# Procedure

## Temporary Equipment

**OPS0077A-PR01 Procedure**

**Temporary Equipment**

1. [Introduction](#SEC_1_Intro)
2. [Temporary Equipment Process Steps](#SEC_2_Temp_Eqip_Process_Steps)
3. [Temporary Equipment Inspection](#SEC_3_Temp_Eqip_Inspec)
4. [Risk Management](#SEC_4_Risk_Management)
5. [Safety Shutdown Requirements](#SEC_5_Safety_Shutdown_Reqs)
6. [Hazardous (Classified) Areas and Spacing Requirements](#SEC_6_Hazardous_Classified_Areas)
7. [BSEE Requirements for Temporary Equipment](#BSEE)
8. [Documentation Requirements](#SEC_8_Documentation_Reqs)

**Tools**

* [Engine-Driven Temporary Equipment Checklist (TO.01)](#PR01_TO_01)
* [Electric Motor-Driven and Electrical Temporary Checklist (TO.02)](#PR01_TO_02)
* [Temporary Tank and Vessels Checklist (TO.03)](#PR01_TO_03)
* [Continuous Attendance Checklist (TO.04)](#PR01_TO_04)
* [Inspection Tags for Temporary Equipment (TO.05)](#PR01_TO_05)
* [Temporary Equipment Log (TO.06)](#PR01_TO_06)
* (Reserved)
* (Reserved)
* [Temporary Buildings Checklist (TO.09)](#PR01_TO_09)

**Guidelines**

* [Fusible Loop Plug Installation (GL.01)](#PR01_GL_01)
* [Consolidation MOCs by Well/Construction Campaign (GL.02)](#PR01_GL_02)
* [Temporary Equipment Quick Start Guide (GL.03)](#PR01_GL_03)
* [Regulatory Affairs Temporary Production Equipment Alert (GL.04)](#PR01_GL_04)
* [Glossary (GL.05)](#PR01_GL_05)
* [Reference and Companion Documents (GL.06)](#PR01_GL_06)

Document Suite Map

### 1 Introduction

|  |  |
| --- | --- |
| 1.1 Purpose | This Procedure is to ensure safety during temporary equipment installation and use for Upstream Americas Deepwater-Gulf of Mexico (UAD GOM) floating and fixed producing facilities. It outlines the process for requesting, selecting, inspecting, placement, and use of temporary equipment (vendor-supplied/owned equipment for short-term use offshore) to minimize possibility of ignition, fire, and/or spills*.*  This document applies to UAD GOM employees and contractors working at GOM floating and fixed producing facilities owned, operated, or leased by UAD.  The only exceptions are:   * by agreed variance (see HSE0004A), * by agreed bridging document, * as specifically noted in sections that follow, and * Mobile Offshore Drilling Units (MODUs), offshore operations outside the US GOM, and onshore operations are excluded.   This document does not apply to management of Portable Electronic Devices (PEDs) (refer to OPS0175 Portable Electronic Devices). |

|  |  |
| --- | --- |
| 1.2 Target Audience | Primary users are individuals involved with GOM floating and fixed producing facilities operations and support, including:   * Operations Managers * Onsite Leadership (Offshore Installation Manager [OIM], Person-in-Charge [PIC], Drilling Foremen) * HSE Techs * Specialty Engineers * Terminal Operations * Designated Competent Inspector * Senior Authorized Electrical Person (SAEP) * Electrical Technical Authority * Vendors * Regulatory Affairs |

|  |  |
| --- | --- |
| 1.3 Auditing Requirements | To ensure implementation effectiveness, locations shall be audited for document compliance using local or other applicable audit procedures. The Audit Questionnaire included with this Procedure can be used to document compliance. |

|  |  |
| --- | --- |
| 1.4 Management of Change | The UAD document management process manages change related to development of and revisions to UAD documentation. This process includes:   * stakeholder engagement and review, * management approval, * communication/roll-out, * implementation, and * training.   All other changes must be managed per HSE0004A Management of Change (MOC) or an equivalent process unless specifically excluded by a provision of this document or other pertinent UAD document.  Guidelines for consolidating MOCs by well or construction campaign are provided in OPS0077A-PR01-GL.02. |

|  |  |
| --- | --- |
| 1.5 Overview | The following aspects of the temporary equipment process are addressed in this document:   * Job Planning * Risk Management * MOC (required for all temporary equipment) * Hot Work Category 2 Permit * Requesting/Inspection * Placement * Installation * Operation   [Flowcharts](#flowchart) on the following pages illustrate the temporary equipment process flow as detailed in [Section 2 Temporary Equipment Process Steps](#_2_Temporary_Equipment_1). |

**Y**

**1.** Identify Temporary Equipment Need

*\* If Temp Production Equipment, contact   
Regulatory Affairs   
to obtain approval*

Begin MOC Process

Select   
OPS0077A-PR01 Checklist Required *(depending on equipment type)*

Begin Step 1   
of Checklist

Determine Equipment Classification Requirements per Facility Area Classification Drawings and Indicate on  
Step 1 of Checklist

Conduct Site Survey to Determine Equipment Placement

Unclassified Area -   
More than 40' from an API Class 1, Div 2 Group D   
Area or More than 50'   
from Potential Leak Source

Within 40' of an API   
Class 1, Div 2 Area or   
More than 50' from   
Potential Leak Source

API Class 1, Div 2 area

API Class 1, Div 1 area

Will Equipment be  
Installed in API Class 1,   
Div 1 or 2 Area?

Equipment   
Approved for Area It Will Be Installed In?

Requestor Contact Vendor and Arrange for 3rd Party Inspection

Vendor Completes Initial Inspection and Step 2 of Checklist. Perform Function Test of Equipment and Safety Devices in the Presence of a 3rd Party Inspector. Document Test Results for Future Reference.

3rd Party Inspector Completes Equipment Inspection at   
Vendor’s Location

Inspector Notifies Requestor of Non-compliance

Inspector Re-evaluates Equipment Needs/ Placement and Re-starts Process. (Go to 1.)

Inspector Attaches Proper Tag and Completed Checklist   
to Requestor

MOC  
Approved?

Vendor Ships  
Equipment

Go to   
Page 2

Page 1 – **Temporary Equipment Process**

Checklist  
Compliance

Non-compliance Mitigated

**Y**

**Y**

**Y**

**Y**

**N**

**N**

**N**

**N**

**N**

* Temporary Engine-Driven Checklist (TO.01)
* Temporary Electric Motor-Driven Checklist (TO.02)
* Temporary Tank and Vessels Checklist (TO.03)
* Temporary Buildings Checklist (TO.09)

*\* Hot Work Type 2 Permit is required when operating equipment that is not suitable for use in hazardous (classified) areas regardless of its installed location at the facility*

**Y**

**N**

**N**

**Y**

Receive Equipment at Offshore Location

Operation of Equipment:

* Obtain Work Permit   
  • Hot Work Type 2\* based on MOC
* Use Continuous Attendance Checklist (OPS0077A-PR01-TO.04)
* Use Temporary Equipment Hazards and Controls in ISSOW Hazard for JSA Development
* Job Sponsor Monitors Job for Compliance with Continuous Attendance Checklist
* Conduct Weekly Audit

Perform Placement   
and Installation of Equipment per Requirements

Conduct Inspection  
at Offshore Location Using Checklist

Page 2 – **Temporary Equipment Process**

Match MOC with Completed Checklist

New MOC

Re-evaluate   
Equipment Needs   
and Re-start Process

Go Back to Page 1  
(Start at 1.)

Continued from  
Page 1

Including Outstanding Issues with Mitigations in Place.

Checklist  
Compliance

Next Use   
Within Terms   
of MOC and  
<45 Days   
on Location

|  |  |
| --- | --- |
| 1.6 Temporary Production Equipment vs. Equipment Not Tied into Production | The illustration below provides examples for the two types of temporary equipment.  **TEMPORARY EQUIPMENT**  Examples (list is not all inclusive):   * Well unloading equipment * CETCO filters * Pumps * Heaters * Filtering Equipment   Examples (list is not all inclusive):   * Sandblasting units * Cementing blenders * Hydraulic torque machines * Cranes * Filter Equipment * Trash compactors * Buildings (e.g. quarters, tool houses, x-ray) * Wireline/electric line units * Tanks and vessels * Generator sets * Pumps * Coiled tubing units   Equipment **not tied into the production train** and on location as a non-permanent installation  Temporary **production equipment** requires ***BSEE approval***. See [7 BSSE Requirements](#BSEE). |

|  |  |
| --- | --- |
| 1.7 Areas of Temporary Equipment Use | Temporary equipment used in the following area classifications must meet specific requirements: |

|  |  |
| --- | --- |
| Area | Requirements |
| API Class 1, Division 1 or Division 2 areas on the facility’s Electrical Area Classification drawings | Shall be approved for area use by a Nationally Recognized Testing Laboratory (NRTL). |
| Within 40' of API Class 1, Division 2 areas or within 50ʹ of a potential leak source as defined in [6.6 Classification of Potential Leak Sources](#_6.6_Classifica-tion_of) | Shall be approved for use in a hazardous (classified) area Class 1, Division 2 by a NRTL.\* |
| Unclassified area that is more than 40' from API Class 1, Division 2 areas and more than 50’ from a potential leak source as defined in 6.6 Classification of Potential Leak Sources | General purpose electrical equipment meeting all other requirements of this Procedure and OPS0177A Operation Requirements for Electrical Systems Offshore may be used. |
| \* Exceptions:   * When equipment approved for use in hazardous (classified) areas is not available, unapproved equipment shall meet the minimum requirements as defined in the equipment checklists. * In cases where impervious, vapor-tight barriers that will contain or deflect a flammable gas cloud and prevent it from reaching the electrical ignition sources on temporary equipment are present. These barriers include blast walls, solid decks, and roofs. See 6.3 Spacing Requirements for Temporary Equipment for additional details. | |

### 2 Temporary Equipment Process Steps

|  |  |
| --- | --- |
| 2.1 Process Steps | Steps for requesting, inspecting, installing, and using temporary equipment are detailed below.  NOTE: Not all situations/variables that may require consideration are included in the table. |

| Role | **Step** | Description |
| --- | --- | --- |
| Requester | 1 | Identify the need for temporary equipment. |
| 2 | Select appropriate checklist(s):  NOTE: Some temporary equipment may require the use of multiple checklists (e.g. a skid with tanks and a pump driven by an engine or electric motor).   |  |  | | --- | --- | | **Doc Number** | **Title** | | OPS0077A-PR01-TO.01 | Engine-Driven Temporary Equipment Checklist | | OPS0077A-PR01-TO.02 | Electric Motor-Driven and Electrical Temporary Equipment Checklist | | OPS0077A-PR01-TO.03 | Temporary Tank and Vessels Checklist | | OPS0077A-PR01-TO.09 | Temporary Buildings Checklist | |
| 3 | Conduct site survey to determine equipment placement. |
| 4 | Determine equipment classification requirements in accordance with facility area classification drawings and indicate on Step 1 of the checklist. |
| 5 | Complete Requestor information in Step 1 of the checklist. |
| 6 | Initiate MOC per HSE0004A; including a review of deck loading by civil engineering to ensure that the deck loading is not exceeded.  NOTE: Attach all supporting documentation to the MOC. |
| 7 | Contact Vendor and 3rd Party Inspector to arrange inspection. A 48-hour notice prior to inspection is required. |
| Vendor | 8 | Complete initial inspection and Step 2 of checklist.  Perform a function test of equipment and safety devices in the presence of the 3rd party inspector.  Document results of test for future reference. |
| 3rd Party Inspector | 9 | Complete initial equipment inspection (at Vendor’s location including verification and documentation of the function-test) and:   |  |  | | --- | --- | | **If Checklist is…** | **Then…** | | Compliant | * Attach inspection tag according to [3.5 Inspection Tags](#_3.5_Inspection_Stickers) to equipment. * Maintain files of completed checklists according to  [8 Documentation Requirements](#_8_Documentation_Requirements_1). | | Noncompliant | Notify Requestor of non-compliance. | |
| Requestor | 10 | If needed, mitigate non-compliance.   |  |  | | --- | --- | | **If…** | **Then…** | | Mitigated | List all mitigations in the comments section of the checklist and go to Step 11. | | Not Mitigated | Re-evaluate equipment needs and restart Step 1 of process. | |
| Vendor | 11 | Ship equipment, including checklist(s) and function test documentation. |
| Equipment Requestor/ Offshore Inspector | 12 | Receive equipment offshore. |
| 13 | Match MOC with original checklist from Vendor. |
| 14 | Perform placement and installation of equipment per MOC requirements. |
| 15 | Ensure that competent personnel designated by the Person in Charge (PIC, Shell UAD Operations or Drilling) inspect the equipment and:   * complete completes the offshore column of checklist, * verify verifies that the appropriate approval inspection tag is attached, and * file files the completed checklist for 12 months. |
| 16 | Function test and verify safety devices and ensure that all MOC and checklist requirements have been met before startup. |
| 17 | Commission equipment and begin operation of equipment only after:   * using Temporary Equipment Hazards and Controls in ISSOW Hazard Database for Job Safety Assessment (JSA) development, * obtaining Work Permit (Hot Work Category 2) if equipment is not suitable for use in hazardous (classified) areas, * using ISSOW Temporary Equipment Continuous Attendance Checklist, if continuous attendance is required, and * Job Sponsor monitors job for compliance with OPS0077A-PR01-TO.04 Continuous Attendance Checklist. |
| 18 | Complete a new temporary equipment checklist after equipment is in operation:   * for 45 days and every 45 days thereafter, * whenever the equipment is relocated to an area with a higher area classification rating, or * after repairs are made to the equipment to ensure the equipment still meets requirements of this Procedure.   Function test safety devices at regulatory compliance intervals and document results per Bureau of Safety and Environmental Enforcement (BSEE) requirements. |
| 19 | After temporary equipment is in place and in use for 60 days, ensure facility drawings are updated. |
| 20 | Maintain the temporary equipment log in the Control Room/Permit Control Center. |
| Regulatory Affairs | 21 | Report temporary equipment use to BSEE as required by [Section 7 BSEE Requirements for Temporary Equipment](#_7_BOEMRE_Requirements). |

Requirements when transferring equipment between offshore locations (field to field transfer):

|  |  |  |
| --- | --- | --- |
| Role | Step | Description |
| Equipment Requestor/ Sponsor Offshore | 1 | Shipping location’s offshore inspector will re-inspect equipment for compliance with requirements before shipping to destination. |
| 2 | Receiving location will mark previous inspection as null and void after Inspector’s name and previous asset are documented. Replace inspection tag after inspection is complete. |
| 3 | Complete requirements in Steps 12-21 above. |

### 3 Temporary Equipment Inspection

|  |  |
| --- | --- |
| 3.1 Inspection | The temporary equipment inspection process incorporates:   * Vendor Inspection, * 3rd Party Inspection by an approved inspector, and * Offshore Inspection. |

|  |  |
| --- | --- |
| 3.2 Vendor Inspection | Vendor shall inspect his equipment before offering it to the Shell 3rd party inspector. The Equipment Requestor shall notify Vendor of inspection requirements before 3rd Party Inspector arrives. |

|  |  |
| --- | --- |
| 3.3 Approved 3rd Party Inspection | Upon arrival at the Vendor location, 3rd Party Inspector shall:   * complete Step 3 of checklist, * provide further guidance on requirements of the checklists, and * affix appropriate inspection tag to each piece of temporary equipment (see [3.5 Inspection Tags](#_3.2_Inspection_Tags) and OPS0077A-PR01-TO.05 Inspection Tags) indicating that the checklists have been completed and the equipment is suitable for use in the specified area (if determined by inspection).   3rd Party Inspection is valid for 14 days. If the equipment is not shipped within 14 days, or if repairs/modifications are made after inspection, a new 3rd Party Inspection shall be required.  If equipment inspection cannot be completed by the 3rd Party Inspector or if inspector is unavailable, this shall be noted on the checklist and Equipment Requestor shall be notified that the inspection shall be completed at the offshore location by the Offshore Inspector.  NOTE: If the equipment does not meet requirements for use offshore, 3rd Party Inspector shall notify the location IMMEDIATELY. |

|  |  |
| --- | --- |
| 3.4 Offshore Inspection | Equipment shall be inspected during the installation phase at the facility. Inspection results shall be documented on the checklist shipped with the equipment. Various craft personnel (e.g. electricians and mechanics) may be needed to validate that equipment components meet checklist requirements.  With successful completion of the checklist, approval signatures shall be obtained by the Offshore Inspector. |

|  |  |
| --- | --- |
| 3.5 Inspection Tags | Equipment inspection tag descriptions and uses are defined in the table below. See OPS0077A-PR01-TO.05 Inspection Tags for the tags to be printed. |

|  |  |
| --- | --- |
| Tag Color/Type Checkbox | Use |
| **Yellow** | Equipment is only suitable for use in the following areas:   * more than 40' from an API hazardous (classified) area as indicated on the facility’s area classification drawingsand * more than 50' from a potential leak source of flammable fluid as defined in 6.6 Classifica-tion of Potential Leak Sources. |
| **Blue** | Equipment is suitable for use in any area except areas classified as an API Class 1, Division 1 or 2, Group D. |
| **Green\***  Class 1, Div. 2, Group D checkbox | Equipment is suitable for use in any area except API Class 1, Division1, Group D. |
| **Green\***  Class 1, Div. 1, Group D checkbox | Equipment is suitable for use in any location on the facility. |
| **Orange** | Equipment requires continuous attendance while in operation and during the startup and cool down periods.  NOTE: Continuous attendance is required on all temporary equipment not suitable for use in a hazardous (classified) area or when required by government regulations. |
| **Red** | Equipment is rejected for use offshore. |
| \* Installation of equipment with green tags requires approval from the SAEP or Authorized Electrical Person 3 (AEP3) for the facility. | |

### 4 Risk Management

|  |  |
| --- | --- |
| 4.1 Introduction | Risk associated with the installation and operation of temporary equipment increases the potential for harm to personnel and assets. To reduce incidents involving the use of temporary equipment to a level that is as low as reasonably practicable (ALARP), the following shall be used:   * **Risk Assessment and Cumulative Risk Management** – A component of this document designed to minimize risk of initial temporary equipment placement, operation, and cumulative risk associated with concurrent operations. * **Fire, Explosion, and Evacuation Strategy and Guidance (FEES)** – A strategy that facilitates control and mitigation of fires and explosion on offshore production installations and is based on mitigating the impact of hazardous events, in the following priority:  1. Personnel safety 2. Protecting the environment 3. Minimizing interruption of production (business loss) |

|  |  |
| --- | --- |
| 4.2 Risk Assessment and Cumulative Risk | **Minimizing Risk of Initial Placement:** The temporary MOC shall demonstrate/ document the following:   * Description of equipment, classification, and placement. * Equipment selection is ALARP. * (i.e. all reasonable efforts have been made to obtain suitably rated equipment for the area classification requirements for the location the equipment is to be placed). * Equipment placement is ALARP (i.e. all reasonable efforts have been made to place the equipment in as low risk an area as possible regarding ignition possibilities of flammable releases * Equipment placement reviewed by civil engineering to ensure that deck loading is not exceeded. * Equipment placement must meet requirements of 1.7 Areas of Temporary Equipment Use, and all mitigations required by the appropriate temporary equipment checklist have been employed. * If unclassified electrical equipment or components have been placed within 40' of API Class 1, Division 2 areas or within 50ʹ of a potential leak source as defined in 6.6 Classification of Potential Leak Sources the Electrical Technical Authority (TA) must review the MOC. * Description of all temporary hoses and piping and associated valves including rated working pressure and anticipated working pressure. Also identify: * how overpressure protection will be achieved and * the plan for leak testing before use.   **Minimizing Risk of Daily Operation, Considering the Cumulative Risk from Other Permitted Temporary Equipment and Simultaneous Operations (SIMOPs):** Use the work permit to demonstrate/document:   * Description of temporary equipment usage covered by the work permit or work control certificate (WCC). * Name of temporary equipment checklist(s) being used to document operating risk mitigation. * Description of other SIMOPs approved for that day (per the asset’s manual of permitted operations [MOPO] or SIMOPs matrix) that could potentially result in a facility gas release. * An update of the risk (e.g. Risk Assessment Matrix [RAM] rating = Serious, High, Medium, or Low) of operating the equipment for that day considering potential gas release risk associated with other SIMOPs.   NOTE: Use of the equipment is not allowed if post-mitigation risk rating is still high.  The following shall be considered when updating the RAM rating:   * Congestion/ventilation (e.g. solid wall segregation, grated flooring) * Equipment density * People density (especially during maintenance periods) * Number of temporary equipment in the same area (3 to 5 maximum)   NOTE: Ignition probabilities increase exponentially with quantity of temporary equipment.   * Temporary equipment type and size/wattage * Activities (e.g. SIMOPs, shut-ins) * Limitations of dedicated fire watchers (e.g. line of sight, multiple roles) * Proximity of API Class 1, Division 1 areas * Possible obstruction of fire escape routes, temporary refuge, or designated assembly area * Restricted access to safety critical equipment (e.g. fire water pumps/ extinguishers/monitors, shutdown stations, fire detection systems) * Introduction of new hazards/inventories where none previously existed (e.g. temporary equipment associated fuel day tanks) * Temporary equipment fire and gas tie-ins to platform emergency shutdown (ESD) system * Local/manual ESD provisions * History of gas releases in the area * FEES implementation status (e.g. blowdown improvements) * Additional (situation specific) barriers/mitigations added to reduce risk of operating the temporary equipment to ALARP. * Conditions that require the temporary equipment to be shutdown to eliminate it as a source of potential ignition. * Emergency response protocol to shutdown and secure the equipment in the case of a gas release on the facility. |

|  |  |
| --- | --- |
| 4.3 FEES and Temporary Equipment | Adding temporary equipment shall not increase the overall risk to personnel from fire or explosion, nor shall it impair the ability to safely evacuate the facility before escalation if a major incident occurs.  The specific requirements of HSE0034 FEES shall apply to the addition of temporary equipment or buildings to an existing facility. |

|  |  |
| --- | --- |
| 4.4 FEES Requirements | The placement of the equipment shall not cause:   * a significant increase in congestion that could increase explosion over pressures, * a significant decrease in ventilation that could increase the gas cloud size due to adverse impact on congestion, * an increase in potential for fire escalation beyond the facility’s control ability, * obstruction of emergency egress routes between process areas and the quarters, temporary refuge, and designated assembly area, * restricted access to the primary, secondary, or tertiary means of escape, or * restricted access to critical safety equipment or controls (e.g. fire pumps, shutdown stations, and firefighting equipment). |

|  |  |
| --- | --- |
| 4.5 Pre-Site Assessment and FEES | The impact that temporary equipment and buildings have on the fire and explosion risks for the facility shall be assessed using the FEES requirements and documented on the temporary equipment checklists (see OPS0077A-PR01-TO.01, OPS0077A-PR01-TO.02, OPS0077A-PR01-TO.03, and OPS0077A-PR01-TO.09) before shipment/placement of the equipment offshore. |

|  |  |
| --- | --- |
| 4.6 Simplified Connection for FEES | Redesigned fire and gas panels resulting from implementation of each location’s FEES shall have provisions for simplified interconnection of temporary equipment. |

|  |  |
| --- | --- |
| 4.7 Emergency Response Plan | Each location’s Emergency Response Plan shall be reviewed and adjusted by onsite leadership to address hazards posed by the use of temporary equipment. |

|  |  |
| --- | --- |
| 4.8 Minimizing Risk to Personnel | Effective mitigation measures shall be provided such that the risk to personnel from fire or explosion is not increased, nor the ability to safely evacuate decreased from what was determined in the facility’s original FEES assessment, refer to [4.4 FEES Requirements](#_4.4_FEES_Requirements_1). |

|  |  |
| --- | --- |
| 4.9 Mitigation Measures | HSE0004A MOC shall be used when additional temporary measures or administrative controls are implemented. Such temporary measures include:   * temporarily reducing the number of persons placed at risk, * temporarily suspending certain operations, and/or * modifying operating and emergency procedures.   Where additional mitigation measures cannot be incorporated, contact the HSE Technical Safety Group for assistance. |

|  |  |
| --- | --- |
| 4.10 Lifting and Hoisting | All equipment scheduled to undergo a dynamic lift offshore shall have a completed OPS0055-PR02-TO.12 Lifted Equipment Certification Form before shipping from the terminal. |

|  |  |
| --- | --- |
| 4.11 USCG Approval | All occupied portable buildings shipped offshore shall be approved by the United States Coast Guard (USCG). Refer to HSE0149 Occupied Portable Buildings. |

|  |  |
| --- | --- |
| 4.12 Location of Occupied Buildings | Both temporarily and permanently occupied buildings shall be located as far as practicable from the facility’s fire and explosion hazards. When the building must be located within hydrocarbon processing areas, additional building design measures shall include building structural designs capable of withstanding the anticipated explosion overpressure at the location without catastrophic collapse or becoming dislodged from the structure. |

### 5 Safety Shutdown Requirements

|  |  |
| --- | --- |
| 5.1 Safety Shutdown Requirements | All temporary equipment installed, except as noted in [5.2 Shutdown Requirement Exception](#_5.2_Shutdown_Requirement_1), shall be:   * tied into the Safety Shutdown System (SSDS) and be shut down when the facility shuts down and * designed to prevent accidental shutdown of the facilities or platform. |

|  |  |
| --- | --- |
| 5.2 Shutdown Requirement Exception | SSDS tie-in is not required for drilling or well servicing equipment if shutdown would result in a more dangerous situation at the facility (e.g. loss of well control) or if the equipment is in utility service and not engine driven (e.g., electric pressure washer, temporary distribution rack) and is certified for the hazardous location in which it is used (Class 1, Division 2 minimum). Utility services are services that are neither hydrocarbon, nor production, nor well related. A variance is not required in this case.  A variance to this Procedure is required when installing other types of temporary equipment if it is not reasonably practicable to complete the SSDS tie-in because of the type of temporary equipment and its short duration (1 to 2 days) at the facility. See HSE0004A MOC.  When temporary equipment is not tied into the SSDS it must be continuously attended per requirements in [6.4 Continuously Attended Equipment Requirements](#_6.4_Continuously_Attended). Utility service equipment (as noted above) that meets the hazardous location requirements (Class 1, Division 2 minimum) is not required to be manned for SSDS tie in. |

|  |  |
| --- | --- |
| 5.3 Fire and Gas Detection System Design | Temporary equipment shall be fitted with fire and gas detection equipment designed to shut down the equipment when activated, as required in Table 1 below or ENG0112 SEPCo Design and Engineering Standard for Fire and Gas Detection System. These requirements are included on the checklists and detailed below. |

|  |  |
| --- | --- |
| 5.4 Manual and Remote Shutdowns | Temporary equipment shall be fitted with a local manual shutdown switch. This switch shall be easily accessible and provided at the periphery of the skid.  A remote-operated manual switch is recommended. When provided, it should be located strategically along evacuation route to facilitate shutdown of temporary equipment during SSDS events. |

|  |  |
| --- | --- |
| 5.5 Fire and Gas Detection Requirements | Temporary equipment shall be fitted with fire and gas detection designed to shut down the equipment upon activation as specified below: |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table 1 – Fire and Gas Detection Requirements** | | | | | |
| **Temporary Equipment, excluding buildings** | | | | | |
| **Equipment Type** | | **Within 40' of an API Class 1, Division 2 area OR within 50ʹ of a potential leak source\*** | | **Beyond 40' of an API Class 1, Division 2 area AND beyond 50ʹ of a potential leak source\*** | |
| Continuously Attended | Unattended | Continuously Attended | Unattended |
| **Gas Detection Required?** | | | |
| **Enclosed** | | N | Y\*\* | N | N |
| **Open** | | N\*\*\* | N\*\*\* | N | N |
|  | | **Fire Detection Required?** | | | |
| **Handling Hydrocarbons** | | N | Y | N | Y |
| **Not Handling Hydrocarbons** | | N | Y\*\* | N | Y\*\* |
| **Temporary Buildings** | | | | | |
|  | Occupied | | Unoccupied | Occupied | Unoccupied |
| **Gas Detection Required?** | | | | |
| Y | | Y, unless building does not contain ignition source | Y | N |
| **Fire Detection Required?** | | | | |
| Y | | Y, unless building has only lighting | Y | N |
| \* As defined in 6.6 Classifica-tion of Potential Leak Sources  \*\* Only for engine driven-equipment  \*\*\* Provided equipment is suitable for hazardous (classified) areas | | | | |

|  |  |
| --- | --- |
| 5.6 API Requirement: Fusible Plugs | All production facilities offshore shall be protected with safety systems per the provisions of API Recommended Practice (RP) 14C and any additional protection adopted from application of HSE0026-SP01 Hazards and Effects Management Process (HEMP).  NOTES:  If temporary equipment is not properly monitored for excessive heat or fire, an Incident of Non-Compliance (INC) can be issued.  API RP 14C, Table C1 provides requirements for fusible plug installations and outlines requirements for each type of equipment. Table C-1 is available in OPS0077A-PR01-GL.01. |

|  |  |
| --- | --- |
| 5.7 Polyflow Loop Requirement | Engine-driven temporary equipment not continuously attended while in service shall be equipped with a Polyflow loop or equivalent system that shuts down the equipment in case of a fire. Activation of this Polyflow loop or equivalent shutdown system shall only shut down the affected temporary equipment and not the entire the platform or facility. |

|  |  |
| --- | --- |
| 5.8 Diesel Engine Air Intake Overspeed Shutdowns | Continuously attended temporary diesel engines shall be equipped with a remote-operated manual or automatic air intake (overspeed) shutdown device.  Temporary diesel engines not continuously attended shall be equipped with an automatic air intake (overspeed) shutdown device. |

|  |  |
| --- | --- |
| 5.9 Diesel Engine Driver Automatic Shutdown Exception | A diesel engine on a temporary crane, forklift truck, or unit involved in critical well servicing activities shall have no automatic shutdown due to a change of platform status. Such units shall be **continuously attended throughout all operations** and equipped for manual shutdown by the unit operator. Typical critical well servicing activities include, but are not limited to:   * wireline winches, * coiled tubing units, * nitrogen converters, and * pumping units performing operations such as: * acid jobs, * sand fracs, * sand clean-outs, and * circulating through coiled tubing. |

### 6 Hazardous (Classified) Areas and Spacing Requirements

|  |  |
| --- | --- |
| 6.1 Minimum Requirements | All temporary equipment using electrical components shall meet the operating requirements of OPS0177A. |

|  |  |
| --- | --- |
| 6.2 Area Classification | All temporary equipment installed outdoors on an offshore location shall be assessed for suitability for installation in hazardous (classified) areas and shall be designated “unclassified” or one of the following:   * API Class 1, Division 1, Group D; Temperature Rating T2 (300°C, 572°F maximum) or * API Class 1, Division 2, Group D; Temperature Rating T2 (300°C, 572°F maximum).   In areas where heavy vapors may be present, temperature ratings shall be lowered according to National Fire Protection Association (NFPA) 70 National Electric Code Handbook 2014.  Refer to OPS0177A for examples of areas on production platforms where the temporary electrical equipment shall be approved for API Class 1, Division 1 or Class 1, Division 2. |

|  |  |
| --- | --- |
| 6.3 Spacing Requirements for Temporary Equipment | Temporary equipment not rated for API Class 1, Division 2, Group D, shall not be located inside an API Class 1, Division 1 or 2 area.  It shall be located:   * 40' beyond an API Class 1, Division 2 area and 50ʹ beyond all potential leak sources as defined in 6.6 Classification of Potential Leak Sources, or * inside an air-conditioned (sealed and vapor-tight) building, without a gas source, where at least one of the following conditions shall exist: * the doorways and vent openings are at least 10' from potential leak sources, * the building is positively pressurized according to NFPA 496, or * the building interior is protected by combustible gas detection as detailed in API RP 500 Section 6.5.   NOTE: An exception to the 40ʹ and 50' spacing requirement applies when impervious, vapor-tight barriers that will contain or deflect a flammable gas cloud and prevent it from reaching the electrical ignition sources on temporary equipment are present. These barriers include blast walls, solid decks, and roofs. |

|  |  |
| --- | --- |
| 6.4 Continuously Attended Equipment Requirements | **Attendant Requirements:**  “Continuously Attended” shall mean under continuous observation by a person(s) who is:   * located in the immediate area (10' to 15') of the equipment, during all times of operation,   NOTE: Well servicing and drilling operations that are exempt from the SSDS tie in and fire detection requirements are required to have an operator making rounds to cover the associated equipment within 15 minute intervals. This does not relieve the requirements of a Hot Work Type 2 permit where the attendant is posted at the equipment that is not Class 1, Division 2 compliant.   * attending the equipment while it is in operation and during the cool-down period for at least 10 minutes (some equipment may require a longer cool-down period), * capable of and responsible for detecting gas releases both with and without mechanical gas detection equipment as follows: * For manual detection, use sight, sound, and smell detection methods. * For mechanical gas detection, portable gas detectors (with audible and visual warnings adequate for the environment and rated for the gas type to be detected) shall be used in the immediate vicinity of the equipment to continuously monitor gas levels. These detectors shall be calibrated and bump tested before each use, see HSE0008-PR05 Confined Space Entry. * able to immediately recognize equipment conditions that, if left undetected, could result in the equipment becoming an ignition source or catch fire, * trained in the use of firefighting equipment, * in possession of a written procedure for shutdown of the equipment approved by the PIC and discussed in the pre-job safety meeting * capable of and responsible for immediately executing shutdown of the temporary equipment when/if: * a portable gas detector monitoring the area detects a Lower Explosive Limit (LEL) reading in excess of 5, * a facility ESD occurs, * there is a 20% LEL alarm from an exterior gas detector or gas detector inside of any building within 40' of the equipment location, or * the equipment experiences excessive heat or fire, and * knowledgeable about responding to location SSDS events and expectations in HSE0029A-PR05-TO.07 Expectations for Responding to a Produced Hydrocarbon Release or Leak.   **Additional Requirements:**   * A Hot Work Category 2 Permit (HSE0008-PR03-TO.04) shall be issued and approved by the PIC when equipment operated on the facility is not suitable for operation in hazardous (classified) areas. |

|  |  |
| --- | --- |
| 6.5 Continu­ously Attended Multiple Pieces of Equipment | In cases involving installation of multiple pieces of equipment in close proximity, one person is allowed to continuously monitor all equipment if:   * the attendant meets all requirements of [6.4 Continuously Attended Equipment Requirements](#_5.9_Continuously_Manned) for each piece of temporary equipment, * remote-controlled shutdowns for each piece of equipment can be located together along an escape route, allowing quick shutdown during a platform SSDS event, and * manual shutdown requirements for multiple pieces of temporary equipment attended by one person are included in local operating procedures, work permit, and JSA. |

|  |  |
| --- | --- |
| 6.6 Classifica-tion of Potential Leak Sources | Areas surrounding potential leak sources (e.g. valves, flanges, threads, taps, gauges, and small bore appurtenances) in piping and tubing systems containing flammable fluids (e.g. gases, vapors, liquids) and located in non-enclosed, adequately ventilated areas shall be considered at a minimum as API Class 1, Division 2 areas. |

|  |  |
| --- | --- |
| 6.7 Drilling, Completion, and Well Servicing Operations | For the special case of drilling, completion, and well servicing operations, a minimum 50' separation shall be maintained between temporary equipment not suitable for hazardous (classified) areas and from the following equipment **only**:   * rotary tables, * blowout preventer (BOP) areas, * gas busters (degassers), * choke manifolds, or * diverter systems.   The maximum gas release pressure in these systems can reach 3500 psig.  **Exception: When equipment approved for use in hazardous (classified) areas is not available and unapproved equipment is used within 40' from an API Class 1, Division 2 area and within 50ʹ of a potential leak source as defined in 6.6 Classification of Potential Leak Sources it shall meet the minimum requirements as defined in the equipment checklists.**  All equipment used inside hazardous (classified) areas must be approved for use in such areas. |

|  |  |
| --- | --- |
| 6.8 Example of Application of 40' Spacing | The below figures are examples of two applications of the 40' spacing from a Class 1 Division 2 hazardous (classified) area. The top figure shows a plan view of an application without any vapor-tight barriers and the bottom figure is an elevation view of an application with impervious, vapor-tight barriers such as blast walls, solid decks, and roofs.      NOTE: The 40' spacing requirement from the hazardous (classified) area is measured as the shortest linear distance to the barrier, around the barrier, and to the temporary equipment location. |

|  |  |
| --- | --- |
| 6.9 Drilling, Completion, and Well Servicing Operations Exception | The minimum separation distance between temporary equipment not suitable for hazardous (classified) areas and other equipment associated with drilling, completion, and well servicing operations (**not including** the equipment listed in [6.7 Drilling, Completion, and Well Servicing Operations](#_6.7_Drilling,_Completion,)), including the mud module equipment, shall be per the electrical area classification distances as shown in API RP 500.  The maximum gas release pressure from these systems is limited to ~ 150 psig. |

### 7 BSEE Requirements for Temporary Equipment

|  |  |
| --- | --- |
| 7.1 BSEE Approval Requirements | BSEE approval is required as described in the table below for temporary equipment. Allow 5 to 7 working days in the planning cycle for BSEE approval. |

|  |  |
| --- | --- |
| Equipment Type | BSEE Submittal Requirements |
| Temporary Production Equipment | Drawings:   * simplified process and safety drawing, * layout, and * electrical area classification updated to include equipment locations and associated hazard radius. |
| Temporary Production Equipment that is Automated or Integrated with the Platform Safety System | All of the above plus:   * An updated Safety Analysis Function Evaluation (SAFE) Chart showing the shutdown functionality for the temporary equipment. |
| Temporary Equipment Used for Acid Job Flowback Jobs | All of both cells directly above plus:   * H2S Contingency Plan * Contact Regulatory Affairs. Due to the possibility of encountering H2S during flowback, additional BSEE approval may be required. |

|  |  |
| --- | --- |
| 7.2 Roles and Responsibil­ities | * The **Equipment Requestor** shall notify Regulatory Affairs for all temporary production equipment. * **Regulatory Affairs** shall request BSEE approval for use offshore. |

|  |  |
| --- | --- |
| 7.3 Additional Requirements | The following BSEE requirements shall be followed for the use of temporary production equipment. |

|  |  |
| --- | --- |
| **Additional Requirements for Temporary Production Equipment** | |
| **Isolation and Continuous Monitoring** | * The temporary equipment must be isolated from platform processes when not in use. * The temporary equipment must be monitored at all times while in use unless an acceptable SSDS is installed and approved. |
| **Temporary Connections** | * Hoses, chicksans, etc. shall be: * rated for the working pressures envisioned for the job and * routed or guarded to limit trip hazards, blind spots, and accidental damage from impact (e.g. dropped items in lift areas). * The number of hose connections shall be minimized. * All hose connection points shall be located over platform (sump) skid pans. Although it should be avoided if possible, hose connections over open grating shall be placed over local skidpans to prevent leakage overboard. * Periodically inspect hose connections. |

### 8 Documentation Requirements

|  |  |
| --- | --- |
| 8.1 Required Documentation | The following are required for operation of all temporary equipment:   * Hot Work Category 2 Permit, not required if equipment is suitable for hazardous (classified) areas, (HSE0008-PR03-TO.04). * MOC * Temporary Equipment Checklist(s) * Entry on the facility Temporary Equipment Log |

|  |  |
| --- | --- |
| 8.2 Record Retention | Temporary equipment documentation shall be maintained using the current filing system for the project (e.g. unified filing system, well file system) as follows:   * Temporary Equipment Log – Maintained on location either electronically stored (e.g. Livelink, Projects Drive, SharePoint) or hard copy in the Unified Filing System, as long as it is accessible to the location at any time. Maintain for current year plus 2 additional years. * Temporary Equipment hardcopies of work package (e.g. checklists, MOC, JSA, work permit/WCC) – File for current year plus 2 additional years. |

# TOOL OPS0077A-PR01-TO.01

### Engine-Driven Temporary Equipment Checklist

**NOTE: Steps 1 and 2 must be complete before scheduling or commencement of any inspection/evaluation**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Step 1 Equipment Requestor | **Equipment Requestor** | | | | | | Phone: | | | | Date: |
| MOC Initiated:  Yes  No | | | | | | MOC Number: | | | | |
| Name: | | | | | | Fax: | | | | |
| Location: | | | | Well No.: | | After Hours/Cell Phone: | | | | |
| Ship to: |  | | | | | Offshore destination: | |  | | |
| **Vendor/Equipment Details** | | | | | | Vendor: | | | | |
| Equipment will be at location for approximately     days. | | | | | | Vendor Contact: | | | | |
| Charge Code: | | Equipment owner:  Drilling  Completion  Construction  Well Servicing  Production  Other: | | | | | Equipment ID number and description: | | | |
| Is this temporary production equipment?  Yes  No  If yes, contact Regulatory Affairs for approval and complete [Part A line item 48](#Reg_Affairs) of this checklist. | | | | | | | | | | |
| **Equipment Placement at Offshore Location (check one)** | | | | | | | | | | |
| **Unclassified Area –** Equipment will be located more than 40' from an API Class 1, Div. 2, Group D area and more than 50' from a potential leak source as defined in 6.6 Classification of Potential Leak Sources.  During Operation Equipment Will Be:  Unattended or Continuously Attended (Reason) Monitor for Heat/Fire No SSDS Tie In (Variance Req)  *Complete* ***Part A*** *of checklist.* | | | | | | | | | | |
| **Within 40' of Class1, Div 2 area or within 50' of a potential leak source** as defined in 6.6 Classification of Potential Leak Sources.  During Operation Equipment Will Be:  Unattended or  Continuously Attended (Reason) Monitor for Heat/Fire No SSDS Tie In (Variance Required)  Equipment Not Approved For Operation in Hazardous Areas *Complete* ***Parts A and B*** *of checklist.* | | | | | | | | | | |
| **Class 1, Div. 2 Area -** Equipment will be used within an API Class 1 Div 2 area per facility hazardous area classification drawings.  During Operation Equipment Will Be:  Unattended or  Continuously Attended (Reason) Monitor for Heat/Fire No SSDS Tie In (Variance Req)  ***Equipment must be approved for use in Class 1, Div 2 Areas*** *Complete* ***Parts A, B, and C*** *of checklist.* | | | | | | | | | | |
| NOTE: Engine-driven equipment shall not be located in API Class 1, Div. 1 areas. | | | | | | | | | | |
| Step 2  Vendor | **Vendor:** | | | * Complete step 2 information below and checklist part A, parts A and B, or parts A, B, and C based on equipment location selected in step 1 above. * Provide function test documentation. * Forward checklist with equipment. | | | | | | | |
| **Vendor** | | | | | Phone: | | | | Date Needed: | |
| Company: | | | | | Fax: | | | | | |
| Contact: | | | | | After Hours/Cell Phone: | | | | | |
| Additional Info: | | | | | Person Inspecting Equipment: | | | | | |
| Date Slings Inspected: | | | | | | | | | | |
| Step 3  3rd Party Inspector | **Designated Inspector:** | | | * Complete step 3 information below and checklist part(s) based on equipment location. * If any requirements are not met, complete [Nonconformance](#Non_conformance) section (see page 6) of this checklist and contact Equipment Requestor for instructions. * Affix inspection tag when/if inspection complete. * Send completed checklists/function test results with equipment to Offshore Location. | | | | | | | |
| **Approved 3rd Party Inspector** | | | | | Phone: | | | | | Date: |
| Location: | | | | | Email or Fax: | | | | | |
| Contact: | | | | | Cell Phone: | | | | | |
| Step 4  Offshore | **Designated Inspector:** | | | * Verify Vendor and Inspector columns of the checklist have been completed. * Verify appropriate tag is affixed. * Complete the Offshore Location column of the checklist. * If no tag, affix tag after inspection (Offshore Location column of checklist). * Log equipment on the Temporary Equipment Log. | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Part A** – Unclassified Area | | NOTE: If the Temporary Equipment: 1) arrives damaged or is perceived to be damaged in transit, 2) is acquired through field-to field transfer, or 3) asset chooses to bypass 3rd party inspection process, then the Offshore Location shall complete all boxes in the “Offshore Location” column, including the “NA” boxes. | | | | | Vendor | | Inspector | | Offshore Location | |
| General Requirements (All Locations) | | | | | (Yes, No, or NA) | | | | | |
| ***After Placement of Equipment*** | | | | | | | | | | |
| 1 | Emergency egress routes between process areas and the quarters, temporary refuge, and designated assembly area are unobstructed. | | | | NA | | NA | |  | |
| 2 | Accesses to the primary, secondary, or tertiary means of escape are unobstructed. | | | | NA | | NA | |  | |
| 3 | Access to critical safety equipment or controls (e.g. fire pumps, shutdown stations, and firefighting equipment) are unobstructed. | | | | NA | | NA | |  | |
| 4 | Engine exhaust directed away from personnel and occupied buildings (e.g. ventilation intakes, doors, and openings). | | | | NA | | NA | |  | |
| ***Equipment Safety*** | | | | | | | | | | |
| 5 | Engine exhaust is fitted with spark arrester. | | | |  | |  | |  | |
| 6 | Engine is equipped with automatic air intake shutdown that is clearly visible, labeled, and function tested. | | | |  | |  | |  | |
| 7 | A visual inspection confirms the engine exhaust is in good condition and void of excessive corrosion.  NOTE: In situations where exhaust insulation impedes a visual inspection, a written report of inspection with corresponding pictures may be used to satisfy this requirement provided the inspection report and pictures occurred within the last 12 months and are attached to the checklist. | | | |  | |  | |  | |
| 8 | Inspector and vendor have successfully performed function test of fuel isolation valve and shutdown capability of engine over speed, vibration, and low oil. | | | |  | |  | |  | |
| 9 | Record of function-tested equipment, including safety devices, has been reviewed. | | | |  | |  | |  | |
| 10 | Commission safety equipment before startup. | | | | NA | | NA | |  | |
| 11 | Moving equipment parts that can cause injury to personnel have proper guards in place. | | | |  | |  | |  | |
| 12 | Guards or insulation are provided on surfaces that operate at or above 140°F to prevent contact with individuals during normal operations. | | | |  | |  | |  | |
| 13 | Welding leads are in good condition with no damage to insulation. | | | |  | |  | |  | |
| 14 | A grounding point in good condition and free of corrosion is provided. | | | |  | |  | |  | |
| 15 | A minimum #10 AWG grounding conductor is provided. | | | |  | |  | |  | |
| 16 | All electrical components are grounded to the equipment skid as outlined in Part A, line item 17. | | | |  | |  | |  | |
| 17 | Equipment or equipment skid is grounded to the platform structure using:   * a welded connection or * static discharge grounding that is visibly grounded to platform structure with stranded copper wire or a conductive strap. Connection to equipment skid or platform structure to be bolted with a #10 AWG conductor or larger.   If equipment skid has electrical generating components that exceed the output of an alternator, is the equipment skid grounded to the platform structure using:   * grounding conductors/wires attached to platform structure by drilling and tapping a hole in the steel and using a 16 threads per inch, 0.375ʺ or larger diameter stud Burndy-type KC Servit post or stainless steel bolt with a ring type cable terminator and * grounding wire sizes as follows (see ENG0039SP Section 12 and OPS0177A) * Up to 160A (FLA) – #6 AWG * 161A (FLA) to 400A (FLA) – #2 AWG * 401A (FLA) to 800A (FLA) – #2/0 AWG * 801A (FLA) to 1280A (FLA) – #4/0 AWG * Above 1281A (FLA) – see NEC Table 250.122 | | | | NA | | NA | |  | |
|  | ***Fire Prevention*** | | | | | | | | | |
| 18 | If equipment is not suitable for use in hazardous (classified) areas and is operated at the facility (all areas), a category 2 Hot Work Permit has been issued for the operation. | | | | NA | NA | |  | |
| 19 | Surfaces with a temperature in excess of 400°F (204°C) are protected from exposure to accidental releases of hydrocarbon liquids. | | | |  |  | |  | |
| 20 | A site-specific refueling procedure has been documented and is used in pre-job safety meetings. | | | | NA | NA | |  | |
| ***Lifting and Hoisting*** | | | | | | | | | |
| 21 | OPS0055-PR02-TO.10 Pre-Shipping Inspection Checklist form has been completed and all “No” answers have been properly addressed. | | | |  |  | |  | |
| 22 | A signed and stamped copy of OPS0055-PR02-TO.12 UAD Lifted Equipment Certification Form is on file. | | | |  |  | |  | |
| ***Fall Protection*** | | | | | | | | | |
| 23 | Self-closing double bar swinging gates (or equivalent) are installed for access to elevated walkways/platforms where fall hazards exist. | | | |  |  | |  | |
| 24 | Adequate fall protection equipment and/or attachment points (e.g. handrails, fall restraint systems, self retracting lifelines) are installed on equipment to protect workers from fall hazards when working at a height of 6' or more. | | | |  |  | |  | |
| 25 | Ladder fall prevention safety devices are installed for ladders 15' and taller (e.g. rail system, self retracting lifeline). | | | |  |  | |  | |
| 26 | Handrails, with mid-rails installed, are in good condition and free of corrosion. | | | |  |  | |  | |
| 27 | Walking surfaces are in good condition, there are no unguarded openings, trip hazards, or corrosion. | | | |  |  | |  | |
| ***How will the equipment be operated: Continuously Attended, or Unattended? (Use one section only.)*** | | | | | | | | | |
| **Continuously Attended** | | | 28 | All Continuous Attendance Checklist (OPS0077A‑PR01‑TO.04) requirements been met. | NA | NA | |  | |
| 29 | Orange Continuous Attendance Required tag is attached to equipment. | NA |  | |  | |
| 30 | **Part A Only:** Yellow Approved Temporary Equipment tag attached to equipment with “Continuous Attendance” box checked. | NA |  | |  | |
| **Unattended Operation** | | | 31 | Reciprocating and centrifugal pumps/compressors and other equipment with increased fire hazard are equipped by the vendor to be monitored for excessive heat/fire using fusible or Polyflow loop fire detection protection per API RP 14C table C-1 and Shell Regulatory Alert 2001-2). |  |  | |  | |
| 32 | Equipment is equipped with tie-in to facility SSDS that has been function tested. |  |  | |  | |
| 33 | Equipment is connected to facility SSDS. | NA | NA | |  | |
| 34 | **Part A Only:** Yellow Approved Temporary Equipment tag attached to equipment “Fusible or Polyflow Loop Fire Detection” box checked. | NA |  | |  | |
| 35 | Engine is equipped with automatic air intake shutdown in case of a runaway (see 30 CFR 250.510). |  |  | |  | |
|  | | ***Environmental/Hoses*** | | | | | | | | | |
| 36 | | Skids are equipped with drip pans and/or containment spaces and outlet connections with plugs. | | |  |  | |  | |
| 37 | | Hoses are in good condition, unpainted with hoses and clamps meeting OEM specifications. | | |  |  | |  | |
| 38 | | Fuel hoses approved for fuel service. | | |  |  | |  | |
| 39 | | Off-skid hoses are in good condition and rated for the working pressures to which they will be subjected. | | |  |  | |  | |
| 40 | | Off-skid hoses routed or guarded to limit trip hazards, blind spots, and accidental damage from impact (e.g. dropped items in lift areas). | | | NA | NA | |  | |
| 41 | | Off-skid hose connections over open grating are placed over skidpans to prevent leakage overboard. | | | NA | NA | |  | |
| 42 | | Hoses or flexible lines in flammable (e.g. methanol) or combustible (above flash point) fluid service are:   * manufactured of metallic or conductive materials, * certified by documentation from the manufacturer to have an end-to-end resistance of less than 1.0 MΩ, or * provided with external grounding connections on both ends, per OPS0177A-SP01 Section 4.1 Grounding, for connecting to ground | | |  |  | |  | |
| 43 | | Hoses in fuel gas applications are metal bellows-type. | | |  |  | |  | |
| NOTE: Periodically inspect hose connections. | | | | | | | | | |
| ***Natural Gas Powered Equipment*** | | | | | | | | | |
| 44 | | Is equipped with a low-tension ignition system of a low fire hazard type and designed and maintained to minimize the release of sufficient electrical energy to cause ignition of an external combustible mixture. | | |  |  | |  | |
| 45 | | Have all high-tension leads isolated from any grounded metallic surface. | | |  |  | |  | |
| 46 | | Have an automatically operated fail safe fuel block and bleed valve provided on the edge of the skid for all engines that closes each time the engine stops. This valve will block all fuel gas to the skid and bleed all fuel gas off of the skid downstream of the valve upon shutdown activation or loss of control power. | | |  |  | |  | |
| 47 | | Have all vents from fuel gas-operated devices vented to a safe location outboard away from the skid or enclosure and a minimum of 15' horizontally from engine exhaust. Each engine driver has a separate vent system. | | |  |  | |  | |
| BSEE Submittal Requirements For Approval Of Temporary Production Equipment | | | | | | | | | |
| 48 | | Information was provided to Regulatory Affairs as outlined in OPS0077A-PR01, Section 7.1 BSEE Approval Requirements and approval was obtained, as required. | | | NA | NA | |  | |
| NOTE: Temporary Production Equipment must be isolated from platform processes when not in use. | | | | | | | | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Part B – Within 40' of an API Class 1, Div 2 Area or Within 50’of a Potential Leak Source | Additional Requirements | | | | Vendor | Inspector | Offshore Location |
| **(Yes, No, or NA)** | | |
| 1 | Hot equipment surfaces in excess of 725°F are protected from exposure to combustible gases as required by API RP 14C. | | |  |  |  |
| 2 | Batteries have no exposed terminals. | | |  |  |  |
| ***How will the equipment be operated: Continuously Attended or Unattended? (Use one section only.)*** | | | | | | |
| **Continuously Attended**  Note: Items in similar table in [Part A](#A_Continous_Attended) are also required. | | 3 | Blue Approved Temporary Equipment tag is attached to equipment with the “Continuous Attendance” box checked. | NA |  |  |
| **Unattended Operation**  Note: Items in similar table in [Part A](#A_Unattended) are also required. | | 4 | Electrical components (e.g. devices, switches, wiring, terminal boxes) meet API Class 1, Div. 2, Group D requirements per OPS0177A. |  |  |  |
| 5 | Starter is explosion proof or air driven and alternator is explosion proof. |  |  |  |
| 6 | Radiator fan blades are constructed of aluminum or plastic. |  |  |  |
| 7 | Enclosed equipment has gas detection meeting OPS0077A-PR01, Section 5.5, Fire & Gas Detection Requirements. |  |  |  |
| 8 | Blue Approved Temporary Equipment tag is attached to equipment with “Fusible or Polyflow Loop Fire Detection” box checked. | NA |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Part C – API Class 1,  Div. 2 Area | Additional Requirements | | Vendor | Inspector | Offshore Location | |
| (Yes, No, or NA) | | | |
| Equipment must be approved for use in API Class 1, Div. 2 areas with Green Approved Temporary Equipment tag, with the “Class 1, Division 2, Group D” box checked, is attached to equipment. | NA | |  | |  |
| OIM/PIC must authorize use of engine driven equipment in API Class 1, Div. 2 areas.  **Signature:** | NA | | NA | |  |

NOTE: Engine-driven equipment shall not be located in API Class 1, Div. 1 areas.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Nonconformance | **If any requirements are not met, notify the offshore location immediately.**  **Person notified at offshore location:** | | **Instructions from offshore location:** | | | |
| Position | | Print Name | Signature | Date | Accepted | Rejected |
| Vendor Equipment Inspector | |  |  |  |  |  |
| Vendor Supervisor | |  |  |  |  |  |
| 3rd Party Inspector | |  |  |  |  |  |
| Offshore Inspector 1 | |  |  |  |  |  |
| Offshore Inspector 2 | |  |  |  |  |  |
| Offshore Inspector 3 | |  |  |  |  |  |
| SAEP or AEP3 Offshore | |  |  |  |  |  |
| Comments |  | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Re-inspection | Complete a new temporary equipment checklist after equipment is in operation:   * every 45 days, * whenever the equipment is relocated to an area with a higher area classification rating, or * after repairs are made to the equipment (to ensure the equipment still meets requirements of this standard). | | | | | |
| Position | | Print Name | Signature | Date | Accepted | Rejected |
| Offshore Inspector | |  |  |  |  |  |
| Comments | Include reason for re-inspection. | | | | | |

# TOOL OPS0077A-PR01-TO.02

### Electric Motor-Driven and Electrical Temporary Equipment Checklist

**Note: Steps 1 and 2 must be complete before scheduling or commencement of any inspection/evaluation**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Step 1 Equipment Requestor | **Equipment Requestor** | | | | | | | Phone: | | | | Date: |
| MOC Initiated:  Yes  No | | | | | | | MOC Number: | | | | |
| Name: | | | | | | | Fax: | | | | |
| Location: | | | | Well No.: | | | After Hours/Cell Phone: | | | | |
| Ship to: |  | | | | | | Offshore Destination: | | |  | |
| **Vendor/Equipment Details** | | | | | | | Vendor: | | | | |
| Equipment will be at location for approximately     days. | | | | | | | Vendor Contact: | | | | |
| Charge Code: | | | Equipment owner:  Drilling  Completion  Construction  Well Servicing  Production  Other: | | | | | Equipment ID number & description: | | | |
| Is this temporary production equipment?  Yes  No  If yes, contact Regulatory Affairs for approval and complete [Part A line item 37](#Reg_Affairs) of this checklist. | | | | | | | | | | | |
| **Equipment Placement at Offshore Location (check one)** | | | | | | | | | | | |
| **Unclassified Area –** Equipment will be located more than 40' from an API Class 1, Div. 2, Group D area and more than 50' from a potential leak source as defined in 6.6 Classification of Potential Leak Sources.  During Operation Equipment Will Be:  Unattended or Continuously Attended (Reason) Monitor for Heat/Fire No SSDS Tie In (Variance Req.)  *Complete* ***Part A*** *of checklist.* | | | | | | | | | | | |
| **Within 40' of Class1 Div 2 area or within 50' of a potential leak source** as defined in 6.6 Classification of Potential Leak Sources.  During Operation Equipment Will Be:  Unattended or  Continuously Attended (Reason) Monitor for Heat/Fire No SSDS Tie In (Variance Req.)  Equipment Not Approved For Operation in Hazardous Areas *Complete* ***Parts A and B*** *of checklist.* | | | | | | | | | | | |
| **Class 1, Div. 2 Area -** Equipment will be used within an API Class 1 Div 2 area per facility hazardous area classification drawings.  During Operation Equipment Will Be:  Unattended or  Continuously Attended (Reason) Monitor for Heat/Fire No SSDS Tie In (Variance Req.)  ***Equipment must be approved for use in Class 1 Div 2 Areas*** *Complete* ***Parts A, B, and C*** *of checklist.* | | | | | | | | | | | |
| **Class 1, Div. 1 Area** – Equipment will be used inside an API Class 1, Div. 1 area.  ***Equipment must be approved for use in API Class 1, Div. 1 areas*** *Complete checklist* ***Parts A, B, C, and D.*** | | | | | | | | | | | |
| Step 2  Vendor | **Vendor:** | | * Complete step 2 information below and checklist part A, parts A and B, or A, B, and C based on equipment location selected in step 1 above. * Provide function test documentation * Forward checklist with equipment. | | | | | | | | | |
| **Vendor** | | | | | | Phone: | | | Date Needed: | | |
| Company: | | | | | | Fax: | | | | | |
| Contact: | | | | | | After Hours/Cell Phone: | | | | | |
| Additional Info: | | | | | | Person Inspecting Equipment: | | | | | |
| Date Slings Inspected: | | | | | | | | | | | |
| Step 3  3rd Party Inspector | **Designated Inspector:** | | * Complete step 3 information below and checklist parts based on equipment location. * If any requirements are not met, complete [Nonconformance](#Non_conformance) section (see page 7) of this checklist and contact Equipment Requestor for instructions. * Affix inspection tag when/if inspection complete. * Send completed checklists/function test results with equipment shipped to Offshore Location. | | | | | | | | | |
| **Approved 3rd Party Inspector** | | | | | Phone: | | | | | | Date: |
| Location: | | | | | Email or Fax: | | | | | | |
| Contact: | | | | | Cell Phone: | | | | | | |
| Step 4  Offshore | **Designated Inspector:** | | * Verify Vendor and Inspector columns of the checklist are completed. * Verify appropriate tag is affixed. * Complete the Offshore Location column of the checklist. * If no tag, affix tag after inspection (Offshore Location column of checklist). * Log equipment on the Temporary Equipment Log. | | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Part A – Unclassified Area | NOTE: If the Temporary Equipment: 1) arrives damaged or is perceived to be damaged in transit, 2) is acquired through field-to field transfer, or 3) asset chooses to bypass 3rd party inspection process, then the Offshore Location shall complete all boxes in the “Offshore Location” column, including the “NA” boxes. | | | | | Vendor | Inspector | Offshore Location | |
| General Requirements (All Locations) | | | | | (Yes, No, or NA) | | | |
| ***After Placement of Equipment*** | | | | | | | | |
| 1 | Emergency egress routes between process areas and the quarters, temporary refuge, and designated assembly area are unobstructed. | | | | NA | NA |  | |
| 2 | Accesses to the primary, secondary, or tertiary means of escape are unobstructed. | | | | NA | NA |  | |
| 3 | Access to critical safety equipment or controls (e.g. fire pumps, shutdown stations, and firefighting equipment) is unobstructed. | | | | NA | NA |  | |
| ***Equipment Safety*** | | | | | | | | |
| 4 | Local shutdown device is installed, labeled, clearly visible, and tested. | | | |  |  |  | |
| 5 | Moving equipment parts that can cause injury to personnel has proper guards in place. | | | |  |  |  | |
| 6 | Guards or insulation are provided on surfaces that operate at or above 140°F to prevent contact with individuals during normal operations. | | | |  |  |  | |
| 7 | Welding machines leads are in good condition with no insulation damage. | | | |  |  |  | |
| 8 | Record of function-tested equipment, including safety devices, has been reviewed. | | | |  |  |  | |
| 9 | Commission safety equipment before startup. | | | | NA | NA |  | |
| ***Fire Prevention*** | | | | | | | | |
| 10 | If equipment is not suitable for use in hazardous (classified) areas and is operated at the facility (all areas), a category 2 Hot Work Permit has been issued for the operation. | | | | NA | NA |  | |
| 11 | Surfaces with a temperature in excess of 400°F (204°C) are protected from exposure to accidental releases of hydrocarbon liquids. | | | |  |  |  | |
| ***Lifting and Hoisting*** | | | | | | | | |
| 12 | OPS0055-PR02-TO.10 Pre-Shipping Inspection Checklist form has been completed and all “No” answers have been properly addressed. | | | |  |  |  | |
| 13 | A signed and stamped copy of OPS0055-PR02-TO.12 UAD Lifted Equipment Certification Form is on file. | | | |  |  |  | |
| ***Fall Protection*** | | | | | | | | |
| 14 | Self-closing double bar swinging gates (or equivalent) are installed for access to elevated walkways/platforms where fall hazards exist. | | | |  |  |  | |
| 15 | Adequate fall protection equipment and/or attachment points (e.g. handrails, fall restraint systems, self-retracting lifelines) are installed on equipment to protect workers from fall hazards when working at a height of 6' or more. | | | |  |  |  | |
| 16 | Ladder fall prevention safety devices are installed for ladders 15' and taller (e.g. rail system, self-retracting lifeline). | | | |  |  |  | |
| 17 | Handrails, with mid-rails installed, are in good condition and free of corrosion. | | | |  |  |  | |
| 18 | Walking surfaces are in good condition, there are no unguarded openings, trip hazards, or corrosion. | | | |  |  |  | |
| ***Electrical*** | | | | | | | | |
| 19 | Equipment or equipment skid is grounded to the platform structure using:   * a welded connection or * an insulated equipment grounding conductor with continuous outer finish that is either green or green with one or more yellow stripes, terminated with a corrosion-resistant connection   Grounding conductors/wires attached to the platform structure by drilling and tapping a hole in the steel and using a 16 threads per inch, 0.375-in. diameter (or larger) stud Burndy-type KC Servit post or stainless steel bolt with a ring type cable terminator.  Grounding wires meet the following size requirements (see ENG0039SP Sec. 12 and OPS0177A:   * Up to 160A (FLA) - #6 AWG * 161A (FLA) to 400A (FLA) - #2 AWG * 401A (FLA) to 800A (FLA) - #2/0 AWG * 801A (FLA) to 1280A (FLA) - #4/0 AWG * Above 1281A (FLA), see NEC Table 250.122 | | | | NA | NA |  | |
| 20 | All wiring on the skid is either 1) CLX cable, 2) Rigid Conduit, 3) Extra Hard Usage SO cable, or 4) Marine cable per ENG0039SP. | | | |  |  |  | |
| 21 | Electrical cables and equipment are in good condition. | | | |  |  |  | |
| 22 | Electrical enclosures are watertight (NEMA 4) and cable penetrations are made with watertight connections. | | | |  |  |  | |
| 23 | Liquid-tight (seal-tight) flexible conduits are less than 3' in length. | | | |  |  |  | |
| ***How will the equipment be operated: Continuously Attended or Unattended? (Use one section only.)*** | | | | | | | | |
| **Continuously Attended** | | 24 | All Continuous Attendance Checklist (OPS0077A‑PR01‑TO.04) requirements been met. | | NA | NA |  | |
| 25 | Orange Continuous Attendance Required tag is attached to equipment. | | NA |  |  | |
| 26 | **Part A Only:** Yellow Approved Temporary Equipment tag attached to equipment with “Continuous Attendance” box checked. | | NA |  |  | |
| **Unattended Operation** | | 27 | Reciprocating and centrifugal pumps/compressors and other equipment with increased fire hazard are equipped by the vendor to be monitored for excessive heat/fire using fusible or Polyflow loop fire detection protection per API RP 14C table C-1 and Shell Regulatory Alert 2001-2. | |  |  |  | |
| 28 | Equipment is equipped with tie-in to facility SSDS that has been function tested. | |  |  |  | |
| 29 | Equipment is connected to facility SSDS. | | NA | NA |  | |
| 30 | **Part A Only:** Yellow Approved Temporary Equipment tag attached to equipment “Fusible or Polyflow Loop Fire Detection” box checked. | | NA |  |  | |
| ***Environmental/Hoses*** | | | | | | | | |
| 31 | Skids are equipped with drip pans and/or containment spaces and outlet connections with plugs. | | | |  |  |  | |
| 32 | Hoses are in good condition, unpainted with hoses and clamps meeting OEM specifications. | | | |  |  |  | |
| 33 | Off-skid hoses are in good condition and rated for the working pressures to which they will be subjected. | | | |  |  |  | |
| 34 | Off-skid hoses routed or guarded to limit trip hazards, blind spots, and accidental damage from impact (e.g. dropped items in lift areas). | | | | NA | NA |  | |
| 35 | Off-skid hose connections over open grating are placed over skidpans to prevent leakage overboard. | | | | NA | NA |  | |
| 36 | Hoses or flexible lines in flammable (e.g. methanol) or combustible (above flash point) fluid service are:  • manufactured of metallic or conductive materials,  • certified by documentation from the manufacturer to have an end-to-end resistance of less than 1.0 MΩ, or  • provided with external grounding connections on both ends, per OPS0177A-SP01 section 4.1 Grounding, for connecting to ground | | | |  |  |  | |
| NOTE: Periodically inspect hose connections. | | | | | | | | |
| BSEE Submittal Requirements For Approval Of Temporary Production Equipment | | | | | | | | |
| 37 | Information was provided to Regulatory Affairs as outlined in OPS0177A-SP01 Section 7.1 BSEE Approval Requirements and approval obtained, as required. | | | NA | | NA | |  |
| NOTE: Temporary Production Equipment must be isolated from platform processes when not in use. | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Part B – Within 40' of an API Class 1, Div 2 Area or  Within 50’of a Potential Leak Source | Additional Requirements | | | | Vendor | Inspector | | Offshore Location | |
| (Yes, No, or NA) | | | | |
| 1 | Hot equipment surfaces in excess of 725°F protected from exposure to combustible gases as required by API RP 14C. | | |  | |  | |  | |
| 2 | Batteries have no exposed terminals. | | |  | |  | |  | |
| ***How will the equipment be operated: Continuously Attended or Unattended? Use one section only.*** | | | | | | | | |
| **Continuously Attended**  Note: Items in similar table in [Part A](#A_Continuous_Attend) are also required. | | 3 | Part B Only: Blue Approved Temporary Equipment tag is attached to equipment with “Continuous Attendance” box checked. | NA | NA | |  | |
| **Unattended Operation**  Note: Items in similar table in [Part A](#A_Unattended) are also required. | | 4 | Electrical components (e.g. devices, switches, wiring, terminal boxes) meet Class I, Div. 2, Group D requirements per OPS0177A. |  |  | |  | |
| 5 | All three-phase electric motors are TEFC and chemical duty type and all single-phase motors are explosion-proof. |  |  | |  | |
| 6 | All motor starters and circuit breakers on the skid are explosion-proof (NEMA 7). |  |  | |  | |
| 7 | Enclosed equipment has gas detection meeting OPS0077A-PR01, Section 5.5, Fire & Gas Detection Requirements. |  |  | |  | |
| 8 | **Part B Only:** Blue Approved Temporary Equipment tag is attached to equipment with “Fusible or Polyflow Loop Fire Detection” box checked. | NA |  | |  | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Part C** – API Class 1, Div. 2 Area | **Additional Requirements** | | Vendor | Inspector | Offshore Location |
| (Yes, No, or NA) | | |
| 1 | Electrical components (e.g. devices, switches, wiring, terminal boxes) meet API Class I, Div. 2, Group D requirements per OPS0177A. |  |  |  |
| 2 | All three-phase electric motors are TEFC and chemical duty type and all single-phase motors are explosion-proof. |  |  |  |
| 3 | All motor starters and circuit breakers on the skid are explosion-proof (NEMA 7). |  |  |  |
| 4 | Reciprocating and centrifugal pumps/compressors and other equipment with increased fire hazard are monitored for excessive heat/fire per API RP 14C table C-1 and Shell Regulatory Alert 2001-2). |  |  |  |
| 5 | Enclosed equipment has gas detection meeting OPS0077A-PR01, Section 5.5, Fire & Gas Detection Requirements. |  |  |  |
| 6 | Green Approved Temporary Equipment tag is attached to equipment with the “API Class 1, Div. 2, Group D” box checked. | NA |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Part D – API Class 1,  Div. 1 Area | Additional Requirements | | Vendor | Inspector | Offshore Location |
| (Yes, No, or NA) | | |
| 1 | All electric motors explosion-proof. |  |  |  |
| 2 | All electrical devices (including lighting), wiring, fittings, and cable terminators on the skid listed and labeled for API Class I, Div. 1 or installed in a NEMA 7 (explosion-proof) box. |  |  |  |
| 3 | Seals and drains are provided per OPS0177A, API 14F, and NEC. |  |  |  |
| 4 | Wiring methods are per API Class 1, Div. 1, per OPS0177A, API 14F, and NEC (also see ENG0039SP). |  |  |  |
| 5 | Green Approved Temporary Equipment tag is attached to equipment with “API Class 1, Div. 1, Group D” box checked. | NA |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Nonconformances | **If any requirements are not met, notify the offshore location immediately.**  **Person notified at offshore location:** | | **Instructions from offshore location:** | | | |
| Position | | Print Name | Signature | Date | Accepted | Rejected |
| Vendor Equipment Inspector | |  |  |  |  |  |
| Vendor Supervisor | |  |  |  |  |  |
| Inspector | |  |  |  |  |  |
| Offshore Inspector 1 | |  |  |  |  |  |
| Offshore Inspector 2 | |  |  |  |  |  |
| Offshore Inspector 3 | |  |  |  |  |  |
| SAEP or AEP3 Offshore | |  |  |  |  |  |
| Comments |  | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Re-inspection | Complete a new temporary equipment checklist after equipment is in operation:   * every 45 days, * whenever the equipment is relocated to an area with a higher area classification rating, or * after repairs are made to the equipment (to ensure the equipment still meets requirements of this standard). | | | | | |
| Position | | Print Name | Signature | Date | Accepted | Rejected |
| Offshore Inspector | |  |  |  |  |  |
| Comments | Include reason for re-inspection. | | | | | |

# TOOL OPS0077A-PR01-TO.03

### Temporary Tank and Vessels Checklist\*

**Note: Steps 1 and 2 must be complete before scheduling or commencement of any inspection/evaluation**

*\*This checklist is intended for tanks containing flammable or combustible material (potential static ignition source) used for specialty purposes. Excluded: tanks used for routine transport of materials (e.g. tote tanks, cutting boxes)*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Step 1  Equipment Requestor | **Equipment Requestor** | | | | | | Phone: | | | Date: |
| MOC Initiated:  Yes  No | | | | | | MOC Number: | | | |
| Name: | | | | | | Fax: | | | |
| Location: | | | | Well No.: | | After Hours/Cell Phone: | | | |
| Ship to: |  | | | | | Offshore destination: |  | | |
| **Vendor/Equipment Details** | | | | | | Vendor: | | | |
| Equipment will be at location for approximately     days. | | | | | | Vendor Contact: | | | |
| Charge Code: | | | Equipment owner:  Drilling  Production  Well Servicing  Construction  Completion  Other: | | | Equipment ID number & description:  Tank Capacity:  Contents (intended): | | | |
| Is this temporary production equipment?  Yes  No  If yes, contact Regulatory Affairs for approval and complete [Part A line item 35](#Reg_Affairs) of this checklist. | | | | | | | | | |
| **Equipment Placement at Offshore Location (check one)** | | | | | | | | | |
| **Unclassified Area –** Equipment will be located more than 40' from an API Class 1, Div. 2, Group D area and MORE THAN 50' from a Potential Flammable Liquids or Gas Release Point/potential hydrocarbon leak source.  *Complete* ***Part A*** *of checklist.* | | | | | | | | | |
| **Within 40' of API Class 1, Division 2 area or within 50’ of a potential leak source** as defined in 6.6 Classification of Potential Leak *Complete* ***Parts A and B*** *of checklist.* | | | | | | | | | |
| **Class 1, Div. 2 Area -** Equipment will be used within an API Class 1, Div 2 area per facility hazardous area classification drawings.  ***Equipment must be approved for use in Class 1 Div 2 Areas*** *Complete* ***Parts A, B, and C*** *of checklist.* | | | | | | | | | |
| **API Class 1, Div. 1 Area** – Equipment will be used inside an API Class 1, Div. 1 area.  ***Equipment must be approved for use in API Class 1, Div. 1 areas.*** *Complete* ***Parts A, B, and C*** *of checklist.* | | | | | | | | | |
| Step 2  Vendor | **Vendor:** | | * Complete step 2 information below and checklist part A, parts A and B, or parts A, B, and C based on equipment location selected in step 1 above. * Provide function test documentation. * Forward checklist with equipment. | | | | | | | |
| **Vendor** | | | | | Phone: | | | Date Needed: | |
| Company: | | | | | Fax: | | | | |
| Contact: | | | | | After Hours/Cell Phone: | | | | |
| Additional Info: | | | | | Person Inspecting Equipment: | | | | |
| Date Slings Inspected: | | | | | | | | | |
| Step 3  3rd Party Inspector | **Designated Inspector:** | | * Complete step 3 information below and checklist parts based on equipment location. * If any requirements are not met, complete [Nonconformance](#Non_conformance) section (see page 5) of this checklist and contact Equipment Requestor for instructions. * Affix Inspection tag when/if inspection complete. * Send completed checklists/function test results with equipment to Offshore Location. | | | | | | | |
| **Approved 3rd Party Inspector** | | | | | Phone: | | | | Date: |
| Location: | | | | | Email or Fax | | | | |
| Contact: | | | | | Cell Phone: | | | | |
| Step 4  Offshore | **Designated Inspector:** | | * Verify Vendor and Inspector columns of the checklist have been completed. * Verify appropriate tag is affixed. * Complete the Offshore Location column of the checklist. * If no tag, affix tag after inspection (Offshore Location column of checklist). * Log equipment on the Temporary Equipment Log. | | | | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Part A – Unclassified Area | NOTE: If the Temporary Equipment: 1) arrives damaged or is perceived to be damaged in transit, 2) is acquired through field-to field transfer, or 3) asset chooses to bypass 3rd party inspection process, then the Offshore Location shall complete all boxes in the “Offshore Location” column, including the “NA” boxes. | | Vendor | Inspector | Offshore Location |
| General Requirements (All Locations) | | (Yes, No, or NA) | | |
| ***After Placement of Equipment*** | | | | |
| 1 | Emergency egress routes between process areas and the quarters, temporary refuge, and designated assembly area are unobstructed. | NA | NA |  |
| 2 | Accesses to the primary, secondary, or tertiary means of escape are unobstructed. | NA | NA |  |
| 3 | Access to critical safety equipment or controls (e.g. fire pumps, shutdown stations, and firefighting equipment) are unobstructed. | NA | NA |  |
| ***Equipment Safety*** | | | | |
| 4 | Nameplate is legible, identifies specification (designed, constructed, tested, and stamped), meets Requisition/Purchase Order requirements. |  |  |  |
| 5 | Certification records are provided for pressure and/or vacuum relief valves prior to shipping. **Note: PSV shall be tested every 12 months.** |  |  |  |
| 6 | Each tank or vessel containing any material is labeled per HAZCOM requirements (HSE0011). |  |  |  |
| 7 | Equipment skid is grounded to the platform structure using:   * a welded connection or * static discharge grounding that is visibly grounded to platform structure with stranded copper wire or a conductive strap. Connection to equipment skid or platform structure to be bolted with a #10 AWG conductor or larger. | NA | NA |  |
| 8 | Equipment been function-tested at vendor yard and safe operation confirmed. |  |  |  |
| ***Lifting Hoisting*** | | | | |
| 9 | OPS0055-PR02-TO.10 Pre-Shipping Inspection Checklist form has been completed and all “No” answers have been properly addressed. |  |  |  |
| 10 | A signed and stamped copy of OPS0055-PR02-TO.12 UAD Lifted Equipment Certification Form is on file. |  |  |  |
| ***Fire Prevention*** | | | | |
| 11 | If equipment is not suitable for use in hazardous (classified) areas and is operated at the facility (all areas), a category 2 Hot Work Permit been issued for the operation. | NA | NA |  |
| ***Fall Protection*** | | | | |
| 12 | Self-closing double bar swinging gates (or equivalent) are installed for access to elevated walkways/platforms where fall hazards exist. |  |  |  |
| 13 | Adequate fall protection equipment and/or attachment points (e.g. handrails, fall restraint systems, self retracting lifelines) are installed on equipment to protect workers from fall hazards when working at a height of 6' or more. |  |  |  |
| 14 | Ladder fall prevention safety devices are installed for ladders 15' and taller (e.g. rail system, self retracting lifeline). |  |  |  |
| 15 | Handrails, with mid-rails installed, are in good condition and free of corrosion. |  |  |  |
| 16 | Walking surfaces are in good condition, there are no unguarded openings, trip hazards, or corrosion. |  |  |  |
| ***Environmental/Hoses*** | | | | |
| 17 | Inlet and outlet valves and connections are in good condition, non-leaking. |  |  |  |
| 18 | Hoses in good condition, unpainted with hoses and clamps meeting OEM specifications. |  |  |  |
| 19 | If elevated, there is suitable drip pan/containment space and outlet connection with a plug. |  |  |  |
| 20 | Liquid level gauges are protected from accidental breakage, with quick closing valves in place, and spill containment is provided. |  |  |  |
| 21 | If provided, “thief hatch” seal and seat provide a tight seal. |  |  |  |
| 22 | Hoses or flexible lines in flammable (e.g. methanol) or combustible (above flash point) fluid service are:  • manufactured of metallic or conductive materials,  • certified by documentation from the manufacturer to have an end-to-end resistance of less than 1.0 MΩ, or  • provided with external grounding connections on both ends, per OPS0177A-SP01 Section 4.1 Grounding, for connecting to ground |  |  |  |
| NOTE: Periodically inspect hose connections. | | | | |
| ***Temporary Pipework*** | | | | |
| 23 | All components of the temporary pipework (chicksan/flexible) system are rated for the same working pressure. |  |  |  |
| 24 | All pipework components are equally matched and are of the same figure number (e.g. verify that there are no mismatched hammer unions). |  |  |  |
| 25 | Wing nut connections are of equal size, type, and figure number. |  |  |  |
| 26 | There are no male or female 2" figure 602 or 1002 pipework or components installed. **NOTE: These are banned on Shell locations.** |  |  |  |
| 27 | Off-skid hoses are in good condition and rated for the working pressures to which they will be subjected. |  |  |  |
| 28 | Off-skid hoses routed or guarded to limit trip hazards, blind spots, and accidental damage from impact (e.g. dropped items in lift areas). | NA | NA |  |
| 29 | Hoses are visually checked for integrity as part of routine pollution inspections and are maintained leak-free. | NA | NA |  |
| 30 | Hoses secured to deck to prevent hazardous movement. | NA | NA |  |
| 31 | The number of connections has been minimized. | NA | NA |  |
| 32 | Off-skid hose connections over open grating are placed over skidpans to prevent leakage overboard. | NA | NA |  |
| 33 | Non-threaded, “make and break” type (e.g. crow’s foot) connections are equipped with safety cables or chains to prevent hose whipping in case of connection failure. |  |  |  |
| 34 | Yellow Approved Temporary Equipment tag is attached to equipment. | NA |  |  |
| **BSEE Submittal Requirements For Approval Of Temporary Production Equipment** | | | | |
| 35 | Information was provided to Regulatory Affairs as outlined in Section 7.1 BSEE Approval Requirements and approval was obtained, as required. | NA | NA |  |
| **NOTE: Temporary Production Equipment must be isolated from platform processes when not in use.** | | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Part B – Within 40' of an API Class 1, Div. 2 Area or 50’of a Potential Leak Source | Additional Requirements | | Vendor | Inspector | Offshore Location |
| (Yes, No, or NA) | | |
| 1 | Blue Approved Temporary Equipment tag is attached to equipment. | NA |  |  |
| 2 | If equipment contains engine-driven or electrical components, a completed OPS0077A-PR01-TO.01 Engine-Driven Temporary Equipment Checklist or OPS0077A-PR01-TO.02 Electric Motor-Driven and Electrical Temporary Equipment Checklist is attached indicating equipment meets requirements for operation in areas within 40' of an API Class1, Div. 2 area or 50’ of a potential leak source as defined in 6.6 Classification of Potential Leak Sources. |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Part C – API Class 1, Div. 1 and Div. 2 Area | Additional Requirements | | Vendor | Inspector | Offshore Location |
| (Yes, No, or NA) | | |
| 1 | Green Approved Temporary Equipment tag is attached to equipment. | NA |  |  |
| 2 | If equipment contains engine-driven or electrical components, a completed OPS0077A-PR01-TO.01 Engine-Driven Temporary Equipment Checklist or OPS0077A-PR01-TO.02 Electric Motor-Driven and Electrical Temporary Equipment Checklist is attached indicating equipment meets requirements for operation in an API Class 1, Div. 1 or Div. 2 areas. |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Nonconformance | **If any requirements are not met, notify the offshore location immediately.**  **Person notified at offshore location:** | | **Instructions from offshore location:** | | | |
| Position | | Print Name | Signature | Date | Accepted | Rejected |
| Vendor Equipment Inspector | |  |  |  |  |  |
| Vendor Supervisor | |  |  |  |  |  |
| Inspector | |  |  |  |  |  |
| Offshore Inspector 1 | |  |  |  |  |  |
| Offshore Inspector 2 | |  |  |  |  |  |
| Offshore Inspector 3 | |  |  |  |  |  |
| SAEP or AEP3 Offshore | |  |  |  |  |  |
| Comments |  | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Re-inspection** | Complete a new temporary equipment checklist after equipment is in operation:   * every 45 days, * whenever the equipment is relocated to an area with a higher area classification rating, or * after repairs are made to the equipment (to ensure the equipment still meets requirements of this standard). | | | | | |
| **Position** | | **Print Name** | **Signature** | **Date** | **Accepted** | **Rejected** |
| Offshore Inspector | |  |  |  |  |  |
| **Comments** | Include reason for re-inspection. | | | | | |

# TOOL OPS0077A-PR01-TO.04

### Continuous Attendance Checklist

Equipment that is not approved to be operated in a hazardous (classified) area shall not be operated in hazardous (classified) areas as defined by the facilities area classification drawings and API RP 500.

If equipment not suitable for hazardous (classified) areas is installed within 40' of Class1 Div 2 area or within 50' of a potential leak source as defined in OPS0077A-PR01 Section 6.6 Classification of Potential Leak Sources, it must be monitored for excessive heat and fire per BSEE regulations or when equipment is not tied into location SSDS it shall be continuously attended according to the requirements of this checklist.

Temporary equipment operations shall comply with the following checklist items.

|  |  |  |
| --- | --- | --- |
| ***Before operating the equipment*** | | |
| No. | Item | Complete ☑ |
| 1 | A Category 2 Hot Work permit (refer to HSE0008 Safe Work Planning and Authorization) has been issued and approved by the Person in Charge (PIC). Required when equipment not suitable for use in hazardous (classified) areas is operated at the facility (applies to all areas). |  |
| 2 | When operating the equipment within 40' of Class1 Div 2 area or within 50' of a potential leak source as defined in Section 6.6 Classification of Potential Leak Sources, attendant is using a portable gas detector (with audible, visual warnings adequate for the environment and rated for the gas type to be detected) in the immediate vicinity of the equipment to continuously monitor gas levels. Prior to each use, the detector shall be:   * calibrated, and * successfully pass a bump test (refer to HSE0008-PR05) |  |
| 3 | Attendant possesses a written shutdown procedure (approved by the PIC and discussed in the pre-job safety meeting) that lists actions the attendant shall take if a fire, gas, or SSDS event occurs. The attendant shall be capable and prepared for shutdown of the equipment when/if one of the following occurs:   * a portable gas detector detects a Lower Explosive Limit (LEL) reading in excess of 5, * a facility ESD, * a 20% LEL alarm from an exterior gas detector or gas detector inside of any building within 40' of the equipment location, or * the equipment experiences excessive heat or fire as alerted by a temperature-sensing device. |  |
| 4 | Attendant is competent to detect gas releases by sight, sound, and odor. Attendant understands expectations for responding to a produced hydrocarbon release or leak (refer to HSE0029A-PR04-TO.07 Expectations for Responding to Loss of Primary Containment). |  |
| 5 | Attendant is competent to monitor and detect fire or gas using appropriate equipment and platform SSDS events and immediately execute shutdown of the equipment. |  |
| 6 | Attendant is competent in the use of firefighting equipment. |  |
| 7 | Attendant can immediately recognize equipment conditions that, if left undetected, could result in the equipment becoming an ignition source or catch on fire. |  |
| ***During operation of the equipment*** | | |
| 8 | Attendant is observing the equipment while in operation and during the cool-down period for a minimum of 10 minutes. NOTE: Some equipment may require a longer cool-down period. |  |
| 9 | Attendant is located in the immediate area (10' to 15') of the equipment shut down.  (Check during operation.) |  |
| ***If continuously attending multiple pieces of equipment***  Ensure that the following conditions have been met before one person is assigned to monitor multiple pieces of equipment. | | |
| 10 | Attendant is able to monitor, detect, and immediately shut down all equipment when fire, gas, and/or facility SSDS events are encountered. |  |
| 11 | When installed, remote-controlled shutdowns for each piece of equipment are located together along an escape route so that during a platform SSDS event, all equipment can be quickly shut down. |  |
| 12 | Manual shutdown requirements for temporary equipment are included in local operating procedures, permit, and JSAs. |  |
| 13 | Attendant is located in the immediate area (10' to 15') of remote shutdowns for all of the temporary equipment that he/she is assigned to monitor. |  |

# TOol OPS0077A-PR01-TO.05

### Inspection Tags for Temporary Equipment

|  |  |
| --- | --- |
| Tag Description | See OPS0077A-PR01 Section 3.5 for descriptions and uses of the tags. Examples follow. |

APPROVED Temporary Equipment

For use in UNCLASSIFIED Areas ONLY

Date Tag Installed:

\_\_\_\_ / \_\_\_\_ / \_\_\_\_\_\_

Shell

All engines, pumps and compressors in hydrocarbon service will be monitored for excessive heat or fire by:

Location Name / Lease No.

3rd Party Inspector Signature

SAEP or AEP3 Signature

Offshore Inspector Signature

Continuous Attendance (attach Orange tag)

OR

Fusible or Polyflow Loop Fire Detection

Work Permit No.

Yellow Temporary Equipment Approval Tag – Approved for Use in Unclassified Areas

**APPROVED Temporary Equipment**

For use in HAZARDOUS (Classified) Areas

Shell

Date Tag Installed:

\_\_\_\_ / \_\_\_\_ / \_\_\_\_\_\_

**Class 1, Div. 1, Group D**

Equipment to be used in:

Class 1, Div. 2, Group D

All engines, pumps and compressors in hydrocarbon service will be monitored for excessive heat or fire by:

Offshore Inspector Signature

Continuous Attendance (attach Orange tag)

SAEP or AEP3 Signature

OR

Location Name / Lease No.

Fusible or Polyflow Loop Fire Detection

Work Permit No.

3rd Party Inspector Signature

Green Temporary Equipment Approval Tag – Approved for Use in Hazardous (Classified) Areas

Date Tag Installed:

\_\_\_\_ / \_\_\_\_ / \_\_\_\_\_\_

APPROVED Temporary Equipment

For use in locations within 40' of a Class 1, Div. 2 area or within 50' of a potential leak source

Shell

All engines, pumps and compressors in hydrocarbon service will be monitored for excessive heat or fire by:

SAEP or AEP3 Signature

3rd Party Inspector Signature

Offshore Inspector Signature

Location Name / Lease No.

Continuous Attendance (attach Orange tag)

Work Permit No.

OR

Fusible or Polyflow Loop Fire Detection

Blue Temporary Equipment Approval Tag –

Approved for use in areas within 40' of a Class 1, Div. 2 area or within 50’ of a potential leak source

CONTINUOUS ATTENDANCE REQUIRED

Date Tag Installed:

\_\_\_\_ / \_\_\_\_ / \_\_\_\_\_\_

Shell

Equipment to be used in:

Location Name / Lease No.

SAEP or AEP3 Signature

3rd Party Inspector Signature

Offshore Inspector Signature

Class 1, Div. 1, Group D

Unclassified Area

Class 1, Div. 2, Group D

Within 40' of a Class 1, Div 2 area

or 50’ of a potential leak source

Continuous Attendance Checklist completed and attached.

Work Permit No.

Orange Continuous Attendance Required Tag

REJECTED Equipment

DO NOT USE

Date Tag Installed:

\_\_\_\_ / \_\_\_\_ / \_\_\_\_\_\_

Shell

Reason Rejected

Location

Signature

Date

Red Rejected Equipment Tag

# Tool OPS0077A-PR01-TO.06

### Temporary Equipment Log

**Facility:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Equipment Description:** | | **Unique ID/Serial #:** | | |
| **Work Permit Type:** | | **Work Permit #:** |
| **Equipment Requestor:** | | **MOC #:** | | **MOC Expires:** |
| **Location of Installed Equipment**  **(deck and area):** | **In what type of area will equipment be installed?**  API Class 1, Div. 1 (reference facility drawings)  API Class 1, Div. 2 (reference facility drawings)  Less than 40' from an API Class 1, Div. 2 boundary or less than 50’ from a potential leak source as defined in Section 6.6 of OPS0077A-PR01  More than 40' from an API Class 1, Div. 2 boundary and more than 50' from a potential leak source as defined in Section 6.6 of OPS0077A-PR01 | | **Type of tag attached to equipment:** | |
| **Comments:** | |
| **Date Installed:**  **Date Removed:**  **Next Inspection Due:** | **Is equipment suitable for operation in hazardous (classified) areas?**  Not Rated  API Class 1, Div. 1, Group D  API Class 1, Div. 2, Group D | |
| **Equipment Description:** | | **Equipment ID number & description:** | | |
| **Work Permit Type:** | | **Work Permit #:** |
| **Equipment Requestor:** | | **MOC #:** | | **MOC Expires:** |
| **Location of Installed Equipment**  **(deck & area):** | **In what type of area will equipment be installed?**  API Class 1, Div. 1 (reference facility drawings)  API Class 1, Div. 2 (reference facility drawings)  Less than 40' from an API Class 1, Div. 2 boundary or less than 50’ from a potential leak source as defined in Section 6.6 of OPS0077A-PR01  More than 40' from an API Class 1, Div. 2 boundary and more than 50' from a potential leak source as defined in Section 6.6 of OPS0077A-PR01 | | **Type of tag attached to equipment:** | |
| **Comments:** | |
| **Date Installed:**  **Date Removed:**  **Next Inspection Due:** | **Is equipment suitable for operation in hazardous (classified) areas?**  Not Rated  API Class 1, Div. 1, Group D  API Class 1, Div. 2, Group D | |

# Tool OPS0077A-PR01-TO.09

### Temporary Buildings Checklist

**Note: Steps 1 and 2 must be complete before scheduling or commencement of any inspection/evaluation**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Step 1 Equipment Requestor** | **Equipment Requestor** | | | | | | | Phone: | | | | Date: |
| MOC Initiated:  **Yes**  **No** | | | | | | | MOC Number: | | | | |
| Name: | | | | | | | Fax: | | | | |
| Location: | | | | | Well No.: | | After Hours/Cell Phone: | | | | |
| Ship to: |  | | | | | | Offshore destination: | |  | | |
| **Vendor/Equipment Details** | | | | | | | Vendor: | | | | |
| Equipment will be at location for approx.       days. | | | | | | | Vendor Contact: | | | | |
| Charge Code: | | | | Equipment owner:  Drilling  Production  Well Servicing  Construction  Completion  Other | | | Equipment description: | | | | |
| **Has Marine Supervisor been consulted to address stability, deck loading, and support issues?**  Y  N | | | | | | | | | | | |
| Use of building (e.g. storage, office, galley, living/berthing): | | | | | | | | Building Manufacturer: | | | |
| Will building be occupied?  **Yes**  **No**  ***If building is to be occupied, refer to HSE0149-PR01 for requirements and process for siting the building.*** | | | | | | | | Building Serial Number: | | | |
| **NOTE: All temporary buildings require an MOC with a GA drawing indicating installation location of building.** | | | | | | | | | | | |
| Check when this approved checklist has been electronically attached to the MOC | | | | | | | | | | | |
| **Equipment Placement at Offshore Location** *(check one):* | | | | | | | | | | | |
| **Unclassified Area –** Equipment will be located more than 40' from an API Class 1, Div. 2, Group D area and more than 50' from a potential leak source as defined in 6.6 Classification of Potential Leak Sources.  *Complete* ***Part A*** *of checklist.* | | | | | | | | | | | |
| **Within 40' of Class1 Div 2 area or within 50' of a potential leak source** as defined in 6.6 Classification of Potential Leak Sources.Equipment must be suitable for Class 1, Division 2, Group D.  *Complete* ***Parts A & B*** *of checklist.* | | | | | | | | | | | |
| **NOTE: Temporary Buildings shall not be located in Class 1 Division 1 locations.** | | | | | | | | | | | |
| **Step 2**  **Vendor** | **Vendor:** | | * Complete Step 2 information below and checklist part A or parts A and B based on equipment location selected in step 1. * Provide function test documentation. * Forward checklist with equipment. | | | | | | | | | |
| **Vendor** | | | | | | | Phone: | | | Date Needed: | |
| Company: | | | | | | | Fax: | | | | |
| Contact: | | | | | | | After Hours/Cell Phone: | | | | |
| Additional Info: | | | | | | Person Inspecting Equipment: | | | | Date Slings Inspected: | |
| **Step 3**  **3rd Party Inspector** | **Designated Inspector:** | | * Complete Step 3 information below and checklist parts based on equipment location. * If any requirements are not met, complete [Nonconformance](#Non_Conformance) section (see page 4) of this checklist and contact Equipment Requestor for instructions. * Affix Inspection tag when/if inspection complete. * Send completed checklists/function test results with equipment to Offshore Location. | | | | | | | | | |
| **Approved 3rd Party Inspector** | | | | | | | Phone: | | | | Date: |
| Location: | | | | | | | Email or Fax: | | | | |
| Contact: | | | | | | | Cell Phone: | | | | |
| **Step 4 Offshore** | **Designated**  **Inspector:** | | | * Verify Vendor and Inspector columns of the checklist have been completed. * Verify appropriate tag is affixed. * Complete the Offshore Location column of the checklist. * If no tag, affix tag after inspection (Offshore Location column of checklist). * Log equipment on the Temporary Equipment Log. * Contact Structures TA and/or HSE Technical Safety for approval of additional requirements (Part A) if building is to be occupied. * Place original in appropriate file and deliver copies to others listed; post in building. | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Part A** – Unclassified Equipment | NOTE: If the Temporary Equipment: 1) arrives damaged or is perceived to be damaged in transit, 2) is acquired through field-to field transfer, or 3) asset chooses to bypass 3rd party inspection process, then the Offshore Location shall complete all boxes in the “Offshore Location” column, including the “NA” boxes. | | | V | I | OL |
| General Requirements (All Locations) | | | **(Yes, No, or NA)** | | |
| ***Placement of Equipment*** | | | | | |
| 1 | The location general alarm signal can be heard inside the building under normal service conditions (refer to [1.10](#_1.6_Fire_and)\* below). | | NA | NA |  |
| 2 | The building is installed in accordance with approved location at facility in accordance with MOC/Structures TA direction. | | NA | NA |  |
| 3 | Emergency egress routes between process areas and the quarters, temporary refuge, and designated assembly area are unobstructed. | | NA | NA |  |
| 4 | Access to the primary, secondary, or tertiary means of escape are unobstructed. | | NA | NA |  |
| 5 | Access to critical safety equipment or controls (e.g. fire pumps, shutdown stations, and fire fighting equipment) are unobstructed. | | NA | NA |  |
| ***Lifting & Hoisting*** | | | | | |
| 6 | OPS0055-PR02-TO.10 Pre-Shipping Inspection Checklist form has been completed and all “No” answers have been properly addressed. | |  |  |  |
| 7 | A signed and stamped copy of OPS0055-PR02-TO.12 UAD Lifted Equipment Certification Form is on file. | |  |  |  |
| 8 | A weight decal indicating the actual weight of the skid as loaded on the transport vehicle has been installed. | |  |  |  |
| ***Building General:*** | | | | | |
| 9 | Building has appropriate signage as required by BSEE and USCG (e.g. max. occupancy, egress route, and station bill). | |  |  |  |
| 10 | Pouch is installed on the door for holding fire and gas detector testing records. | |  |  |  |
| 11 | Record of function-tested equipment, including safety devices, has been reviewed. | |  |  |  |
| 12 | Yellow Approved Temporary Equipment tag attached to equipment. | |  |  |  |
| ***Electrical and Utilities*** | | | | | |
| 13 | Building electrical supply connections are either 480, 208, or 120 VAC with ground. | |  |  |  |
| 14 | Building is grounded using (*see ENG0039 Section 8.2 and OPS0177A)*:  a welded connection between the skid or equipment and the platform structure, or  an insulated equipment grounding conductor with a continuous outer finish that is either green or green with one or more yellow stripes, terminated with corrosion resistant connection. | |  |  |  |
| 15 | The requirements of Section [1.8](#_1.8_Electrical_and_1)\* Electrical and Wiring Connections in the attached Clarification of Requirements are met. | |  |  |  |
| ***Fire and Gas Systems:*** | | | | | |
| 16 | Buildings with stored combustible material or unattended electrical equipmet, including lights, have smoke detrection. | |  |  |  |
| 17 | Communication systems are compatible with host’s emergency response system. | |  |  |  |
| 18 | Audible alarm and public address communications are designed to be heard from within the building. | |  |  |  |
| 19 | Fire protection systems (portable or/and fixed extinguishers) are fully functional and provided with current documentation including certified test records and maintenance and operating instructions. | |  |  |  |
| 20 | Commission fire and gas devices, functionality, and interfaces before use. | | NA | NA |  |
| ***Fall Protection*** | | | | | |
| 21 | Adequate fall protection equipment and/or attachment points (e.g. handrails, fall restraint systems, self-retracting lifelines) are installed on equipment to protect workers from fall hazards when working at a height of 6' or more. | |  |  |  |
| 22 | Self-closing double bar swinging gates (or equivalent) are installed for access to elevated walkways/platforms where fall hazards exist. | |  |  |  |
| 23 | Handrails, with mid-rails installed, are in good condition and free of corrosion. | |  |  |  |
| 24 | Ladder fall prevention safety devices are installed for ladders 15' and taller (e.g. rail system, self-retracting lifeline). | |  |  |  |
| Additional Requirements for Temporary Occupied Buildings (Questions 1-14)  EXCEPTION: Answer only questions 15a-c if the building is used to perform or monitor operation-critical tasks in hazardous areas and meets requirements in Section 1.3 in Clarification of Requirements. | | | V | I | OI\*\* |
| (Yes, No, or NA) | | |
| 1 | Dual personnel exits are provided in accordance with [1.6](#_1.6_Dual_Personnel)\*. | |  |  |  |
| 2 | Fire and smoke system meet requirements of [2.1](#_2.1_Fire_and_1)\*. | |  |  |  |
| 3 | Combustible gas system meet requirements of [2.2](#_2.2_Combustible_Gas_1)\*. | |  |  |  |
| 4 | Carbon monoxide system meet requirements of [2.3](#_2.3_Carbon_Monoxide)\*. | |  |  |  |
| 5 | Utility connections, including sewer (black and gray), potable water, and electrical are included/installed. | |  |  |  |
| 6 | Building is USCG-approved, A-60 rated, and the shell constructed of steel or equivalent. | |  |  |  |
| 7 | Building signage meets requirements of [1.7](#_1.6_Signage)\* as follows: | | | | |
| **Interior** | a | Egress Route or Station Bill posted in a conspicuous location. |  |  |  |
| b | Illuminated/glow-in-the-dark exit signs on each door. |  |  |  |
| c | General Alarm signage. |  |  |  |
| d | Emergency equipment lockers labeled according to contents. |  |  |  |
| e | USCG Letter of Certification (posted under protective coating) referencing building serial number, signed and dated by USCG. |  |  |  |
| **Exterior** | f | Attached stainless steel (SS) plate that includes:  building use (e.g. office, sleeper) with maximum occupancy for sleeper buildings and  serial number that corresponds to the USCG Letter of Certification posted inside the building. |  |  |  |
| 8 | MOC used to verify the following: | | | | |
|  | a | Siting location. | NA | NA |  |
| b | Anticipated blast rating approval by TA. | NA | NA |  |
| c | Building blast rating is equal to or greater than anticipated blast overpressure. | NA | NA |  |
| d | Windows and doors blast rating. | NA | NA |  |
| e | Stacking arrangement. | NA | NA |  |
| 9 | Tie-down is secure. CE Group Approval (see HSE0149-PR01 Section 4.3) | | NA | NA |  |
| 10 | Items of heavy equipment, furniture, and stacks of material are secure. (refer to HSE0149-PR01 Section 4.5) | | NA | NA |  |
| 11 | Building is located clear of the vent path of any engine exhausts. | | NA | NA |  |
| 12 | Emergency egress doors face away from the process area. | | NA | NA |  |
| 13 | The specific requirements for galleys, change rooms and laundry buildings in [3.1](#_3.1_General_Alarm_1)\*, [3.2](#_2.1_Alarm_Requirements)\* and [3.3](#_2.3_Fire_Protection)\* are met. | |  |  |  |
| 14 | The fire protection and safety requirements for living quarters/berthing in [4.1](#_3.5_Fire_Protection)\* are met. | |  |  |  |
| *\*Reference the paragraph in Clarification of Requirements beginning on page 5 of this form.*  *\*\*Note: Offshore Inspector**shall complete the role of Designated Responsible Individual (DRI) defined in HSE0149 with consultation of the Structures TA and Civil Engineering (CE) Group and HSE Technical Safety after approval by the Facility Leadership.* | | | | | |
| **NOTE: Only buildings meeting the exception at top of this table need to answer question 15a-c below.** | | | | | |
| 15a | List the operation-critical tasks to be done in the building:  **CAUTION: No other activities are allowed in this building.** | | | | |
| 15b | List the job functions that will occupy the building to perform the tasks listed above:  **CAUTON: No other individuals are allowed in this building.** | | | | |
| 15c | Concurrence of OIM or Field Supervisor: | | Date: | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Part B** - Class 1 Div. 2 and  Shell Extended Area | Requirements for buildings in a Class 1 Div 2 area or within 40' of an API Class 1, Div 2 area as defined on the facility’s area classification drawing or within 50' of a potential leak source as defined in 6.6 Classification of Potential Leak Sources. | | V | I | OL |
| **(Yes, No, or NA)** | | |
| 1 | All exterior electrical equipment meets Class I, Division 2 requirements per OPS0177A (e.g. switches, wiring, terminal boxes). See [1.8](#_1.8_Electrical_and_1)\* of Clarification of Requirements. |  |  |  |
| 2 | Non-approved interior electrical equipment is located inside an air-conditioned (sealed and vapor-tight) building, without a gas source, where the building’s interior is protected by combustible gas detection as detailed in API RP 500 section 6.5 and Section [2.2](#_2.2_Combustible_Gas_1)\* below. |  |  |  |
| 3 | All window and wall A/C units listed and labeled for Class I Division 2 Hazardous locations? See [1.8](#_1.8_Electrical_and_1)\* of Clarification of Requirements. |  |  |  |
| 4 | All central-type HVAC units have the exterior electrical equipment suitable for hazardous locations? See [1.8](#_1.8_Electrical_and_1)\* of Clarification of Requirements. |  |  |  |
| 5 | Blue or Green Approved Temporary Equipment tag has been attached to building. | NA |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Nonconformance** | **If any requirements are not met, notify the offshore location immediately.**  **Person notified at offshore location:** | | **Instructions from offshore location:** | | | |
| Position | | Print Name | Signature | Date | Accepted | Rejected |
| Vendor Equipment Inspector | |  |  |  |  |  |
| Vendor Supervisor | |  |  |  |  |  |
| Inspector | |  |  |  |  |  |
| Offshore Inspector 1 /DRI | |  |  |  |  |  |
| **A copy of this completed checklist shall be posted in the building per HSE0149-PR01, Section 3.1, by the Offshore Inspector/DRI.** | | | | | | |
| Offshore Inspector 2 | |  |  |  |  |  |
| Offshore Inspector 3 | |  |  |  |  |  |
| SAEP or AEP3 Offshore | |  |  |  |  |  |
| **Comments** |  | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Re-inspection** | Complete a new temporary equipment checklist after equipment is in operation:  every 45 days,  whenever the equipment is relocated to an area with a higher area classification rating, or  after repairs are made to the equipment (to ensure the equipment still meets requirements of this standard). | | | | | |
| **Position** | | **Print Name** | **Signature** | **Date** | **Accepted** | **Rejected** |
| Offshore Inspector | |  |  |  |  |  |
| **Comments** | Include reason for re-inspection. | | | | | |

## Clarification of Requirements

### 1 General

|  |  |
| --- | --- |
| 1.1 Occupied Building | A building is defined as an occupied building if:   * it meets the USCG definition of an accommodation module, * an individual spends an average of 3 or more hours per day over any 1 week period inside, * 6 or more people are inside at any given time, or * a group (2 to 5 individuals) spends an average of 100 hours or more per week inside. |

|  |  |
| --- | --- |
| 1.2 Accommoda-tion Module | A living quarters structure housing more than 6 people at any one time or 2 or more people per shift. It includes sleeping, mess, medical treatment, recreational, toilet, shower, washing, and office spaces and corridors serving these spaces. It does not include buildings in industrial areas such as laboratories, workshops, wireline units, and mud logger offices. |

|  |  |
| --- | --- |
| 1.3 Excluded Building | This document does not apply to these portable structures:   * Welding enclosures * Asbestos or refractory remediation enclosures * Cabins located on heavy machinery * Weather shelters * Small tents used as cool down areas, to provide shade within the process unit, and smoking areas, which are occupied by less than 10 people * Lightweight plastic portable toilets * Occupied portable buildings, such as wireline buildings, measurement while drilling (MWD) buildings, mud logging buildings, directional driller control buildings, and X-ray buildings, used to perform or monitor operations-critical tasks that meet the following requirements: * Occupancy is limited to authorized personnel and kept to the minimum. * The building is not used for breaks, meetings, or activities not directly related to the operations-critical task. * The Management of Change (MOC) documentation for building placement includes the [Temporary Buildings Checklist](#_Temporary_Buildings_Checklist) above with Part A, lines a, b, and c completed as an attachment (Offshore only). |

|  |  |
| --- | --- |
| 1.4 Unoccupied (Unmanned) Building | An unoccupied (unmanned) building is a building that does not meet any of the definitions for an occupied/manned building.  Unoccupied buildings with stored combustible material or unattended electrical equipment (excluding lights) require smoke detection. |

|  |  |
| --- | --- |
| 1.5 Weight Decal | Each individual temporary building skid shall have a weight decal indicating the actual weight of the skid (as loaded on the transport vehicle to the receiving terminal) attached to the skid in a prominent location. This decal shall be installed on the skid at the time of shipment to the receiving terminal and shall be in place at the time of receipt at the receiving terminal. |

|  |  |
| --- | --- |
| 1.6 Dual Personnel Exits | Occupied temporary buildings shall include dual personnel exits. See HSE0149-PR01 for location and blast capacity. |

|  |  |
| --- | --- |
| 1.7 Signage | The following signage shall be required for occupied temporary buildings.  Building interior:   * Egress route or station bill posted in a conspicuous location * Illuminated/glow-in-the-dark exit signs on each door * General alarm signage * Labels for emergency equipment lockers listing contents (e.g. the word "LIFEJACKETS" or the IMO Resolution A.760(18) symbol) and include a count * USCG Letter of Certification (posted under protective coating) dated and signed by USCG Commander referencing building serial number and SS plate (found on the building exterior)   Building exterior:   * Attached SS plate that includes: * building use (e.g., office, sleeper) with maximum occupancy for sleeper buildings, and * serial number that corresponds to the USCG Letter of Certification posted inside the building. |

|  |  |
| --- | --- |
| 1.8 Electrical and Wiring Connections | Electrical and wiring connections shall use:   * water-tight connectors or vapor tight common (grounded) penetration plates, * Class 1, Division 2 certified window and wall air conditioner units, * lighting panels with all circuits labeled, * cables and wiring adequately sized per NEC table 310.16 as a minimum unless approved by the Electrical Technical Authority, * Arc Fault Circuit Interrupters (AFCIs) to protect all 120V, single-phase, 15 and 20 ampere branch circuits supplying outlets\* installed in dining rooms, bedrooms, closets, hallways, recreation rooms, offices, or similar rooms except in branch circuits to fire and gas equipment or other emergency service equipment * Ground Fault Circuit Interrupters (GFCIs) to protect all 120V, single phase, 15 and 20 ampere receptacles\* installed outdoors, in bathrooms and kitchens and when the receptacle is within 6’ of the outside edge of a sink unless it is used to power fire and gas equipment or other emergency service equipment, and * Rigid Metal Conduit (RMC), Intermediate Metal Conduit (IMC), Electrical Metallic Tubing (EMT) or steel armored cable for branch circuits to fire and gas equipment or other emergency service equipment   \*NOTE: The NEC defines an outlet as a point on the wiring system at which current is taken to supply utilization equipment and a receptacle as a contact device installed at the outlet for the connection of an attachment plug. Thus an outlet could be a receptacle, terminal block, light fixture, or other device that supplies current to a piece of equipment. |

|  |  |
| --- | --- |
| 1.9 Hazardous (Classified) Locations | If the temporary building houses an electrical source of ignition (i.e. electrical equipment not suitable for hazardous [classified] locations), the building interior shall be air conditioned (sealed and vapor-tight) protected by combustible gas detection as detailed in API RP 500 Section 6.5 and [Section 2.2](#_3.3_Combustible_Gas) of these clarifications.   * Warning: The building shall not contain a hydrocarbon source. |

|  |  |
| --- | --- |
| 1.10 General Alarm | The location general alarm signal must be audible from within the building under normal service conditions. |

### 2 Alarm and Detection Systems for All Occupied Buildings

|  |  |
| --- | --- |
| 2.1 Fire and Smoke Detection | Per ENG0112 Fire and Gas Detection, fire detection system requirements for temporary/portable occupied buildings are the same as for permanent quarters.  Temporary/portable occupied buildings shall be:   * equipped with smoke detectors, * equipped with an audible alarm that sounds inside the building upon detection of heat or smoke, * equipped with: * separate output contacts to interconnect with the host’s fire and gas detection system to sound fire alarms, or * an external NEMA 7 feeder circuit breaker that is tripped upon detection of fire or smoke, and * provided with current documentation (which shall be shipped with the building) including: * certified test records, and * maintenance and operating instructions.   For buildings with heat sources (e.g. water heaters and portable heaters), heat (thermal activity) detection is required. |

|  |  |
| --- | --- |
| 2.2 Combustible Gas Detection | Per ENG0112 Fire and Gas Detection, gas detection system requirements for temporary/portable occupied buildings are the same as for permanent quarters.  Temporary living quarters shall be provided with combustible gas detectors located suitably at potential routes of combustible gas ingress into the living quarters, including external doors and inside the HVAC inlet duct. Combustible gas detectors placed in air ducts shall be suitable for turbulent air flow service and rated for air duct applications.  If living quarters have a central air conditioning system(s), at least 3 air duct gas detectors shall be installed in the fresh air intake duct(s). At least 2 gas detectors shall be installed at entrances directly or indirectly exposed to a process area(e.g. the process area is above or below the entrance).  If the living quarters do not have a central air conditioning system, at least 2 gas detectors shall be installed at each entrance.  These detectors shall be:   * fully functional, * calibrated at 20% LEL and 40% LEL alarms, * equipped with an audible alarm that sounds inside the building upon detection of 20% LEL, * equipped with: * a separate output that remotely shuts down power to the building (external to the building) upon detection of 40% LEL to the host facility control system, or * an external NEMA 7 feeder circuit breaker that is tripped upon detection of 40% LEL, * equipped with separate output contacts to interconnect with the host’s fire and gas detection system to sound 20% and 40% LEL alarms, and * provided with current documentation (which shall be shipped with the building) including: * certified test records, and * maintenance and operating instructions.   For unoccupied buildings, gas detection is not required unless the interior of the building contains a source of ignition and the building is located within 40' of a hazardous (classified) location. A source of ignition includes any electrical equipment that is not certified for use in a hazardous (classified) area. |

|  |  |
| --- | --- |
| 2.3 Carbon Monoxide Detection | Carbon monoxide (CO) monitors shall be provided at the HVAC inlets to detect ingress of CO from external sources or turbine and diesel exhausts. When HVACs are at 100% air recirculation, CO monitors shall be located inside the entrance areas in locations that will allow CO detection.  CO monitors shall be:   * fully functional, * calibrated by standard gas provided by the detector manufacturer, * capable of providing a warning of CO at a concentration of 25 ppm, * equipped with an audible alarm that: * sounds inside the building upon detection of CO above 200 ppm, and * is placed in such a manner that will awaken all sleeping occupants, * equipped with separate output contacts to interconnect with the host’s central alarm system, and * provided with current documentation (which shall be shipped with the building) including: * certified test record, and * maintenance and operating instructions. |

|  |  |
| --- | --- |
| 2.4 Detection Systems Testing | Prior to offshore mobilization of the building, the vendor shall verify that:   * the fire, combustible gas, and CO detectors have been functionally tested, and * testing records are maintained in a pouch installed on the door of each temporary building (include the name of the technician and the testing date).   After the building has been connected offshore, Operations personnel shall perform a re-test of the fire and gas detection system, and the building shall be added to the platform BSEE fire and gas testing schedule. |

|  |  |
| --- | --- |
| 2.5 Location and Fire/ Explosion/ Toxic Gas Design | Refer to HSE0149-PR01 for additional requirements relating to external fire, explosion, and toxic gas protection for Occupied Buildings. |

### 3 Specific Requirements for Galley/Change Rooms/Laundry Buildings

|  |  |
| --- | --- |
| 3.1 General Alarm Requirements | All alarms from the building’s alarm panel shall be:   * interconnected into the host facility’s alarm system, and * audible throughout the building. |

|  |  |
| --- | --- |
| 3.2 Fire, Smoke, and Gas Detection | * Galley and laundry areas shall be provided with heat (thermal activity) detection. * Galley and shower areas do not require smoke detection due to nuisance tripping. * The building containing these areas shall be provided with combustible gas detection equivalent to that required for living quarters (see [2.2](#_2.2_Combustible_Gas_1)). * Audible alarms shall sound inside the building upon detection of fire, heat, smoke, or gas, and shall de-energize and shut off fuel to the building. |

|  |  |
| --- | --- |
| 3.3 Fire Protection Features | * Galleys that contain deep-fat fryers, grills, and cook tops shall be provided with an automatic fire extinguishing system that covers the range hood and cooking surfaces. * Galleys and laundry facilities, if part of a temporary living quarters, shall be separated from sleeping rooms by A-60 rated walls, ceilings, and floors. * Each of these areas shall be provided with an appropriately sized, multipurpose, portable fire extinguisher. |

### 4 Living Quarters/Berthing

|  |  |
| --- | --- |
| 4.1 Fire Protection and Safety | * An automatic fire suppression system shall not be required in a temporary living quarters when: * fire detection and fire alarms have been provided in accordance with [2.1](#_2.1_Fire_and), and * exits at all elevations lead directly outside the building. * Interior finishes and furnishings shall be substantially less combustible (Flame Spread Index < 50, Smoke Contribution Index < 25). * Multi-class (ABC), hand-portable fire extinguishers shall be provided in temporary living quarters and located near to the exit door with current documentation, including: * a certified test record, and * maintenance and operating instructions. * All personal safety equipment required in the permanent quarters(e.g life jackets, smoke escape hoods) shall be provided in temporary living quarters (see HSE0034 Fire, Explosion, and Evacuation Strategy and Guidance) |

# Guideline OPS0077A-PR01-GL.01

### Fusible Loop Plug Installation

|  |  |
| --- | --- |
| Installation Guidelines | * Fusible elements may be installed in the pneumatic lines of the safety system if the signal generated initiates the proper shut-in functions. Fusible elements should not be installed in a combustible gas supply line that continues to bleed after shutdown. Follow installation guidelines per API Recommended Practice 14C, Table C-1 (see below). * Enclosed classified areas should be equipped with fire detection devices that automatically shut in the hydrocarbon sources, causing the enclosed areas to be classified. A fusible plug system using combustible or non-combustible gas is acceptable. * For enclosed unclassified areas, fusible plug systems using a combustible gas should not be used for fire detection in buildings where personnel sleep (even if the building is classified because of its proximity to a hydrocarbon source).   NOTE: Refer to API Recommended Practice 14C for more information. |

|  |  |  |
| --- | --- | --- |
| **Component** | **Fusible Plug Arrangement** | **Min. # of Plugs** |
| Wellheads | One for each wellhead.\* | — |
| Headers | One for each 10' of header length. | 2 |
| Pressure vessels: | | |
| Vertical vessel | One for each 12" of OD to a maximum of five. | 1 |
| Horizontal vessel | a. Less than 48" OD – one for each 5' of length. | 2 |
|  | b. Greater than 48" OD – two for each 5' of length in two parallel rows. | 4 |
| Atmospheric vessels | One for each vessel process inlet, outlet, and hatch. | — |
| Fired vessels and exhaust heated components | Same as pressure vessels. Additionally, one outside the flame arrestor on fired components. | — |
| Heat exchangers (shell-tube) | One for each end of heat exchanger. | 2 |
| Pumps: | | |
| Reciprocating | One over rod packing. | — |
| Centrifugal | One over each packing box. | — |
| Compressors: | | |
| Reciprocating | One for each cylinder or equivalent coverage. | — |
| Centrifugal | One over compressor case. | — |
| Engines: | | |
| Spark ignition | One over each carburetor or fuel injection valve or equivalent coverage. | — |
| Diesel | One for pump supplying injectors or equivalent coverage. | — |
| Combustion turbines | One for each fuel solenoid, governor valve, and PTO pump. | — |
| \* Not applicable to underwater wellheads or headers.  NOTE: When fusible tubing or other devices (e.g. ultraviolet flame detectors) are used instead of fusible plugs, they should provide the same coverage as outlined above (at minimum). | | |

# Guideline OPS0077A-PR01-GL.02

### Consolidating MOCs by Well/Construction Campaign

|  |  |
| --- | --- |
| Introduction | A single MOC can be used for the Well/Construction Campaign. The MOC is expected to cover the comprehensive list of equipment with location of use found in the Well Prognosis/Safe Work Plan. |

|  |  |
| --- | --- |
| Data to Be Gathered by MOC Initiator | * Equipment description – include potential ignition sources * Equipment purpose * Equipment footprint * Equipment location in the facility |

|  |  |
| --- | --- |
| MOC Duration | MOCs are in effect for a well or well services/construction campaign as follows:   * The original MOC is initiated/requested with a Finish date matching the expected completion date of the well/construction campaign. * Stand-alone MOCs apply for the duration of the original referenced MOC. |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Operations Leadership (OL Screen) Assignments | |  |  | | --- | --- | | OL Screen Assignment | Role | | Approver | On-site OIMs | | Owner | Discipline Lead (Drilling, Construction, Operations, Well Services, etc.) | | Technical Reviewer | Reliability Engineer | | Technical Authority/HSE Impact Reviewer | SME per the MOC E-Tool | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Startup Safety | Pre-Startup Safety Review (PSSR) or Project/Rig Startup Plan will be conducted by the on-site Drilling or Operations HSE Tech with help as shown in the table below.   |  |  | | --- | --- | | If power supply used is… | HSE Tech is assisted by… | | Rig power | Drilling and Completions Electrician | | Location-provided power | Operations SAEP | |

|  |  |
| --- | --- |
| Inspections | Inspections will be performed each time the equipment is requested, and documentation will be maintained with the original MOC as electronic attachments or hard copies.  Temporary equipment inspections will be conducted per OPS0077A-PR01 Temporary Equipment. The inspection process will not change. |

|  |  |
| --- | --- |
| Vendor Changes | Changes in a vendor’s equipment (e.g. additional or replacement like in-kind equipment) require a new, stand-alone MOC for the piece of equipment that is changing. The need for a full routing will be determined by the location’s OIM/PIC, taking into consideration weight, hazardous classifications, etc. that a TA would be responsible for. At a minimum, comments or an attachment explaining the change will be added to the original MOC.  A change of vendor requires a new stand alone MOC covering the new vendor and equipment. |

|  |  |
| --- | --- |
| Equipment Movement and Repositioning | If equipment location changes, local leadership will consult with TAs as necessary. Planned campaign work that requires equipment movement and repositioning will be validated through the OIM/PIC or designee based on weight loading, area classification, equipment type, etc.  Documentation of equipment movements (not repositioning in the same footprint) will be maintained with the original MOC as electronic attachments or hard copies. The need for additional MOCs will be determined by the OIM/PIC or designee. Items (e.g. wireline units) that remain in the original footprint with only angle movements do not require a new MOC or updates. |

# Guideline OPS0077A-PR01-GL.03

### Temporary Equipment Quick Start Guide

|  |
| --- |
| REQUEST |
| * Equipment Requestor |
| Identify need for temporary equipment.  Select proper checklist(s) for the equipment and start at Step 1 of the selected checklist(s).  NOTE: Some temporary equipment may require the use of multiple checklists (e.g. a skid with tanks and a pump driven by an engine or electric motor).  Conduct site survey to determine equipment placement.  Determine equipment classification requirements in accordance with facility area classification drawings and indicate on Step 1 of checklist.  Complete Requestor information in Step 1 of the checklist.  Initiate MOC per HSE0004, including a review of deck loading by civil engineering.  NOTE: Attach all supporting documentation to the MOC.  Contact the Vendor and advise that:   * Vendor will receive electronic copy of the checklist(s) for each piece of equipment. * Vendor is required to conduct inspection and complete each checklist. * Vendor is to print and complete hardcopy of checklist Step 2 and the appropriate columns in the inspection section. * An approved 3rd Party Inspector will be contacting Vendor to arrange for inspection of equipment at their location.   Verbally contact approved 3rd Party Inspector at least 48 hours prior to shipment to arrange for inspection.  E-mail checklist(s) and contact information for approved 3rd Party Inspector to Vendor. Use e-mail confirmation.   * If 3rd party inspection is not possible, ensure that Vendor has conducted the inspection, completed the checklist(s), and forward to the Offshore Location.   E-mail checklist(s) with Step 1 completed to approved 3rd Party Inspector. Use e-mail confirmation. |

|  |
| --- |
| INSPECT |
| Vendor |
| Coordinate visit by 3rd Party Inspector. If no 3rd Party Inspection, skip this Step.  Print (or download) checklist(s) sent by Requestor.  Conduct inspection of equipment and complete Step 2 and Vendor inspection column on checklist(s).  If equipment does not meet checklist requirements, contact equipment Requestor immediately.  Provide 3rd Party Inspector the checklist(s) with the Vendor column completed. If no 3rd Party Inspection, retain a copy of checklist(s) and send Vendor completed checklist with equipment. |
| **3rd Party Inspector** |
| After telephone notification from Equipment Requestor, contact Vendor to set up inspection time.  Receive e-mail containing checklist(s) for each piece of equipment from Requestor.  Visit Vendor location and validate Vendor inspection.  Complete Inspector column on Vendor completed checklist(s), document issues and comment on same in Comments section of the checklist(s), and sign.   * If equipment does not meet the checklist requirements, notify equipment Requestor immediately.   Apply appropriate inspection tag to equipment as indicated in Step 1 of checklist(s).  Provide completed checklist(s) to Vendor to send with equipment to offshore location.  Input inspection results to electronic version of checklist(s) and e-mail to Equipment Requestor and offshore location, if different. |

|  |
| --- |
| SHIP |
| * Vendor |
| Send Vendor and 3rd Party Inspector completed checklist(s) and other necessary documentation with equipment to offshore location.   * If any issues arise that could delay equipment delivery, notify equipment Requestor immediately. * Terminal will only audit temporary equipment compliance with the Lifting and Hoisting requirements of OPS0055 Lifting and Hoisting completed and will not audit OPS0077A-PR01 Temporary Equipment requirements. |

|  |
| --- |
| OFFSHORE INSPECTION |
| * Offshore Inspector |
| The Wells, Production, and/or other PICs accountable for the inspection of temporary equipment will designate the offshore inspectors.  Obtain Vendor and 3rd Party Inspector completed checklist(s) from documents package shipped with equipment.  Match the MOC with the equipment and validate for accuracy.  Conduct inspection of equipment, using checklist(s) shipped with equipment.  Ensure appropriate inspection tag is attached to equipment.  Obtain proper permitting and perform placement/installation of the equipment per MOC requirements.  If equipment does not meet the checklist requirements, inform the Wells, Production, or other PIC as soon as possible.  Ensure that the temporary equipment is logged on the temporary equipment log. This log is used as a reference in emergency response events and maintained by the Ballast Control Operator or person designated by the Production PIC.  File completed hardcopies of checklist(s) for the current year plus two years.  Use feedback form on Temporary Equipment website to provide comments about the Temporary Equipment process.  Ensure temporary equipment log is updated when equipment is removed from location. |

|  |
| --- |
| CHECKLISTS AND MOC |
| * PIC or designee (Wells, Production, Other) |
| Complete [recommended weekly checklist](http://sww.shell.com/ep/epw/wells/hse/snapshotauditword.doc) when making rounds on deck.  Close out MOC. |

|  |
| --- |
| Field to field TRANSFER |
| Re-inspect equipment and send completed and approved checklist(s) with equipment.  If equipment does not meet checklist requirements, contact destination facility and advise of any issues with equipment.  Receiving begins process starting with the above section Offshore Inspection. |

# Guideline OPS0077A-PR01-GL.04

### Regulatory Affairs Temporary Production Equipment Alert

|  |  |
| --- | --- |
| Definition of Temporary Production Equipment | Temporary production equipment is defined as equipment installed on a short-term basis to handle gas, oil, or water in addtion to the permanently installed production equipment. It is typically used during well unloadings and acid flowbacks.  Temporary production equipment is connected to the hydrocarbon process in accordance with API RP 14C and regulated by the Bureau of Safety and Environmental Enforcement (BSEE).  Typically, it is used to treat oil or water, and to maintain oil at pipeline quality or overboard water per the discharge permit. Temporary production equipment is typically connected with flexible hose or chicksan, such as CETCO equipment for overboard water treating. |

|  |  |
| --- | --- |
| Submission and Approval | Using temporary production equipment requires a submittal to the BSEE and 5 to 7 working days for approval.  The required submittal will include a schematic of the temporary equipment, indicating all connections to the permanent facilities. If the temporary equipment is automated or integrated with the platform safety system, an updated Safety Analysis Function Evaluation (SAFE) chart showing shutdown functionality for the temporary equipment will also be required.  Additionally, BSEE approval requires:   * the temporary equipment must be isolated from platform processes when not in use, and * the temporary equipment must be manned at all times while in use, unless an automated safety shutdown system is installed and approved.   NOTE: Using temporary equipment for an acid flowback job that involves any possibility of encountering hydrogen sulfide (H2S) during the flowback may require additional BSEE approval. |

|  |  |
| --- | --- |
| Required Diligence | Personnel must use diligence when making temporary connections to production equipment, including the following:   * Verifying that all hoses and chicksans are rated for the working pressures envisioned for the job. * Routing all hoses and chicksans to limit trip hazards, blind spots, and accidental damage from impact (e.g. in case of dropped items in lift areas). * Making every effort to minimize the number of hose connections. * Locating all hose connection points over platform (sump) skid pans, and placing any hose connections that must be routed over open grating over local skid pans to prevent accidental overboard leakage. * Maintaining the required monitoring frequency for all connections to ensure integrity. |

|  |  |
| --- | --- |
| Required Review | Ensure that all applicable field leaders, personnel, and engineering staff are aware of these requirements and have reviewed this regulatory notice. |

|  |  |
| --- | --- |
| Regulatory Citation and Contacts | The regulation governing temporary production equipment requirements is available in 30 CFR 250.802 (b) Exclusion of pressure safety high (PSH) and pressure safety low (PSL) sensors on downstream vessels in a production train.  Additional guidance is available in API RP 14C, 7th edition, March 2001.  For more information, please contact Regulatory Affairs. |

# GUideline OPS0077A-PR01-GL.05

### Glossary

|  |  |
| --- | --- |
| Terms and Definitions | The table below provides definitions for terms and acronyms used in this document suite. |

| Term/Acronym | Definition | |
| --- | --- | --- |
| Accommodation Module | Living quarters (any structure housing more than 6 people at a time or 2 or more people per shift). Includes sleeping, mess, medical treatment, recreational, toilet, shower, washing, and office spaces and corridors serving these areas. Does not include buildings in industrial areas such as laboratories, workshops, wireline units, and mud logger offices. | |
| API Class 1, Division 1 Areas | Areas where:   * ignitable concentrations of flammable gases or vapors exist under normal operating conditions, * ignitable concentrations of flammable gases or vapors may exist frequently because of repair or maintenance operations or because of leakage, or * breakdown or faulty operation of equipment or processes might release ignitable concentrations of flammable gases or vapors and might also cause simultaneous failure of electrical equipment that could become a source of ignition.   In addition, this classification usually includes:   * areas where volatile flammable liquids or liquefied flammable gases are transferred from one container to another, * interior areas where volatile flammable solvents are used, * areas containing open tanks of volatile flammable liquid, * inadequately ventilated areas where flammable gases accumulate or volatile flammable liquids stand or collect, * areas containing open tanks or vats of volatile flammable liquids or combustible liquids stored at temperatures above their flash point, * the interiors of refrigerators and freezers where volatile flammable materials are stored in open, lightly stoppered, or easily ruptured containers, and * all other areas where ignitable concentrations of flammable vapors or gases are likely to occur during normal operations. | |
| API Class 1, Division 2 Areas | Areas where:   * volatile flammable liquids or gases are: * handled, processed, or used, and * normally confined within closed containers or closed systems from which they can escape only through accidental rupture or breakdown of such containers or systems or through abnormal operation of equipment, * ignitable concentrations of gases or vapors: * normally are prevented by positive ventilation, and * might become ignitable through failure or abnormal operation of the ventilating equipment; or * are adjacent to a API Class 1, Division 1 area and to which ignitable concentrations of gases or vapors might occasionally be communicated unless prevented by: * adequate positive-pressure ventilation from a clean air source (with safeguards against ventilation failure), or * separation by a vapor-tight barrier.   Some potential leak sources may not be identified on the facility area classification drawings. The sources may be temporary or new additions (in this case a three-dimensional radius area 50' from the leak source is considered an API Class 1, Division 2 area).  *Also see Shell Extended Class 1, Division 2 Area definition.* | |
| Authorized Electrical Person (AEP) | The Senior Authorized Electrical Person (SAEP) or an Authorized Electrical Person 3 (AEP3). | |
| Building | Any structure consisting of four walls, a roof, and a floor. | |
| Bump test | Testing gas detection instrumentation with a brief exposure to a known concentration of (calibration) gas. The meter must respond within +/- 10% of the calibration gas concentration. An instrument that fails a bump test must be recalibrated and/or sent to the manufacturer for maintenance or repair. | |
| Continuously Attended Equipment | Continuously attended shall mean under continuous observation by a person(s) who:   * is in possession of a written procedure for shutdown of the equipment, * is competent to detect gas releases without the use of mechanical equipment via visible, audible, or odor detection methods, * is competent to monitor and detect fire or gas using appropriate equipment and platform SSDS events and immediately execute shutdown of the equipment, * attends the equipment while it is in operation and during the cool-down period for a minimum of 10 minutes (some equipment may require a longer cool-down period), * is located in the immediate area (10' to 15') of the equipment, * assumes the role of detecting the presence of gas using gas detection equipment, * can immediately recognize equipment conditions that, if left undetected, could result in the equipment becoming an ignition source or catching fire, * assumes the role of shutting down the equipment in the case of a platform shutdown, and * is competent in the use of firefighting equipment.   See OPS0077A-PR01, Section 6.4. | |
| Critical Well Servicing Services | * Wireline winches * Coiled tubing units * Nitrogen converters * Pumping units performing operations such as: * acid jobs, * sand fracs, * sand clean-outs, and * circulating through coiled tubing. | |
| Electrical Area Classification Drawings | Used to document information regarding sources of ignition and includes a plan view ofthe location that depicts:   * major process or other equipment and components that may be sources of release to the atmosphere (flammable gases or vapors,or flammable liquids), * boundaries of the various area classifications, * other information (e.g. ventilation) necessary to classify an area, and * elevations or sections where different classifications apply.   This records the original classifications and serves as a guide for future additions or revisions. | |
| Electrical Area Classification Types | Three classification types of areas where fire or explosion hazards may exist:   * Class 1, Combustible or Flammable Gas * Class 2, Combustible Dusts * Unclassified | |
| Electrical Source of Ignition | An electrical device that through normal or abnormal operation produces an arc or spark greater than or equal to the auto ignition temperature of the gas concerned. | |
| Emergency Shutdown (ESD) | The action taken to shut down all platform wells and other process stations, including termination of all:   * production, * processing, * storage, and * shipping activity. | |
| Enclosed Equipment | Equipment with an outer covering that could prevent the detection of fire on the equipment. | |
| Equipment Requestor | PIC or designee (from Engineering Staff or other Offshore personnel) who initiates the temporary equipment request to a Vendor. | |
| Equipment Sponsor | The PIC or designee to oversee the use of the temporary equipment. | |
| FEES | Fire, Explosion, and Escape Strategy | |
| Fire Detection and Shutdown | * A fire detection system detects the presence of fire, alerts personnel, and, upon “confirmed fire,” automatically initiates executive action to minimize consequences. Fire detectors are installed in areas of the facility where a fire may occur. * There are several types of fire detectors. A fire will display different characteristics depending on the fuel burnt, the type of burning that occurs, and the conditions surrounding the fire. The detector type is selected to provide the earliest reliable warning for the particular conditions in the area. * A pneumatic fusible plug system is used to detect fires in the production area and sometimes in unmanned buildings. Electronic flame detectors are installed to supplement the fusible plug system around more vulnerable open process areas to minimize response time. Electronic flame detectors are also installed in turbine enclosures and buildings with process equipment. * Heat detectors sense temperature and the temperature rate of rise to detect fire development. Heat detectors are typically unsuitable for exterior locations and are used to sense thermal activity in storage buildings, quarters buildings (water heater closets, laundry rooms), motor control centers (MCCs), turbine enclosures, and hull columns. * Smoke detectors are used indoors where wind will not disperse the smoke. Smoke detectors have an advantage over other types of fire detectors since they are capable of detecting fires in the incipient stage. * Manual pull stations are used in normally manned buildings to allow an individual to take action upon seeing a fire. A single activated manual pull station is considered a “confirmed fire.” | |
| Function Test | Testing by the Vendor in the vendor yard to ensure that equipment operates as intended. | |
| Fusible Plug Loop | Strategically located fusible elements in a pneumatic line used for fire detection. Fusible elements normally are metallic plugs that melt at a designed temperature or a section of fusible synthetic tubing. | |
| Gas Detection and Shutdown | The detection system consists of sensors, signal conditioners, and other devices for generating alarms and shutdown signals when an accumulation of hydrocarbon vapors is present. Typically, flammable gas detectors (both LOS and Point) are located in compressor buildings, main production areas, turbine enclosures, MCCs, quarters areas, hull ventilation systems, lab buildings, and portable buildings. The gas sensor may be connected to a local transmitter or to a remote controller chassis for signal conditioning and calibration adjustments. The local transmitter or remote controller chassis connects to a logic solver to generate alarms and initiate executive actions. For Offshore facilities, this system is one of several Emergency Support Systems (ESSs) defined in Section C1 of API RP 14C. | |
| Hazardous (Classified) Area | An area where flammable gases or vapors may be present in the air in quantities sufficient to produce explosive or ignitable mixtures. These explosion hazards may exist due to the presence of:   * combustible or flammable gases, * combustible or flammable liquids, or   combustible dusts. | |
| Ladder Fall Prevention | An engineered system that provides fall protection while ascending and descending fixed ladders. The system is permanently attached to the ladder and provides fall arrest without continually hooking and unhooking a lanyard while climbing. Most systems use a rail or cable mounted vertically along the ladder with connecting hardware that locks onto the rail or cable when a fall is detected. | |
| Lower Explosive Limit (LEL) | The minimum percent by volume of a gas that when mixed with air at normal temperature and pressure will form an explosive/flammable mixture. At concentrations below the LEL, there is not enough fuel to continue an explosion. | |
| Occupied Buildings | A building that personnel occupy while doing work or while located at a facility. Any building that meets the USCG definition of accommodation module is considered occupied.  In addition, a building is considered an occupied where:   * an individual spends an average of 3 or more hours per day inside over any 1-week period, * 6 or more people are inside at any given time, or * a group spends an average of 100 hours or more per week inside. | |
| Open Equipment | Equipment with no outer covering that could prevent the detection of fire. | |
| Process Area | Any area where oil or gas well delivery or process equipment is located, including: | |
|  | * Wellheads * Manifolds * Pressure vessels * Heat exchangers * Coolers | * Pumps * Compressors * Tanks * Filters |
| Process Area Equipment Uses | * Hydrocarbon production * Gathering * Separation * Treating * Handling * Shipping * Injection * Transfer * Drilling * Well completion | * Stimulation * Well servicing * Flammableliquids, gases, or vapors\*: * Production * Handling * Storage * Injection * Transfer * *\* Flammable liquids include combustible liquids at temperatures at or above their respective flash points.* |
| Safety Shutdown System (SSDS) | An instrumented layer of protection that takes the process facilities to a safe shutdown condition when the process varies beyond prescribed limits on SAFE Charts. This system includes control of pipeline riser and flowline shutdown valves. | |
| Senior Authorized Electrical Person (SAEP) | Only the SAEP or Authorized Electrical Person 3 (AEP3) is the Authorized Electrical Person for temporary equipment. | |
| Shell Extended Class 1, Division 2 Area | Based on recommendations from Electrical Ignition Source Control for Temporary Equipment ALARP Assessment, an area that extends 40' from an API Class 1, Division 2 boundary as defined on the facility’s area classification drawings. | |
| Tanks | Welded steel storage tanks for combustible materials for use on all facilities operated by UAD. | |
| Temporary Buildings | Temporary or portable buildings include the following:   * Galleys, change rooms, or laundry rooms * Living quarters (berthing) * Offices * Remotely Operated Vessels (ROV)-related buildings * Mud or well logging buildings * Chemical labs or chemical storage * Material warehouses * Tool rooms * Storage rooms | |
| Temporary Building Exclusion | HSE0149 does not apply to these portable structures:   * Welding enclosures * Asbestos or refractory remediation enclosures * Cabins located on heavy machinery * Weather shelters * Small tents used as cool down areas, to provide shade within the process unit, or smoking areas that are occupied by less than 10 people * Lightweight plastic portable toilets   Certain occupied portable buildings are necessary to perform or monitor operation-critical tasks within hazardous (classified) areas. Examples include wireline buildings, measurement while drilling (MWD) buildings, mud logging buildings, directional driller control buildings, and X-ray buildings.  Buildings essential to operation-critical tasks do not have to meet the requirements of HSE0149 as long as the following requirements are met:   * Occupancy is limited to authorized personnel and kept to a minimum. * Use and placement of the building is necessary to perform or monitor operation-critical tasks. * The building is not used for lunch breaks, meetings, as a break area, or any purpose not directly related to the operation-critical task. * The Management of Change (MOC) documentation for building placement includes the OPS0077A-PR01-TO.09 Temporary Buildings Checklist with Part A, lines a, b, and c completed as an attachment (Offshore only). | |
| Temporary Production Equipment | The equipment used to handle gas, oil, or water in addition to the permanently installed production equipment (e.g. CETCO equipment for overboard water treating). These additional pieces of production equipment are connected to the hydrocarbon process regulated by API RP 14C and the BSEE. Typically this equipment is used to treat oil or water. It is usually used to maintain oil at pipeline quality or maintain overboard water per the discharge permit. It is often connected with flexible hose or chicksan. | |
| Unattended Facility | A location where:   * people are not routinely accommodated, or * equipment is normally unattended. | |
| Unclassified Area | An area outside of the classified area (API Class 1, Division 1 areas or API Class 1, Division 2 areas) that is more than 40' from a Class 1, Division 2 boundary. An area in this context is always considered to be three-dimensional. | |
| Unoccupied Building | A building that does not meet any of the definitions for an occupied building. | |
| Vapor-Tight Barrier | A barrier that will not allow the passage of significant quantities of gas or vapor at atmospheric pressure. | |
| Vessels | Welded steel, unfired pressure vessels. Pressure vessels are as defined by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. | |

# GUideline OPS0077A-PR01-GL.06

### References and Companion Documents

|  |  |
| --- | --- |
| Referenced Documents | Shell standards and procedures and industry standards and codes referenced in this document suite are listed in the table below. |

|  |  |
| --- | --- |
| Document Number | Document Title |
| **UAD Documents** | |
| ENG0039SP | General Electrical Installation Specification |
| ENG0112 | Engineering Standard for Fire and Gas Detection |
| FA-RM-01 | Internal Combustion Reciprocating Engines Technical Integrity Performance Standard |
| HSE0004A | Management Of Change |
| HSE0008 | Safe Work Planning and Authorization (SWPA) System |
| HSE0011 | Hazard Communication (HAZCOM) |
| HSE0026-SP01 | Hazards and Effects Management Process (HEMP) |
| HSE0029A-PR04-TO.07 | Expectations for Responding to Loss of Primary Containment |
| HSE0034 | Fire, Explosion, and Evacuation Strategy (FEES) and Guidance |
| HSE0149 | Occupied Portable Buildings – Offshore Requirements |
| OPS0055 | Lifting and Hoisting |
| OPS0171 | Inspection of Hazardous (Classified) Type Electrical Equipment Installed in Hazardous (Classified) Areas or Other Locations |
| OPS0175 | Portable Electronic Devices |
| OPS0177A | Operations Requirements for Electrical Systems Offshore |
| **Regulatory Documents** | |
| API RP 14C | Practice for Analysis, Design, Installation, and Testing of Basic Surface Safety Systems for Offshore Production Platforms |
| API RP 500 | Recommended Practice for the Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class 1, Division 1 and Division 2 |
| 30 CFR 250.510 | Diesel Engine Air Intakes |
| 30 CFR 250.802(b) | Exclusion of pressure safety high (PSH) and pressure safety low (PSL) sensors on downstream vessels in a production train |
| MMS Regulatory Notice 2003-9 issued 10-18-03 | Temporary Building connected to Production Equipment. |
| MMS Regulatory Alert 2001-2 issued 03-16-01 | Fusible Plugs on Temporary Equipment |
| NFPA 70 | National Electric Code (NEC) Handbook 2014 |
| NFPA 496 | Standard for Purged and Pressurized Enclosures for Pressurized Equipment |
| Resolution A.760(18) | Symbols Related to Life-Saving Appliances and Arrangements |