with Scaffolds as required by 29 CFR 1926, Subpart L

## F Procedures

### F.1 Fall Protection

Adhere to the guidelines below concerning fall protection:

- Personnel on Scaffolds six feet or more above a lower level shall be protected from falling to that lower level. Fall protection shall be standard guardrails (Green tagged Scaffold only) or personal fall arresting system(s).

**NOTE:** When tying off to the scaffold, the proper anchor points shall be determined by the Scaffold competent person.

- While working outside of guardrails, 100% fall protection is required
- Whenever a personal fall arrest system is used, the anchor points for the system shall meet the requirements indicated in the Working at Heights practice
- Only full body harnesses shall be used for personal fall arrest systems. Body belts shall not be used.
- Standard guardrails shall be used instead of the "X" braces. For welded tubular end frame Scaffolds, the "X" braces alone do not provide an adequate guard rail system. When using the "X" brace, a top rail is required.
- Guardrails shall be of rigid material. Flexible materials such as fiber rope, wire rope, or chain shall not be used as guardrails.
- Fall protection is required for all scaffold access ladders over six feet (e.g., self retracting lifeline). This includes green tagged scaffolds.

**NOTE:** For details on fall protection, refer to the Working at Heights practice.

### F.2 Inspection

Scaffolds shall be inspected by a qualified or competent person at the beginning of each shift, after any modification of the Scaffold, or after any damage to the Scaffold. The inspection shall be documented on a tag attached to the Scaffold. The tag shall remain in place for as long as the Scaffold is in place.

If the Scaffold inspection indicates damage or an unsafe condition, the Scaffold shall not be used until it is made safe. This hazard determination shall be made by a competent person. A competent person shall be responsible for directing the repairs.

### ***F.3 Hazards***

A competent person shall assess the hazard presented by the wind, rain, lightning, etc. If the determination is made that weather conditions present a hazard, the competent person shall provide protection for affected personnel. That protection can include wind screens, personal fall arrest systems, or other appropriate means. If the weather conditions are deemed to be too dangerous to work safely on the Scaffold, the competent person shall stop all work and remove personnel from the Scaffold. The competent person shall utilize 29 CFR 1926, Subpart L, Appendix A, of the OSHA regulations to assist with the decision.

Personnel working on the Scaffold have a responsibility to stop work if weather or other conditions make it unsafe to continue.

The competent person shall determine that wind loading does not exceed the manufacturer's recommendations.

### ***F.4 Training for Those Working on Scaffolds***

Each employee who performs work while on a Scaffold shall be trained to recognize the hazards associated with the type of Scaffold being used and to understand the procedures to control or minimize those hazards.

Training shall be performed by a competent person knowledgeable in the subject matter of Scaffolds and Scaffold safety.

Training of workers shall be conducted in a manner that confirms understanding of the information by the workers.

At a minimum, training shall include the following:

- Nature of electrical hazards
- Fall hazards
- Falling object hazards
- Correct procedures for dealing with electrical hazards
- Proper Scaffold use
- Proper materials handling on the Scaffold
- Maximum intended load and load carrying capacities

### ***F.5 Training for Those Erecting/Dismantling Scaffolding***

Each employee who is involved in erecting, disassembling, moving, repairing, maintaining, or inspecting a Scaffold shall be trained by a competent person to recognize the hazards associated with the work. This training shall be conducted in a manner that confirms full understanding by personnel.

At a minimum, training shall include:

- Correct procedures for erecting, maintaining, and disassembling the falling object protection systems
- Correct procedures of erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the particular type of Scaffold being used
- Regulations and standards
- The nature of Scaffold hazards
- Design criteria

- Maximum intended load-carrying capacity
- Intended use of the Scaffold
- Scaffold foundations

**NOTE:** This training is different and more comprehensive than the training required for personnel working on Scaffolds.

## G Key Documents

Occupational Safety and Health Administration,  
U.S. Department of Labor, 29 CFR, Part 1926,

Part 1926.450, 1926.451, 1926.452, 1926.453, 1926.454,

Subpart C - Safety and Health Regulations for Construction, General Safety and Health Provisions

Revision Date	Authority	Custodian	Revision Details
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	Site-built wood scaffolds removed from list of scaffolding types that facilities can utilize. Use of ladder jack scaffolds is prohibited While working outside of guardrails, 100% fall protection is required Fall protection is required for all scaffold access ladders over six feet
01/31/06	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Kathy Kanocz	Changed CD # from 10,073 to UPS-US-SW-GOM-HSE-DOC-00131-2. Changed 3 Authority and 1 Custodian Name(s). No Content Revisions.
01/31/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Short Service Employee Program

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00407-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	04/15/05	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter describes the Short Service Employee (SSE) program whose purpose is to identify, appropriately supervise, and manage new or transferred offshore BP employees and contractors in order to prevent injury to these employees or others, property damage, or environmental harm.

Each contractor shall, in accordance with the Supplier Performance Management requirements, have a SSE program. BP and contractor employees who go offshore are required to have a minimum of six months of experience in their craft. If a contractor has a crew member not meeting this requirement, the situation shall be managed via Management of Change (MOC).

### B Definitions

Definitions Table

Term	Definition
Short Service Employee	<ul style="list-style-type: none"> <li>A person with less than six months experience in their craft, new to BP facility or offshore operations</li> </ul>

### C General Requirements

Steps will be taken to confirm safe integration of SSEs, including a proper on-site orientation and the use of high visibility orange hard hats for SSEs.

## D Key Responsibilities

Position	Responsibilities
Mentor (may be the same as the Site Supervisor in some instances)	<ul style="list-style-type: none"> <li>Teaches and coaches the SSE in his/her roles and responsibilities and safe work practices for all assigned duties; reviews the known potential hazards for the work to be performed</li> <li>Displays a positive work ethic and leads Health, Safety, Security, and Environment (HSSE) by example at all times</li> <li>Reviews the purpose of and how to participate in the development of a JSEA with the SSE</li> <li>Periodically observes SSE during tasks that are performed and provide adequate feedback by using the Safety Training Observation Program (STOP) and Safety Observation Conversation (SOC) techniques</li> <li>Provides prior approval for any new task initiated by the SSE</li> <li>Is knowledgeable of the appropriate BP and, where applicable, contractor policies, procedures, standards and expectations</li> </ul>
Offshore Installation Manager (OIM)/Offshore Platform Manager (OPM)/ Supervisor/ BP Site Supervisor	<ul style="list-style-type: none"> <li>Confirms that a site-specific orientation has been provided to the SSE by a knowledgeable, experienced person prior to the SSE's initial work assignment</li> <li>Assigns a mentor to the SSE from among the experienced crew members</li> <li>Accepts responsibility for the safety of an SSE assigned to their crew or area through example setting and observation</li> <li>Confirms JSEAs are utilized as a training tool with the SSE</li> <li>Provides coaching and informal feedback to the SSE about safe work practices</li> <li>Confirms contractor personnel are in compliance with contractor SSE requirements</li> <li>Conducts a review after six months to evaluate graduation from the SSE program; this can coincide with or be part of the existing six month performance review process for new personnel</li> </ul>
Short Service Employee	<ul style="list-style-type: none"> <li>Attends an offshore orientation prior to arrival and a site-specific orientation immediately upon arrival at their first field assignment and prior to performing any work</li> <li>Learns designated roles and responsibilities</li> <li>Adheres to all policies and procedures taught or shown to them</li> <li>Learns the location and application of all safety emergency response equipment (Material Safety Data Sheet [MSDS], fire extinguishers, eye wash stations, showers, emergency shutdowns, first aid kits, etc.)</li> <li>Actively participates in and reviews the JSEA for any task they are directed to perform</li> <li>Seeks assistance and guidance from the Mentor when uncertain</li> </ul>

Position	Responsibilities
	<p>about any part of the job or for a task never performed previously</p> <ul style="list-style-type: none"> <li>• Understands the obligation to stop work that is felt to be unsafe or is not understood, or when conditions have changed</li> <li>• Wears a high visibility orange hard hat at all times when working as an SSE</li> </ul>
Contract Companies	<ul style="list-style-type: none"> <li>• Shall have a Short Service Employee program</li> <li>• Shall provide Short Service Employee with an orange hardhat</li> </ul>

## E Procedures

### E.1 Orientation

All SSE personnel shall receive an offshore orientation and site-specific orientation prior to beginning work on location. The GoM Orientation Program outlines the orientation requirements.

### E.2 Mentoring SSEs

Each SSE shall be assigned a Mentor who is responsible for providing individual oversight and training. The mentor shall be knowledgeable of the appropriate BP and, where applicable, contractor policies, procedures and standards. No work shall be assigned to or initiated by the SSE without prior approval from the Mentor.

### E.3 Visible Identification

SSEs will be identified by a high visibility orange hard hat.

It will be at the discretion of the Site Supervisor as to how long an experienced SSE (but new to the facility) shall wear a high visibility hard hat.

### E.4 Completion of SSE Program

The Site Supervisor shall meet with the Mentor to discuss and document approval of the SSE's professional development after six months of hands-on experience. Discussions can occur earlier or beyond six months, at management's discretion, based upon the SSE's assignments and/or individual progress. To complete the SSE program, personnel shall:

- Demonstrate a working knowledge of the applicable BP/contractor policies and procedures
- Demonstrate knowledge of safe work practices and be receptive to constructive criticism for observed practices
- Improve or correct unsafe practices in a timely manner
- Apply accident prevention tools in a pro-active manner

## F Key Documents

Supplier Performance Management

GoM Orientation Program

Revision Date	Authority	Custodian	Revision Details
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Provides an overview for the following requirements: <ul style="list-style-type: none"><li>– Orientation</li><li>– Mentoring</li><li>– Identification (orange hard hat)</li><li>– Completion of Program</li></ul>
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Clarifications to program regarding visitors and transfer employees. Changed CD # from 10127 to UPS-US-SW-GOM-HSE- DOC-00407-2 to conform to new numbering nomenclature in the new GoM HSSE doc base. Changed 2 authorities.
04/15/04	S. Garner/ B. Herbert/ R. Deleonardis/ S. Flynn	Kathy Kanocz	Initial issue.



## GoM Safe Practices Manual (SPM) - Simultaneous Operations (SIMOPS)

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00678-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/01/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	07/17/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This section details the prerequisites and guidelines for the planning and execution of Simultaneous Operations (SIMOPS) to ensure the safety of personnel and protection of equipment and the environment.

SIMOPS shall be defined as conducting independent operations in which the events of any one operation may impact the safety of personnel or equipment or the environment of another operation. Typically this involves production operations, drilling operations, and project execution operations, but may include any incidence where concurrent operations create risk.

The SIMOPS prerequisites and guidelines detailed below apply to all operations in the GoM. This includes but is not limited to: topsides, subsea, drilling, completion, wellwork, construction, marine, and pipeline or production activities. This includes activities not only onboard a producing facility but any simultaneous operations that occur field- or lease-wide.

### B Definitions

Definitions Table

Term	Definition
SIMOPS	Conducting independent operations in which the events of any one operation may impact the safety of personnel or equipment or the environment of another operation
Marine Activity	Any and all activity related to BP's operations and use of floating production units or vessels whether on the high seas, coastal waters, in harbors or on inland waterways, including marine terminals
Marine Vessel/Unit	A generic term covering all vessels/units engaged in marine activity. Any vessel designed for the carriage of goods, equipment or people on the high seas, coastal waters or inland waterways, for the provision of services, or any offshore facility requiring positive buoyancy



Term	Definition
Risk Assessment	The process of estimating the likelihood that an incident will occur; estimating the magnitude of the consequential loss, including the environmental impact, and making a judgment as to the significance of the risk. The scale of the risk is a function of both likelihood and consequence. Refer to Integrity Management Standard Element 3 for further information on risk assessment methodologies

## C General Requirements

It is the intent of these guidelines to establish procedures for planning and coordination and outline rules to ensure that SIMOPS are conducted without incident.

### C.1 Field SIMOPS Plan

Each field in the GoM shall have an approved field SIMOPS plan. A "field" is defined as any BP-operated developing or producing operation. SIMOPS plans may be required for operations outside of a field where SIMOPS risks exist between concurrent operations.

This document should be kept evergreen and shall include:

- Field description or project area description (including all fixed obstructions, infrastructure, bathymetry)
- A field SIMOPS matrix (see **Appendix B in this chapter** for definitions of some example areas this should cover) that includes pre-risk assessed activities (see **Appendix C in this chapter** for an example matrix)
- Organization and Roles and Responsibilities
- Daily communications process specifying time and participants; the daily written report requirements and distribution must also be defined
- Key contact information

The plan shall include or reference existing procedures for:

- Description of emergencies and All Stop Criteria
- Emergency Response and Incident Notification Procedure
- Identification of Health, Safety and Environment (HSE) plan. If a contractor plan is being used, a bridging document must exist that reconciles the BP and contractor GoM HSE policies.
- Identification of Control of Work processes, including MOCs for change-out of key personnel

The plan should consider additional resources that may be required based on field activity complexity, such as a dedicated SIMOPS coordinator.

The field SIMOPS plan shall be in compliance with the MMS, Coast Guard, MMS approved Deepwater Operations Plan (DWOP) and class regulations.

Any deviation from or changes to an approved SIMOPS plan requires Management of Change with appropriate Line and Technical Authority sign-off. This should include the SIMOPS plan signature authority and should be communicated and understood by all affected parties (see Section E4.b).

Everyone has the duty to stop the job at any time the SIMOPS plan is not, or cannot be followed, or at any time the SIMOPS plan is not clear.

The appropriate Vice President or Asset Manager is accountable for ensuring this field SIMOPS plan is kept up to date and is the highest level of sign-off. This should be a controlled document stored in the appropriate document management database.

## **C.2 Adding an Activity to the Field SIMOPS Plan**

For each new activity which involves field SIMOPS the following documents are required:

- Work plan/plan and detailed procedure
- Risk assessment of that procedure, including risk assessment of SIMOPS
- A reference document that addresses the requirements outlined in Section C.1 above with particular emphasis on roles and accountabilities

## **D Roles and Responsibilities**

Proper coordination, communication and control are critical to the safe conduct of SIMOPS.

### **D.1 Development of Field SIMOPS Plan**

<b>Roles</b>	<b>Responsibilities</b>
Vice President or Asset Manager	<ul style="list-style-type: none"> <li>• Ensures that the field has a SIMOPS Plan</li> <li>• Final level of approval for the field SIMOPS plan</li> </ul>
Operations Support Lead or Equivalent	<ul style="list-style-type: none"> <li>• Accountable for additional activity approval</li> <li>• Field SIMOPS plan preparation</li> </ul>
Offshore Installation Manager	<ul style="list-style-type: none"> <li>• Accountable for field SIMOPS plan content</li> </ul>
Project Manager	<ul style="list-style-type: none"> <li>• Accountable for their project's additional activity SIMOPS requirements (per Section C.2) to supplement the field SIMOPS plan</li> <li>• Act as integrator, working with the Activity Person in Charge (see Section D.2) to ensure planned activities are aligned with the field SIMOPS plan in advance</li> <li>• Ensure planned field activities are included in the Integrated Field Planning (IFP) process</li> </ul>

### **D.2 Execution of SIMOPS Plan**

Each field shall appoint a field SIMOPS team. The field SIMOPS team shall include at a minimum the following individual roles and responsibilities.

<b>Roles</b>	<b>Responsibilities</b>
Vice President or Asset Manager	<ul style="list-style-type: none"> <li>• Ensures field SIMOPS plan is followed and is working</li> </ul>
Operations Support Lead or Equivalent	<ul style="list-style-type: none"> <li>• Accountable for allocating adequate resources to support the field SIMOPS plan</li> </ul>

Roles	Responsibilities
OIM/Field Person-in-Charge (FPIC)	<p>The Field Person-in-Charge (FPIC) is the BP Offshore Installation Manager (OIM) or BP Offshore Platform Manager (OPM) unless otherwise stated. This individual is accountable for execution of the field SIMOPS plan and will have complete control to determine which operation or phase of work has precedence at any given time. The FPIC shall communicate daily with the Activity Person(s)-in-Charge (APIC) with respect to field SIMOPS activity. The FPIC or designee shall communicate with each Vessel Person(s)-in-Charge (VPIC) upon entry and departure from the particular field</p> <ul style="list-style-type: none"> <li>• Accountable for execution of the field SIMOPS plan</li> <li>• Ensures that all key stakeholders (rig, vessel and facilities) are briefed and engaged, including contractors. Must have broad communications across the crews and shifts</li> <li>• Monitor daily field SIMOPS activity</li> <li>• Chair daily field SIMOPS review(s) (daily call)</li> <li>• Evaluate the risk of planned simultaneous operations and ensure mitigation plans are in place</li> </ul>
Project Manager	<ul style="list-style-type: none"> <li>• Facilitate the briefing and engagement of key stakeholders, including contractors, and report back to the OIM for approval that engagement has been adequate</li> </ul>
Activity Person-in-Charge (APIC)	<p>The individual accountable for executing a specific defined activity. The APIC shall communicate with the FPIC with respect to field SIMOPS activity. When a marine vessel/unit is a component of the activity, the APIC shall also be accountable for vessel coordination. The APIC shall communicate with the respective VPIC with respect to executing the marine activity. Examples of potential APICs are a Operations Support Lead or Equivalent, Well Site Leader or BP Representative on a vessel</p> <p>When a single vessel is performing the activity, the APIC may assume the additional accountabilities of the VPIC.</p> <ul style="list-style-type: none"> <li>• Monitor daily SIMOPS activity</li> <li>• Facilitate daily activity SIMOPS review(s)</li> <li>• Attend daily field SIMOPS review(s)</li> <li>• Ensure that risks associated with the planned operations are understood and communicated to the FPIC</li> <li>• Accountable for executing a specific defined activity. When a marine vessel/unit is a component of the activity, the APIC shall also be accountable for vessel coordination</li> </ul>
Vessel Person-in-Charge (VPIC)	<p>The individual aboard the vessel accountable for executing that specific vessel's activity under the direction of the APIC. The VPIC shall communicate with the APIC with respect to activity SIMOPS. The VPIC shall communicate with the FPIC prior to entry, upon entry and upon departure from the particular field. The VPIC shall also be accountable for monitoring onboard vessel SIMOPS and identifying and reporting any SIMOPS activity that may impact the vessel's ability to perform the intended work scope (activity). In some</p>

Roles	Responsibilities
	<p>circumstances the FPIC and APIC can be the same person; and the APIC and VPIC can be the same person. Examples of potential VPICs are a Well Site Leader, BP Representative on a vessel, MODU OIM, Captain, Mate or Dynamic Position Operator</p> <ul style="list-style-type: none"> <li>• Monitor daily vessel SIMOPS activity</li> <li>• Facilitate daily vessel SIMOPS review(s)</li> <li>• Attend daily activity SIMOPS review(s)</li> <li>• Attend daily field SIMOPS review(s) - upon request</li> <li>• Execute specific vessel activity under the direction of the APIC</li> </ul>
Officer-in-Charge	<p>The Officer in Charge of the navigational watch is the master's representative and is primarily responsible at all times for the safe navigation of the vessel. Examples of potential Officers in Charge are a MODU OIM, Captain, Mate or Dynamic Position Operator</p>
Field SIMOPS Coordinator (FSC)	<p>The FSC, if needed as an additional resource, shall provide support to the OIM and field SIMOPS team. Depending on the complexity of the activity set, the FPIC and asset management may determine a dedicated FSC is required</p>

## E Procedure/Process

### E.1 General Procedure

#### E.1.a Identify Scope of SIMOPS Activity

Each asset must have a process in place to clearly define a detailed work scope of the field SIMOPS activity to allow for an appropriate level risk assessment to be performed. The scope must be defined early enough so that the activity risk assessment can be referenced against the asset's scheduled work activities to ensure any known SIMOPS conflicts are addressed. The Integrated Field Planning (IFP) process may be utilized to satisfy the criteria and timescale for this advance notice requirement. A typical SIMOPS process flow chart is shown in **Appendix D**.

### E.2 Risk Assessment

An appropriate level risk assessment should be conducted and should include known SIMOPS risks by referencing the published field activity schedule. Refer to Integrity Management Standard Element 3 for further information on risk assessment methodologies. Some key SIMOPS risks would include dropped objects, vessel collision, aviation, construction (including subsea) diving, DP failure, and loss of containment of hydrocarbons. (Refer to **Appendix E** in **this chapter** for an example of a dropped objects prevention and mitigation plan checklist.)

A daily risk assessment discussion should also take place as part of the 24 hour look ahead during the daily SIMOPS meeting.

Additionally, a SIMOPS matrix (BP) or equivalent tool to evaluate risks shall exist for each SIMOPS plan.

### ***E.3 Risk Mitigation***

For risks identified in risk assessments, mitigation controls should be identified and put into place. Clearly defined All Stop Criteria (with defined approval authorities) should also be outlined as part of the risk mitigation process. In addition to mitigation controls resulting from risk assessments such as the Dropped Objects Study, the field SIMOPS plan shall include a process to mitigate risk on a daily basis. If additional risks are identified during the established, daily communications forum, mitigation controls must be executed before the activity can commence or continue. Identification of these mitigation controls may require a separate discussion outside of the daily communication forum.

### ***E.4 Communication/Training of Field SIMOPS Plan and Activity Specific Information***

No activity should take place prior to approval of the SIMOPS plan and appropriate communication and training. The field SIMOPS plan shall be reviewed with all project manager(s), the Operations Support Lead or Equivalent and the appropriate APICs and FPICs prior to execution of any SIMOPS activities. The field SIMOPS plan shall be inclusive of any activity specific information as defined in Section C.1. The review of the plan shall be completed as early as necessary to allow for a clear understanding of the risks and mitigation controls. If multiple shifts or crews will be engaged in this SIMOPS activity, then more than one review may be required to cover all crews/shifts.

#### ***E.4.a Communication during Execution of SIMOPS Activity Plan***

During the execution of the field SIMOPS plan for a SIMOPS activity, daily routine verbal and written communication must occur as defined in the plan. Participants should ensure all work groups clearly understand the scope of work that is forecast for the next 24 hours with an emphasis on SIMOPS risk mitigation. Ensure standing orders are in place for non-routine communications and provide clear instructions as to when to notify the FPIC.

#### ***E.4.b Changes to Work Scope***

Stop the job, assess the risks, and initiate an MOC, if required, for all changes in work scope after the activity risk assessment and approved mitigation controls have been established.

### ***E.5 Drilling, Completion, Remedial Rig Operations, or Well Maintenance near Producing Infrastructure***

#### ***E.5.a Potential Undesirable Events and Mitigation***

Well control is a primary concern during these operations. If there is difficulty in maintaining well control (e.g., unexpected pressures, gas cut mud, lost circulation, etc.), joint communications shall occur with all parties (production, drilling, etc.) to determine if production operations should be shut in. Well control procedures should be followed carefully.

**Note:** First priority must be given to controlling the well and to the safety of the personnel on board.

The greatest well control hazard is wellbore intersection with a producing well. Prior directional planning is intended to avoid this interference. The plan should be reviewed by the appropriate individuals (Wells Manager, Wells Program Manager, etc.).

Critical areas of SIMOPS are defined as areas in which explosive or ignitable mixtures are present or potentially present due to the release of flammable gases or vapors. During

simultaneous operations, care shall be taken to avoid potential sources of ignition and damage to equipment in such areas. Critical areas include the wellheads, mud tanks and pumps, shale shaker, degasser, desander, producing wells, and all equipment for field processing of oil and gas.

### **E.5.b Regulatory Requirements**

In addition to the above general requirements, the MMS has specific requirements for conducting rig operations in close proximity to production facilities and other hazards.

The regulation at 30 CFR 250.406 requires the shut-in of all producible wells located in the affected wellbay below the surface and at the wellhead when (1) a drilling rig or related equipment is moved on or off a platform, (2) a drilling unit is moved or skid between wells on a platform, or (3) a mobile offshore drilling unit (MODU) is moved within 500 feet of a platform. You may resume production once the MODU is in place, secured, and ready to begin drilling operations.

The Appendices to the Rig Move NTL No. 2004-G09 provide guidance on how to comply with 30 CFR 250.406. They describe the various types of rigs and phases of rig movement, specify when wells must be shut in, and delineate the documentation to be submitted to the appropriate MMS Gulf of Mexico OCS Region (GOMR) District Office to obtain approval for a departure under 30 CFR 250.142.

The Shallow Hazards NTL No. 2007-G01 includes requirements for moving rigs near pipelines and other seafloor hazards. This includes onsite preparation and rig move requirements.

### **E.5.c BP Requirements**

BP's Global Drilling and Well Operations Policy has specific requirements for conducting risk assessments prior to moving a rig onto an offshore location, conducting risk assessments for simultaneous operations and collision avoidance while drilling on multi-well locations.

### **E.5.d Best Practices**

A DP MODU Rig Move Best Practices document can be found in Appendix F in this chapter.

## **E.6 Marine**

SIMOPS involving marine vessels/units shall be managed consistent with the field SIMOPS plan.

### **E.6.a Identify Activity**

The field SIMOPS plan shall contain or reference a process for identifying and monitoring marine activity.

### **E.6.b Risk Assessment (Identify and Evaluate Risks)**

Collision is the primary SIMOPS marine risk. Any marine vessel/unit operating less than 500 meters from another marine vessel/unit or hazard to navigation shall be deemed a marine risk. Circumstances that may contribute to collision risk are vessel traffic density, environmental conditions (visibility, sea state, wind, and current), navigational aids status, vessel maneuvering characteristics and capabilities, temporary measures in effect, vessel position reference systems, acoustic management, vessel defects and other special circumstances. Details on marine SIMOPS guidance can be found in **Appendix G in this chapter**.

## **E.7 Subsea Operations**

Subsea operations may be conducted in the field to support any one of the following activities: construction, production, drilling, and seabed surveys. Each has a unique set of risks (e.g. collision, dropped object) to be managed via a SIMOPS plan.

### **E.7.a ROV Activities**

Remotely Operated Vehicles (ROVs) may be deployed from any one of the production facilities, Mobile Offshore Drilling Units (MODUs) or in-field vessels and could be in support of production optimization (valve operation), inspection, repair, or component replacement, maintenance and underwater construction. Typically this will be carried out at seabed facilities, risers, pipelines, dynamic umbilicals, moorings, floating hulls and jackets.

### **E.7.b Diving Activities**

Diving activities typically are required only for critical maintenance and inspection of near-surface facilities such as jacket structures, seachest valves, and riser porches. In addition to compliance with the field SIMOPS plan, to manage risk, diving operations will be performed in strict compliance with BP GoM Diving Procedures.

### **E.7.c Underwater Construction Activities**

This includes installation and recovery of risers, manifolds, pipelines, trees, flowline jumpers, umbilicals and associated sub-structures. This may be performed from and with a range of facilities and techniques.

### **E.7.d Survey Activities**

Surveys may be performed at the seabed typically by a number of vessel surface supported techniques, such as seismic, core sampling, route corridor surveys and metrology. In addition to ROVs, there are circumstances where non-surface connected autonomous ROVs may be deployed to carry out such functions.

## **F Appendices, Key Documents, Tools, References**

Section	Title
<a href="#">Appendix A</a>	SIMOPS Acronyms List
<a href="#">Appendix B</a>	Typical SIMOPS Activity Definitions
<a href="#">Appendix C</a>	Example SIMOPS Matrix (Atlantis)
<a href="#">Appendix D</a>	SIMOPS Process Flow Chart
<a href="#">Appendix E</a>	Dropped Objects Plan Guidance
<a href="#">Appendix F</a>	DP Rigs – Best Practices Check List
<a href="#">Appendix G</a>	Marine SIMOPS Risk Management

MMS 30 CFR Subpart 250

BP Drilling and Wells Operations Directional Survey Handbook

BP GoM Integrity Management Website

Revision Date	Authority	Custodian	Revision Details
07/17/2008	GoM HSSE Director	GoM HSSE Programs Manager	All corrections made were in Section F, including adding correct links to Appendices, deleting out-of-date references, and clarifying the titles of some of the references.
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	Key requirement is for each field to have an approved field SIMOPS plan More rigor and guidance for completing a SIMOPS plan added
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Clarified who is in charge when drilling and operations on same facility. Added example simops matrices – Atlantis and Na Kika. Added SIMOPS – Work Task Definitions. Changed CD # from 10074 to UPS-US-SW-GOM-HSE-DOC-00132-2 to conform to new numbering nomenclature inside of the new GoM HSSE doc base. Changed 3 authorities and 1 custodian.
02/01/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.





## GoM Safe Practices Manual (SPM) - Transportation of Hazardous Materials

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00135-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/06/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	05/01/09	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter provides a brief overview of the requirements regarding the Transportation of Hazardous Materials. It shall be used in conjunction with the BP GoM Waste Management Procedures and Title 49 of the Code of Federal Regulations. Contact your Department of Transportation (DOT) Specialist or the Environmental Coordinator in your Business Unit (BU) for questions on Hazardous Materials Transportation.

### B Definitions

Definitions Table

Term	Definition
Hazardous Material	<p>A substance or material determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety and property when transported in commerce, and which has been so designated under Federal Hazardous Material transportation law</p> <p>The Department of Transportation (DOT) publishes a table of Hazardous Materials in 49 CFR 172.101. Contact the location HSE Advisor or the asset EMS coordinator for further clarifications. Consult the GoM DOT Coordinator to resolve questions prior to classifying hazardous material</p>
HAZMAT Employer	<p>A company who uses one or more of its employees in connection with:</p> <ul style="list-style-type: none"> <li>• Transportation of Hazardous Materials in commerce</li> <li>• Causing Hazardous Materials to be shipped or transported in commerce</li> <li>• Representing, marking, certifying, selling, offering, manufacturing, reconditioning, testing, repairing, or modifying containers, drums, or packagings as qualified for use in the transportation of Hazardous Materials</li> </ul>

Term	Definition
HAZMAT Employee	A person who is employed by a HAZMAT Employer and who, in the course of employment, directly affects Hazardous Materials transportation safety
Hazardous Substances	<p>A substance that has a Reportable Quantity (RQ) limit as listed in Appendix A of 49 CFR 172.101. The RQ limit is the amount of hazardous substance which, if released, requires the notification of federal agencies</p> <p>The hazardous substance classification does not apply to petroleum products that are in the process of being used as lubricants or fuels, or to natural gas, LNG, or synthetic gas usable for fuel. For example, the gasoline in a vehicle's fuel tank is exempt from these requirements</p>
Hazardous Waste	<p>Any material that is subject to the Hazardous Waste Manifest requirements of the Environmental Protection Agency (EPA) as specified in 40 CFR Part 262</p> <p>Consult the GoM Waste Specialists or your asset EMS coordinator to resolve any questions prior to classifying a material as hazardous waste</p>

## C General Requirements

The DOT lists the substances that may pose a danger during transportation in the Hazardous Material Table at 49 CFR 172.101. This table is the starting point for identifying specific regulatory requirements associated with the transportation of a particular substance.

The DOT has very detailed regulations pertaining to the transportation of Hazardous Materials, which are found in 49 CFR Parts 171-180. These regulations address:

- Appropriate packaging and containers
- Labels and placards
- Shipping Papers
- Emergency Response Information
- HAZMAT employee training

In order to facilitate compliance with the DOT regulations, personnel directly involved in Hazardous Materials transportation safety shall receive training as HAZMAT employees in accordance with 49 CFR Part 172, Subpart H.

## D Overview

Supervisors are responsible for confirming that company policies and procedures and all applicable governmental regulations are followed when transporting Hazardous Materials.

### D.1 Appropriate Packaging and Containers

DOT approved packaging and containers (e.g., drums, barrels, tanks), meeting original design specifications, shall be used when transporting Hazardous Materials.

## ***D.2 Labels and Placards***

Packages and containers of Hazardous Materials shall be marked with labels and placards to indicate their contents.

Placards are large, brightly colored diamond shaped signs that are applied to all four sides of bulk shipments of Hazardous Materials. In general, placards show a symbol at the top indicating the type of hazard, a number at the bottom that indicates the DOT Hazard Class, and a description of the hazard ("Flammable"), or the UN Chemical ID Number in the middle.

Labels are similar to placards, but they are smaller and do not usually have the UN Chemical ID Number printed on them. Labels are used on non-bulk shipments of individual packages. The UN Chemical ID Number shall be written on the package near the Label.

## ***D.3 Shipping Papers***

A Shipping Paper shall accompany a Hazardous Material shipment. A Shipping Paper shall minimally include the following eight items:

1. **Proper Shipping Name** - The DOT name for the product, as found in Column 2 of the Hazardous Materials Table
2. **Hazard Class** - The general hazard category assigned to the substance, as found in Column 3 of the Hazardous Materials Table
3. **UN/NA Identification Number** - The UN standard reference number for the substance, as found in Column 3A of the Hazardous Materials Table
4. **Packing Group** - The Packing Group number, as found in Column 5 of the Hazardous Materials Table
5. **Total Quantity** - The weight or volume, as appropriate, for each Hazardous Material being transported
6. **Shipper's Certification** - A certification signed by a representative of the shipper which states, "This is to certify that the above named materials are properly classified, described, packaged, marked, labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation"
7. **Emergency Response Telephone Number** - A telephone number monitored at all times by a person knowledgeable in the characteristics of the Hazardous Material
8. For hazardous wastes, the shipment shall also include a uniform hazardous waste manifest which will be prepared in advance and coordinated by the GoM Waste Specialist

## ***D.4 Emergency Response Information***

Emergency Response Information shall accompany a shipment of Hazardous Materials. Since it is intended to be used in emergencies, the information shall be kept on the vehicle away from the Hazardous Material being transported.

Regardless of the format, the Emergency Response Information shall include:

- The basic description and technical name of the Hazardous Material
- Immediate hazards to health
- Risks of fire or explosion
- Immediate precautions to be taken in the event of an accident or incident
- Immediate methods for handling fires
- Initial methods for handling spills or leaks in the absence of fire
- Preliminary first aid measures

**NOTE:** Emergency Response Information may be provided using the Emergency Response Guide Book, information included on the Shipping Papers, or an MSDS.

### ***D.5 HAZMAT Employee Training***

A HAZMAT employee is a person who directly affects Hazardous Materials transportation safety. Typical duties performed by HAZMAT employees include:

- Loading, unloading, and handling of Hazardous Materials
- Manifesting, labeling, and placarding drums, or packaging as qualified for use in the transportation of Hazardous Materials
- Preparing Hazardous Materials for transportation
- Responsible for the safety of transporting Hazardous Materials
- Operating a vehicle used to transport Hazardous Materials

The DOT requires that HAZMAT employees be knowledgeable in the safety requirements associated with their duties. Training shall include general awareness components, function specific components as identified for roles and responsibilities, and general security awareness components. Additional personal safety and security training will be provided for personnel assigned specific roles.

**NOTE:** HAZMAT employees shall be trained initially and thereafter every three years for shipping by boat or land and every two years if shipping by air.

### ***D.6 Marine Transfer of Oil and Hazardous Substances***

Operations involving marine transfer of oil and hazardous substances shall comply with applicable governmental rules and regulations.

A material is considered oil or a hazardous substance if it meets specific criteria as defined by the EPA and the U. S. Coast Guard (USCG). Examples of oil are diesel fuel and oil-based drilling fluids. An example of a hazardous substance is zinc bromide.

Oil and hazardous substance transfer hoses shall be marked with an identifier and records shall be kept, including hose purchase date, pressure test dates (include certificates/test charts), and manufacturer/distributor information. Pressure tests shall be performed at 1½ times the maximum allowable working pressure. These hoses should be inspected/leak tested prior to each offload of hazardous product at the offshore facility to verify integrity.

**NOTE:** USCG regulations require that facilities with a capacity greater than 250 barrels of oil will have all hoses pressure tested annually at 1½ times the maximum allowable working pressure.

Requirements of hose use during transfer are as follows:

- All reasonable efforts shall be made to minimize the number of hose sections used. Preferably only one section, of proper length, should be used.
- Hoses shall be constructed using built-in or swaged fittings, when possible
- Loads on hoses during transfers shall be kept to a minimum
- Repaired or altered hoses shall not be used for transfer of oil and hazardous substances unless specifically approved by the BP representative
- Hoses shall be visually inspected, maintained, and stored properly
- Hoses shall be secured and lowered down to the vessel using polypro or nylon straps. Manila rope is not recommended due to rotting and wear, which is difficult to identify.

All personnel involved in the operation shall have the proper instruction in standard loading/unloading procedures, hazards of materials and equipment, and emergency procedures. MSDSs shall be readily available for all materials transferred.

**NOTE:** USCG regulations (46 CFR Chapter 1) require a Declaration of Inspection to be completed for transfers of oil or Hazardous Materials over 250 barrels.

Before a transfer begins, verbal authorization shall be given by the BP representative. Prior to authorization, the following items shall be inspected by the BP representative:

- Hoses, ropes, connections, and boat orientation in relation to current and weather conditions
- Pumps, tanks, valves, alarms, gauges and other equipment
- Communications equipment (i.e., radios)
- MSDS for materials transferred
- Emergency shutdown stations/switches
- Emergency equipment (i.e., fire extinguishers)
- Personal Protective Equipment

Marine transfer of hazardous substances shall only be performed in daylight hours, unless specific approval has been given by the BP representative.

Personnel performing the transfer both on the platform and on the boat shall have radios. There shall also be a separate person with a radio assigned to watch the Hazardous Material transfer hose during the transfer. This person will have no other duties.

Marine transfers of hazardous substances shall not be permitted during rough seas. Monitoring of weather conditions is the responsibility of the BP representative and/or the motor vessel captain.

During diesel transfers only, supply boats on long-term contract to BP shall be equipped with high and low-pressure alarms at the pump discharge to warn personnel of a change in pressure.

Marine transfer of oil and hazardous substances shall be halted upon any sign of leakage or discharge into the environment.

Tank levels shall be continuously monitored during the transfer operation.

## E Key Documents

Department of Transportation; 49 CFR various sections including but not limited to Parts 100-179, 391-397

USAG 30 CFR

EPA 40 CFR 262

46 CFR Chapter 1

GoM Operations Guidelines for Offshore Support Vessels

GoM Waste Management Procedures

Revision Date	Authority	Custodian	Revision Details
05/01/09	GoM HSSE Director	GoM HSSE Programs Manager	Section D.6, Marine Transfer of Oil and Hazardous Substances, 3 <sup>rd</sup> paragraph, starting with "Oil and hazardous substance transfer hoses...", 2 <sup>nd</sup> sentence, delete "after assembly by the supplier and prior to installation offshore" and end the sentence. Add another sentence stating "These hoses should be inspected/leak tested prior to each offload of hazardous product at the offshore facility to verify integrity."
06/01/08	GoM HSSE Director	GoM HSSE Programs Manager	New chapter added to the revised SPM Provides an overview for the following requirements: <ul style="list-style-type: none"> <li>- Appropriate packaging and containers</li> <li>- Labels and placards</li> <li>- Shipping papers</li> <li>- Emergency response information</li> <li>- HAZMAT Employee training</li> <li>- Marine transfer of oil and hazardous substances</li> </ul>
03/16/2006	S. Garner/ S. Tink/ C. Jackson/ R. DeLeonardis	Everette (Skipper) Payne	Added HAZMAT Employer and HAZMAT employee to definitions; modified most of the definitions; Added wording to the general requirements section of the document; Modified 6.0-1 Table; changed CD # from 10079 to UPS-US-SW-GOM-HSE-DOC-00135-2 to conform to new numbering nomenclature inside of the new GoM HSSE doc base; Changed 3 authorities and 1 custodian.
02/06/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.



## GoM Safe Practices Manual (SPM) - Working at Heights

Document Number: CD # UPS-US-SW-GOM-HSE-DOC-00087-2

<b>Document Authority:</b>	GoM HSSE Director	<b>Document Custodian:</b>	GoM HSSE Programs Manager
<b>Scope:</b>	GoM HSSE	<b>Doc Admin:</b>	GoM HSSE Document Management Administrator
<b>Issue Date:</b>	02/28/02	<b>Issuing Dept:</b>	GoM HSSE
<b>Revision Date:</b>	06/01/08	<b>Control Tier:</b>	2 – GoM HSSE
<b>Next Review Date:</b>	06/01/11		

### A Purpose/Scope

This chapter provides the requirements for Working at Heights greater than six feet or when working off the deck within six feet of a guardrail when there is the potential to fall to a lower level.

### B Definitions

Definitions Table

Term	Definition
Authorized Employee	The person assigned by their employer to perform duties at a location where the person will be exposed to a fall. The Authorized Person shall confirm that they have the proper training, knowledge, and experience to conduct the work they are assigned and to adhere to all fall protection policies/procedures
Competent Person	The person that confirms that the appropriate fall protection system is selected, maintained, used properly and that workers are trained in its proper use
Deceleration Device	Any mechanism, such as a self-retracting lifeline or shock absorbing lanyard, that serves to dissipate the force of the fall which would otherwise be imposed on the worker
Deceleration Distance	The vertical distance between the harness attachment point at the activation of the fall arrest equipment and that attachment point once the individual comes to a complete stop
Engineered Anchor Point	A secure point of attachment of lifelines, lanyards, or deceleration devices. Preferred over an improvised system as it is a tested system and has no associated guesswork regarding strengths. An engineered anchor point shall be designed to meet a safety factor of at least two

Term	Definition
Improvised Anchor Point	Improvised anchors are generally existing piping, structural beams, etc. The use and selection of improvised anchors require a degree of skill and training. Improvised anchors shall be able to support a minimum of 5,000 pounds and consideration shall be given to how the worker is to access the point of attachment, how the fall protection is to be connected, and the compatibility of other fall protection equipment prior to setup
Lanyard	A flexible line made from synthetic fibers with connectors at each end for connecting the safety harness to a deceleration device, lifeline, or anchor point
Personal Fall Arrest System (PFAS)	A system consisting of an anchor point, connectors, and safety harness. It shall also include a lanyard, deceleration device, lifeline, or combinations of these
Personal Fall Restraint System (PFRS)	A system used to restrict travel so that it stops the worker before they reach an unprotected edge
Qualified Person	The individual who possesses a recognized degree, certificate, or professional standing, or has demonstrated, by extensive knowledge, training, and experience, the ability to resolve problems relating to the specific task or project
Safety Harness	The straps or other device which support the body in the event of a fall
Working Height	The distance from the worker's footing to the next lower working level or surface to which the worker can fall

## C General Requirements

Personnel are required to use fall protection equipment or systems when an assessment of the hazard indicates a fall potential.

A fall arrest system is a system that will stop a worker's fall before the worker contacts the surface below. The following are situations where continuous attachment fall arrest systems are required:

- Working six feet or greater above the working surface, or where a fall hazard exists when working at less than six feet
- Working within six feet of handrails or guardrails at an elevated surface, regardless of the height
- Ascending or descending ladders regardless of height, where a risk assessment has determined a fall arrest system is required
- Performing work on ladders (portable or fixed) six feet or more from the next level
- Where exposure to an unprotected open hole or leading edge hazard exists
- Working from or riding in lifted personnel work platforms attached to a crane boom (except when working over water at less than six feet from the water's surface, no fall arrest is required)
- Working from spyder baskets or similar devices by means of a vertical lifeline



- Walking or working on roofs within six feet of an unprotected edge
- Where potential exposure to any other fall hazard exists

The following are applicable when a fall hazard exists with the potential for a fall to the water:

- Use of fall protection and a work vest is required for working outside of guardrails. In cases where the work vest hinders the ability to do the work and the person remains 100 percent tied off, the work vest may be removed after a risk assessment is completed.
- Communication shall be maintained throughout the duration of the job, including the use of radio communications and a buddy system
- An approved Work Control Certificate and JSEA shall be completed prior to commencement of work
- Performing work over water at night is restricted. A risk assessment and rescue plan shall be completed before work commences.

Facility engineering shall be consulted for designing or verifying anchor points, horizontal lifelines, and for confirming lifeline system standards are adequate to handle all fall arresting loads.

## D Key Responsibilities

Position	Responsibilities
Authorized Employee	<ul style="list-style-type: none"> <li>• Performs duties at a location where the person will be exposed to a fall</li> <li>• Confirms that they have the proper training, knowledge, and experience to conduct the work they are assigned and to adhere to all fall protection policies/procedures</li> <li>• Confirms that a rescue plan is in place</li> </ul>
Competent Person	Confirms that the appropriate fall protection and rescue system is selected, maintained, used properly and that workers are trained in its proper use
Qualified Person	<ul style="list-style-type: none"> <li>• Demonstrates, by extensive knowledge, training, and experience, the ability to resolve problems relating to the specific task or project</li> <li>• Determines Engineered Anchor Points</li> </ul>

## E Procedures

### E.1 Fall Protection

Personnel shall adhere to the following:

- When transferring between anchor points, 100% fall protection shall be achieved by means of a lanyard with two legs per harness. One leg of the lanyard shall be connected at all times.
- A lanyard with one leg is acceptable when work will not require movement between anchor points
- When a PFAS is used, the anchorage points shall be capable of supporting the requirements defined in the Definition Table for an Engineered Anchor or Improvised Anchor

- The PFAS shall be assembled to limit free fall distances to six feet or less. The deceleration distance shall be limited to three and one-half feet. In addition, the system shall be rigged to limit a swing fall hazard.

**NOTE:** Prior to utilizing a PFAS, a rescue plan shall be established to provide for prompt recovery of personnel in the event of a fall.

- Crane load/auxiliary lines may be used as anchor points if approved by a Competent Person or designated Person in Charge (PIC) (see Technical References for more requirements)
- Contractors engaged in rope access shall be certified per the conditions set forth by the Industrial Rope Access Trade Association (IRATA) or Society of Professional Rope Access Technicians (SPRAT)

### **E.1.a Examples that "DO NOT" require Fall Protection**

Personal fall arrest systems are not required in these situations:

- On scaffolds built to OSHA specifications (fully erected approved green tag scaffolding only and when working inside the guardrail system)
- On roofs with a standard guardrail system
- On stairways with standard railings
- On elevated walkways protected by guardrails
- Ascending or descending caged ladders

### **E.1.b Examples that "DO" require Fall Protection**

Fall protection is required when:

- Working on non-green tag scaffolding
- Erecting or dismantling scaffolding
- Working from an aerial lift
- Working from a manufacturer approved personnel hoist. A secondary personal fall arrest system is required. The secondary system shall have anchor that is independent from the lifting device.
- Working from an ladders (portable or fixed) above six feet

## **E.2 Fall Protection System Equipment**

All personnel shall mitigate fall hazards by using fall prevention methods in the order listed below:

- Eliminate fall hazards (e.g., repositioning of equipment and valves through engineering to avoid work at heights)
- Use traditional fall protection design (e.g., handrails and guardrails) on permanent platforms
- Work from temporary or moveable platforms that are properly secured
- Use personal fall restraint systems (e.g., barricades or restraint lines that prevent personnel from reaching the fall hazard)
- Use of a personal fall arrest system (e.g., full body harness with a lanyard)

Fall protection systems shall be used in accordance with manufacturer's requirements. The manufacturer's established limitations for body weight shall be observed.

Only ANSI Z359 approved fall protection system(s) shall be used.

A full body harness is required for fall protection. Safety belts are not allowed for fall protection.

The lanyard shall not be attached by means of knots or loops. The lanyard shall have a double latch self-locking snap hook at each end for connecting the body harness to a lifeline or anchor point. The lanyard shall be designed for fall arresting purposes by the manufacturer. Only commercially manufactured lanyards capable of supporting a 5,000 pound static load shall be used.

A deceleration device, such as a fall arresting shock absorber or retract-a-lock mechanism, is required to minimize force to the body in the event of a fall. Workers shall visually inspect the PFAS components prior to each use for wear, damage, and other deterioration. Immediately remove defective components from service and destroy them.

Personal fall protection systems and components that have been subjected to impact from a fall shall be removed from service immediately and recertified or destroyed.

### E.2.a Training

Workers, who could be exposed to fall hazards shall be trained in fall hazard recognition and the proper use of fall protection methods. Thereafter, re-training is necessary whenever there is reason to believe previously trained personnel do not have the necessary understanding and/or skill required, or due to equipment changes.

## F Key Documents

GoM Lifting Operations

ANSI Z359 Fall Protection and Fall Arrest

Revision Date	Authority	Custodian	Revision Details
06/01/2008	GoM HSSE Director	GoM HSSE Programs Manager	Definitions for engineered anchor point, improvised anchor points defined, personal fall restraint system, Authorized Employee, Competent Person and Qualified Person added More guidance and clarity in regards to when fall arrest systems are required More guidance and clarity in regards to requirements for hazards with the potential for a fall to water Elevated walkways protected by guardrails added to list of situation where personal fall arrest systems are not required
02/28/06	S. Garner/ S. Tink/ R. DeLeonardis/ C. Jackson	Kathy Kanocz	Clarified 100% fall protection, Clearly identify the need for a rescue plan for doing work with fall protection. Clearly outlined use of crane as anchor point. Changed CD # from 10096 to UPS-US-SW-GOM-HSE-DOC-00087-2 to conform to new numbering nomenclature inside of the GoM HSSE doc base. Changed 3 authorities and 1 custodian.
02/28/02	S. Garner/ B. Herbert/ R. White/ S. Flynn	Ray Britt	Initial issue as controlled document. Prior revision history located in hard-copy consolidated manual.

Control Tier 2 – GoM HSSE

CD# UPS-US-SW-GOM-HSE-DOC-00087-2

Revision Date: 06/01/08

Uncontrolled Document. Valid Only at the Time of Printing. Print Date: 6/6/2008