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The mission of Health, Safety, Environment and Operational Integrity is to manage NAO risk by embedding HSE/OI capabilities within the business.
Talisman’s Core Values

- Safety
- Passion
- Results
- Respect
- Excellence
- Teamwork
- Honest Communication
Policy on Safe Operations

Our goal is to create a working environment such that we cause no harm to people, and where we minimize our impact on the environment.

To achieve this we will:

- Always comply with the law or Talisman standards, whichever are higher;
- Operate our business to ensure proactive risk mitigation and continuous improvement;
- Set goals and targets, and measure performance against them;
- Hold ourselves and our contractors accountable to meet Talisman standards; and
- Communicate openly with those who may be affected by our activities.

Safe operations in all company activities is a core value. If operational results and safety ever come into conflict, we will have a responsibility to choose safety over operational results and Talisman will support that choice.
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**Introduction**

Talisman Energy USA Inc. is committed to conducting its business safely and in a socially and environmentally responsible manner.

The company takes its responsibilities for the health and safety of its workers and visitors very seriously, and expects each of these groups to join in providing a safe and secure environment.

**Talisman’s Responsibilities**

Talisman is responsible for ensuring:

- the health and safety of all their workers at a worksite
- all workers are engaged in their work and are aware of their responsibilities and duties under the various jurisdictional acts and regulations
- workers are informed of worksite hazards, practices and procedures that are available to manage those hazards
- workers are competent to perform their work safely
- sufficient time is available to complete tasks safely

Talisman adopts the most stringent regulation in all areas we operate. Any conflict between Talisman requirements and local regulatory requirements will be resolved by adopting the more stringent of the two, if not prohibited by law or regulation.
Supervisor’s and Worker’s General Responsibilities

Supervisors are responsible for ensuring workers are aware of all site hazards. They are to ensure workers are competent, proficient and able to perform work in compliance with the appropriate job-specific and jurisdictional regulatory requirements.

Workers are responsible for always considering their own health and safety and that of others around them. Thus, they must ensure that their actions do not endanger the health or safety of anyone else.

Supervisors and workers must comply with the requirements as they appear in the U.S. Talisman Operating Management System (TOMS).

Contractors Working at Talisman Energy USA Inc. Sites

The rules and requirements contained in this booklet have been written for the guidance of Contractors who are to perform work under contract with Talisman Energy USA Inc. This booklet prescribes minimum requirements only, and is incorporated by reference in the Contractor HSE Standard. The Contractor, working in conjunction with a U.S. representative, will be expected to establish such additional rules and procedures as may be necessary to conduct a safe operation and comply with U.S. regulatory and insurance requirements. The term Contractor shall be understood to include any and all persons, sole proprietorships, partnerships, corporations, or other business ventures under contract, oral or written, to the Company.
Contractor is responsible for informing its subcontractors of these requirements, for directing and supervising work of subcontractors, and for assuring that its subcontractors adhere to the requirements herein. The U.S. delivery units may request the Contractor to provide proof of its subcontractors’ adherence to all rules and regulations and will prohibit access to Company property or job sites for those Contractors not in compliance. In order to assist Contractor in following these instructions, a U.S. Representative will be assigned to the Contractor to act as the Company agent in all matters relative to work activities at U.S. facilities or job sites. Under no circumstances shall any work be started until all permits, insurance, U.S. regulatory and pre-job requirements have been met.

**Talisman Operating Management System (TOMS)**

The U.S. Safety Handbook provides an overview of the expectations set out in the U.S. TOMS. All references in this handbook are from the U.S. TOMS practices, procedures and guidelines. All workers are expected to be familiar with the sections of TOMS that apply to the work they are performing.
Safety Orientation

For all Talisman worksites, workers shall be given a safety orientation when working on site, which will take place before work starts. All personnel working at Talisman locations must have received a valid Talisman Safety Orientation within the last 12 months. The orientation includes a full review of this U.S. Safety Handbook.

All workers shall check in with a Talisman representative at the worksite they are entering. The Talisman representative must ensure every person entering a worksite is registered and has received a site-specific safety orientation, prior to commencing work or a tour.

Non-Working Visitors

Non-working visitors to a field site must be under direct supervision at all times. The Talisman field representative, or delegate, will ensure all visitors complete the Visitor Orientation Checklist.

Document and file orientations following area requirements.

Safety Culture

Safety Culture is the collection of individual, group and corporate values, attitudes, perceptions, competencies and behavior.

We aspire to have a culture that is positive in its orientation and is proactive in mitigating risks. It is built on shared values and mutual trust. It can be measured, assessed, evaluated and improved.
Leadership Safety Observation (LSO)

Worker-supervisor relationships are critical for fostering a robust safety culture where individuals can speak respectfully to one another, using open and honest communication.

LSO is a leadership tool used to engage frontline workers in genuine two-way conversation about safety.

LSO is also a tool to embed cultural values and promote safe culture through visible leadership. LSO is a consistent and measured approach in which conversations enable leaders within the organization to gain valuable insights on personal and process safety hazards directly from frontline workers.

Behavior Based Safety (BBS)

The Talisman U.S. BBS program is a peer-to-peer engagement tool that encourages people to make the safest choices in their day-to-day activities.

By focusing on safe behavior/choices and avoiding at-risk behaviors we create desirable habits. With BBS, workers are motivated to choose safe behavior because they want to—not because they are told to.
Just Culture

A just culture ensures people involved in an incident are treated fairly, and recognizes the possibility for human error.

It focuses on understanding the reasons for an incident and how to modify behavior to avoid recurrence, rather than allot “blame”. However, individuals will be accountable for their conscious violation of safety procedures or policies.

The focus of just culture is on three types of safety behavior:

- an inadvertent error or human error
- a choice, or at-risk behavior
- conscious disregard, or reckless behavior

The just culture model can assist in distinguishing the difference between intentional behavior and human error.

Good Neighbor Program

TEUSA is committed to building positive, long-lasting relationships with the communities in which we operate through open and honest communication. The Good Neighbor Hotline was specifically created to resolve questions or concerns about our operations.
GOLDEN RULES

1. PREVENT OIL, GAS AND CHEMICAL LEAKS
2. DO A RISK ASSESSMENT
3. GET A PERMIT TO WORK
4. ISOLATE ENERGY SOURCES
5. CONDUCT SAFE LIFTING OPERATIONS
6. CONTROL ENTRY TO CONFINED SPACES
7. WORK SAFELY AT HEIGHT
8. PREVENT DROPPED OBJECTS
9. OPERATE VEHICLES SAFELY
10. CONTROL GROUND DISTURBANCE
PREVENT OIL, GAS AND CHEMICAL LEAKS

We prevent oil, gas and chemical leaks by:

1. Operating equipment within specified safe limits

2. Inspecting and maintaining Safety Critical Equipment in line with approved schedules

3. Completing repairs within specified timescales

4. Reporting anything that is leaking or looks like it is about to leak

5. Investigating all leaks to determine root causes

For more information on this Golden Rule please read the following procedures:

Operating Procedures, Maintenance Procedures, Inspection Procedures
Prevent Oil, Gas and Chemical Leaks

Process Safety

Process safety is a disciplined framework for managing the integrity of hazardous operating systems and processes by applying good design principles, engineering, and operating and maintenance practices.

Process safety is intended to prevent the loss of primary containment of oil, gas and other chemicals that could lead to fires, explosions or toxic exposure.

Many aspects of process safety must work together across all levels of the organization, including (but not limited to):

- information and documentation
- hazard and risk management
- operating practices
- safe work practices
- training and competency
- pre-startup safety reviews
- equipment integrity
- management of change
- contractor management
- incident reporting
- audits and assurance
Preventative Maintenance

A maintenance program must be created for the operating site. This shall include mechanical, electrical and instrumentation equipment, which are consistent with regulatory requirements, standard industry practices, and original manufacturer specifications.

All equipment and tools required to complete the task undertaken, must be in good operating condition and designed for the job at hand.
DO A RISK ASSESSMENT

We manage the risks associated with all activities and organizational changes by:

1. Risk assessing all task-based and security activities

2. Risk assessing proposed deviations from procedure

3. Recognizing change and ensuring management of change procedure is adhered to prior to implementation

4. Obtaining the correct level of risk assessment approval and communicating to all affected personnel

5. Re-assessing risks if things change

For more information on this Golden Rule please read the following procedures:

NAO-HSEOI-PRA-05-01 – Risk Assessment
Do a Risk Assessment

Prior to starting any work, it is the responsibility of all workers to conduct a hazard and/or risk assessment for the task(s) they will be performing.

Hazard Assessment

Talisman will identify and communicate any potential site hazards, and required controls, for our worksite during a pre-task job walk-through.

Workers will be made aware of hazards through pre-job safety meetings, signs, work permits, job safety analyses and other hazard assessment tools.

In addition, workers will identify and control any hazards they bring onto a Talisman worksite prior to commencing work.

Risk Assessment

A risk assessment will be conducted for new or complex activities or for making critical decisions. A risk assessment should be conducted with guidance from someone who is trained and competent in the use of the Talisman’s Risk Matrix.
GET A PERMIT TO WORK

We always comply with our Permit to Work system by:

1. Never starting a task without an approved work permit, procedure or routine

2. Understanding and following the work permit, procedures, or routine to ensure the scope of work is defined and the identified hazards and controls are addressed

3. Involving all participants in a pre-job meeting before work starts

4. Checking that identified control measures are in place

5. Stopping the work at any time if we have concerns

For more information on this Golden Rule please read the following procedures:

NAO-HSEOI-PRA-05-02 – Permit to Work
Get a Permit to Work

A safe work, hot work, confined space, or ground disturbance permit may be required before work begins on Talisman sites.

Safe Work

A Safe Work Permit identifies the work to be done, the hazard(s) involved, and the precautions to be taken. It ensures that all hazards and precautions have been considered before work begins.

The permit is a written record that authorizes specific work, at a specific location, for a specific time period. It is an agreement between the issuer and the receiver that documents the conditions, preparations, precautions and limitations that need to be clearly understood before work begins.

Hot Work

Hot work is any activity that causes, or can cause, a source of ignition for a flammable or combustible gas, liquid or material.

A hot work permit is required for hot work, including (but not limited to) welding, burning, hot tapping, cutting, grinding, brazing, soldering, heating, riveting, and all open flames. This will also include the use of any AC or DC powered tool or equipment that is not intrinsically safe or explosion proof.
Hot work permits are required in areas that are within 75 feet of any potential hydrocarbon or flammable vapor source (e.g., wellheads, drains, pressure relief devices, vents, sample points, process vessels, storage bullets/tanks, etc.) or combustible materials, or in areas where flammable gases may be present in sufficient quantities to produce explosive, or flammable, mixtures.

**Confined Space**

A confined space permit, signed by the entry supervisor, must be posted at all entrances or otherwise made available to entrants before they enter a permit space. The permit must verify that pre-entry preparations outlined in the regulation have been completed. The duration of entry permits must not exceed the time required to complete an assignment.

**Ground Disturbance**

All activities that meet Talisman’s definition of ground disturbance require a ground disturbance permit. The permit verifies the procedure to ensure buried facilities are identified, located and marked to show orientation prior to any crossing.

Refer to Golden Rule #6 and Golden Rule #10 for information regarding confined space entry and ground disturbance work permits.
ISOLATE ENERGY SOURCES

We never start a task without:

1. Identifying the requirement for isolation and safe discharging of energy

2. Implementing barriers to ensure all energy sources are isolated or eliminated

3. Applying a system of locks and tags at identified isolation points

4. Ensuring that isolations have been checked and approved

5. Testing to prove that isolations are effective

For more information on this Golden Rule please read the following procedures:

NAO-HSE01-PRA-10-01 – Zero Energy Isolation
Isolate Energy Sources

Lock Out / Tag Out

Workers must lock out (and tag out, where required) sources of energy, prior to servicing or maintaining equipment. Only workers deemed “authorized” will be performing lockout/tagout. No worker is to perform work on equipment until it has come to a complete stop, it is rendered inoperable and any remaining energy is eliminated. Lock out procedures must be readily available at the worksite and must be followed.

Lockout means to physically disconnect, or isolate all energy sources and place a lock with a unique identifier that identifies the owner of the lock. Proper group lockout procedures shall be implemented when more than one person is working on the system.

Before beginning work, the lock out shall be tested to verify effectiveness.

Overhead Power Lines

Workers shall not work near or operate equipment within a minimum of 10 feet of an overhead power line. As voltage of the power line increases, so shall the distance at which equipment is being operated. Refer to the Minimum Clearance Distances table on the next page for guidance.

Exceptions to this rule are when the worker is being directed by a competent utility representative or when the worker is following established power line clearances as defined by
the applicable workplace health and safety regulation. Completing work around overhead power lines must be planned with appropriate risk assessment completed prior to starting work.

**MINIMUM CLEARANCE DISTANCES**

<table>
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<tr>
<th>Voltage (nominal, kV, alternating current)</th>
<th>Minimum clearance distance (feet)</th>
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<tr>
<td>up to 50</td>
<td>10</td>
</tr>
<tr>
<td>over 50 to 200</td>
<td>15</td>
</tr>
<tr>
<td>over 200 to 350</td>
<td>20</td>
</tr>
<tr>
<td>over 350 to 500</td>
<td>25</td>
</tr>
<tr>
<td>over 500 to 750</td>
<td>35</td>
</tr>
<tr>
<td>over 750 to 1,000 (or unknown)</td>
<td>45</td>
</tr>
<tr>
<td>over 1,000 (or unknown)</td>
<td>(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).</td>
</tr>
</tbody>
</table>

Note: The value that follows "to" is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.

Important: full discussion, before moving equipment in close proximity to overhead power lines, must be coordinated with the Talisman representative. If the approach distances cannot be maintained, make arrangements with the Talisman representative to de-energize the circuit.
We never commence a lifting operation without:

1. Appointing a competent person responsible for the lift and assigning roles and responsibilities

2. Preparing a lifting plan and risk assessment

3. Ensuring that loads are rigged by competent personnel using certified equipment

4. Designating safe areas during lifting and forklift operations, ensuring ricochet hazards are considered

5. Agreeing on and testing communication methods

For more information on this Golden Rule please read the following procedures:

NAO-HSEOI-PRA-10-02 – Safe Lifting
Cranes and Hoists

When using cranes, workers shall meet the following safety requirements:

- Ensure all crane operators are properly certified/licensed, as required by regulation, for the area where the work is being performed.
- Keep all parts of your body out of the designated buffer zone while loads are being handled by cranes.
- When working near an electrical power line, ensure the crane operator keeps a safe distance and meets the minimum clearances, as per jurisdictional regulations and as listed in the Overhead Power Lines section of this booklet.
- Maintain an inspection, maintenance and repair log for each lifting device.
- Ensure all safety devices are engaged/active and operating properly.
- Use tag lines when it is necessary to control the swing of the load.
Lifting and Rigging

Workers shall include safe lifting and rigging in pre-job planning.

Never begin a lifting operation without:

- Appointing a competent person to be responsible for lifting and assigning roles and responsibilities.
- Ensuring that loads are rigged using certified equipment.
- This competent person shall also be responsible for inspection of all rigging devices prior to use.
- Any rigging device with signs of deterioration, cut strands, fraying, twisted, distorted or cracked links, hooks or rings or other damage reducing its lifting capacity shall not be used. The approved rating capacity of a rigging device is not to be exceeded.
- Welding repairs to rigging devices are to be performed only by authorized personnel following certified procedures where they exist.

A lift will be considered Critical when any of the following conditions, or circumstances, exists:

- all lifts made over personnel or operating process equipment
- a lift in which the center of gravity of the load changes during the lift
- a lift in which one of the sling lengths changes during the lift
- a lift of a submerged load
single crane, boom truck, or hoist lifts, where the total load weight exceeds 75% of the crane’s load capacity, based on the load rating chart for the equipment

two or more cranes are required for a single lift (side booms during pipeline stringing operations are not considered a critical lift unless the load exceeds 75% of the rated capacity)

movement of the load or crane near energized high voltage conductors could inadvertently encroach within a distance equal to or less than the maximum swing radius of the crane plus the required voltage clearance

a person is in a work platform suspended from or attached to a crane or hoist.

a lift is deemed critical by the Talisman Representative

If the lift is deemed critical, a lift plan is required.

Chains, Cables, Hooks and/or Slings

When using chains, cables and/or slings, workers shall meet the following safety requirements:

Inspect all chains, hooks, slings, and cables before using.

Ensure hooks used for overhead lifting are equipped with an approved safety latch.

All other hooks shall be fit for purpose and used accordingly. Hooks designed to accept a safety latch shall be equipped as such.

Ensure slings have a legible load rating affixed to the device by a stamp or color code.

Do not use equipment that is damaged, worn or frayed.
CONTROL ENTRY TO CONFINED SPACES

We only enter a confined space after:

1. Planning the entry thoroughly
2. Isolating all sources of energy affecting the space
3. Testing the atmosphere in the space
4. Controlling the entry under a Permit to Work
5. Preparing and practising a rescue plan

For more information on this Golden Rule please read the following procedures:

NAO-HSEOI-PRA-05-03 – Confined Space Entry
Control Entry to Confined Space

Confined Space Entry

A confined space is a space that:

- is large enough and so configured that a worker could enter to perform assigned work;
- is not designed or intended for continuous human occupancy; and
- has limited or restricted means for entry or exit that may complicate the provision of first aid, evacuation, rescue or other emergency response service.

A space must meet all of the above criteria to be a confined space. Although some enclosed areas may not meet the definition of a confined space, the hazards still need to be evaluated and controlled.

Work occurring inside any confined space requires the following:

- assurance that no conditions exist that would deem the space a permit-required confined space.
- a safe work permit must be completed by the individuals involved with the work; and
- a job safety analysis is required to be developed and reviewed with the individuals performing the work;

Note: A confined space permit and attendant are not required if the above 3 bullet points have been confirmed
A Permit-Required Confined Space is a confined space that contains one or more of the following:

- atmospheric hazards may exist or occur because of its construction, location, contents or because of work that is done in it;
- contains a material that has the potential for engulfing an entrant;
- has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor sloping downward and tapering to a smaller cross-section; or
- contains any other recognized serious safety or health hazard that creates an immediate danger to life or health.

A Confined Space Entry Permit is required for entry into a permit-required confined space.

Talisman must ensure every worker, with assigned duties related to confined space entry, is trained by a competent person in recognition of confined space hazards and safe performance of the assigned duties.

A rescue plan must be in place for all confined spaces.

Atmospheric monitoring must be performed by a competent worker. A worker must ensure that a confined space is inerted when it is not reasonably practicable to eliminate an explosive, or flammable, atmosphere within the confined space through other means.
WORK SAFELY AT HEIGHT

We only carry out work at height – two (2) meters or more* – after:

1. Checking that the correct equipment has been provided

2. Ensuring that personnel involved have been adequately trained

3. Checking that fixed platforms have appropriate access, egress and guard rails

4. Ensuring that fall arrest equipment has the required anchor attached appropriately

5. Preparing and practising a rescue plan

* Or less than two (2) meters if deemed necessary by risk assessment

For more information on this Golden Rule please read the following procedures:

NAO-HSEO1-PRA-10-03 – Safe Work at Heights
Work Safely at Heights

Fall Protection

A fall protection plan is required if a worker at a worksite could fall a distance equal to, or greater than 4 feet and is not protected by guardrails.

The plan must be available at the worksite and reviewed with workers before work begins. All workers must be trained in the safe use of the fall protection system, prior to starting work in an area where a fall protection system is required. The plan must include rescue procedures.

A worker must use a fall arrest system when:

- working 6 feet or more and is not protected by a guardrail or similar barrier;
- working from a ladder without a cage and not able to maintain three points of contact; and
- a Talisman supervisor deems it appropriate, based on site conditions or hazards.

Scaffolds or Platforms

All scaffolds or platforms used for the installation and maintenance or removal of machinery and equipment shall be constructed, maintained, and used in compliance with existing regulations. Competent person is required to oversee erection/modification/dismantling.
Ladders

All workers shall meet the following ladder safety requirements:

- Use the appropriate ladder for the job.
- Always place an extension ladder at least 25% of its length away from the base of the structure to be mounted (4:1 ratio).
- Three point contact with the ladder must be maintained at all times (i.e., two feet and one hand or two hands and one foot).
- Place the ladder on a firm and balanced surface.
- To access another work level, ensure the ladder reaches at least 3 ft above that level.
- Do not work from the top two rungs of a ladder, unless it is a stepladder with a railed platform on top.
- Metal ladders must not be used where there is a possibility for contact with electrical conductors.

Overhead Work

When performing overhead work, all workers shall meet the following safety requirements:

- Rope off the area below, or take equivalent measures, to prevent workers from entering the area.
- If using a safety watch, station the person close enough to permit voice communication with workers in the vicinity of the restricted area.
PREVENT DROPPED OBJECTS

We prevent dropped objects and injury from dropped objects by:

1. Ensuring all tools, equipment and materials are secured

2. Taking measures to prevent dropped objects when working at height or over grating

3. Erecting barriers around drop zones below worksites

4. Removing all tools, equipment and materials from the worksite on completion of work

5. Inspecting structures and equipment at risk from falling

For more information on this Golden Rule please read the following procedures:

NAO-HSEO1-PRA-10-04 – Prevent Dropped Objects
Prevent Dropped Objects

While working on any Talisman site, workers must ensure that:

- potential for dropped objects is minimized and tools and equipment are secure
- appropriate retention/securing measures are in place when removing or loosening equipment
- hand tools carried from one area to another are to be carried in a secure manner
- tools and equipment are not carried in clothing or coverall pockets
- when working at height with tools and equipment, a tool bag/belt and belt/wrist lanyards are used
- when transporting tools and equipment up and down ladders or stairways, the method used must ensure that items are secure at all times
- when working on gratings with tools, equipment and materials, sufficient material to contain dropped objects is laid down to cover grating in the work area (before beginning the task)
- when a work area is left for any reason, all tools, equipment and materials are accounted for and left in a safe and secure condition
- ladders or process equipment are not to used to lay out or secure tools
- PPE is safely secured
- toe boards are used, when working on scaffolding
“No work” zones should be clearly marked. The following barricade tape colors are recommended to mark areas:

- yellow: caution, do not enter area without permission of the crew working in that area
- red: do not enter under any circumstances
We never operate vehicles without:

1. Conducting a pre-trip vehicle inspection, assessing the risks and planning accordingly

2. Ensuring the driver is properly licensed for the class of vehicle and free from fatigue, drug or alcohol impairment

3. Driving with care at appropriate speeds for road conditions, and ensuring all occupants fasten seatbelts

4. Avoiding the use of all mobile communication devices and other driver distractions while using any company-leased vehicle on company time

5. Designating safe areas while working around moving vehicles

For more information on this Golden Rule please read the following procedures:

NAO-HSEOI-PRA-10-05 – Driving Practice
Operate Vehicles Safely

All operators must be trained and deemed competent. Vehicles and equipment must be properly maintained, regularly inspected and safely operated.

Vehicles

Workers must meet the following vehicle safety requirements:

- Prior to commencing a trip, drivers shall conduct a journey hazard assessment.
- Drivers shall complete a Journey Management Checklist when the journey is outside of their regular job duties, or schedule.
- The driver will not travel when deemed unsafe by the local operating area.
- The driver must maintain a valid license based on the class of vehicle they operate.
- All drivers, where required by law, shall have a valid DOT certificate in their possession.
- The driver must possess valid Defensive Driving Training Course (DDT) certification (within the last 3 years).
- All occupants must wear seat belts when vehicles are moving.
- The driver will not be under the influence of alcohol or drugs.
- Drivers must be appropriately rested and alert.
- Drivers must operate vehicles around the worksite in a reasonable and safe manner.
- Additional training may be required when a risk assessment deems area road conditions to be higher risk.
- Drivers must comply with all posted speed limits and drive according to the road conditions.
- Drivers must avoid the use of all mobile communications devices while driving. Hand-held devices are prohibited, while driving hands-free is permitted. Use of a two-way radio to call kilometers (miles) on a radio-controlled road is permitted, in accordance with the road rules for the road.
- Drivers must also reduce, or eliminate, other distractions (such as, eating, drinking, reading, writing, reaching for items, and conversations with passengers) while the vehicle is in motion.
- Drivers must use a spotter when backing into limited visibility, constricted or congested areas.

**Heavy Equipment**

Workers must meet the following heavy equipment safety requirements:

- Other than the operator, workers are not permitted to ride on equipment or loads.
- Ensure equipment has a functioning backup alarm.
- Ensure the operator uses seatbelts and rollover protection is available.
- All equipment must be inspected on a daily basis.
Must be equipped with a fire extinguisher.

Use a spotter when backing into limited visibility, constricted or congested areas, within 75 feet of process equipment or, where necessary, to guide heavy equipment.

Ensure no vehicles enter a hazardous location at production operations facilities without prior authorization from a Talisman representative.

When towing vehicles, a tow truck is recommended. When a tow truck is not available:

- Chains or ropes with metal hooks are not to be used for towing
- Only use a recovery strap with proper loops and properly rated shackles.

Where required by legislation, any vehicle operating within 75 feet of a restricted area, must be equipped with an approved positive air shut-off. The operating condition of the positive air shut-off valve control must be checked by actuation, when requested by a Talisman representative. Vehicles equipped with manual shut-offs must be manned at all times.

Talisman may conduct safety inspections of contractor vehicles and/or equipment to be operated on Talisman locations.
Off-Road Vehicles

When operating off-road equipment (such as all-terrain vehicles [ATVs], utility terrain vehicles [UTVs], quads and snowmobiles) on a worksite, riders must wear an approved safety helmet and all operators and passengers must follow the operator’s manual and manufacturer’s recommendations.

Helicopter Safety

All personnel must follow specific safety requirements when working around, boarding, travelling in, or disembarking from helicopters.

Always follow the directions provided by the pilot and the crew.
CONTROL
GROUND DISTURBANCE

We will never start a ground disturbance without:

1. Identifying and locating any sub-surface hazards prior to commencing

2. Controlling the ground disturbance under a Permit to Work

3. Identifying and maintaining safe working distances between equipment and sub-surface hazards

4. Controlling access to the excavation area to prevent falls, dropped objects and exposure to harmful atmospheres

5. Taking precautions against the possibility of collapse and minimizing the time for which the excavation exists

For more information on this Golden Rule please read the following procedures:

NAO-HSE01-PRA-05-04 – Ground Disturbance
Control Ground Disturbance

Ground disturbance occurs when soil, or the existing surface, has been disturbed, or displaced, with the exception of:

- routine, minor road maintenance
- agricultural cultivation to a depth of less than 1.5 ft below the surface
- hand-digging to a depth of no more than 1 ft below the surface, so long as it does not permanently remove cover over a buried facility

All mechanical excavation is considered ground disturbance.

Mechanical excavation shall not take place within 15 feet of a buried facility marked solely with a paint marking, pin flag or other surface marking. Hand-exposing a line to verify its location will allow mechanical excavation to take place up to within 2 feet of a buried facility. All excavation within 2 feet of the buried facility shall be of a non-mechanical means.

Prior to conducting a ground disturbance:

- obtain a Ground Disturbance Permit
- ensure buried facilities are identified, located and marked to show orientation prior to any crossing

A competent person, who is capable of identifying existing/predictable hazards in the surroundings of an excavation, or working conditions which are hazardous to employees, must be identified, properly trained and available at the excavation site.
Employees working in excavations/trenches must be protected from a cave-in by the use of sloping/benching, shoring or shielding systems.

If anyone may be entering the excavation it must be determined if it meets the criteria of a confined space and appropriate documentation and controls put in place.

Workplace Standards

Alcohol and Drug Policy

All workers are expected to report Fit for Duty, and remain fit throughout their workday or shift.

Possession of, or being under the influence of, alcoholic beverages and/or illegal drugs is strictly prohibited on our worksites. This includes leases, camps and accesses.

Workers must inform their supervisor if they are taking prescription drugs that may impair their ability to work safely, or compromise the safety of others.

Duty to Refuse Unsafe Work

Workers must refuse any work that may expose themselves, other workers, or the public to imminent danger.

To do this effectively:

- Workers must immediately inform the supervisor of the refusal, along with supporting reasons as to why the work is unsafe.
• The supervisor must immediately evaluate the situation and take action to eliminate the danger, prior to resuming work.
• If unresolved, the worker may report the situation to the ethics hotline or appropriate jurisdictional regulatory body.
The onsite supervisor will prepare a written record of the worker’s notification.

No disciplinary action will be taken against a worker for refusing unsafe work.

**Working Alone**

There are situations where workers may be required to work in isolation from other workers. Controls must be in place to mitigate associated hazards (e.g., communications devices, call-in procedures) while working alone.

**Incident Reporting and Notification**

It is the responsibility of all workers to report any incidents and near misses that occur on Talisman worksites to their supervisor. Contractors must ensure a Talisman representative is immediately notified.

Management will then decide if the incident requires an investigation. All incidents and near misses involving personnel, the public, the environment, or physical loss of assets or production are reported, using the Incident/Event Information Form.

*When an incident occurs:*

- stop work immediately
- ensure proper notification, as stated above
- if safe to enter, only alter the scene to administer first aid and/or to secure the area
Preservation of Evidence:

- isolate the area
- identify sources of evidence
- preserve evidence from alteration and/or removal

Harassment and Violence

Talisman is committed to providing a workplace that is free of harassment, discrimination and intimidation. The company will not tolerate any form of harassment or violence on our worksites. Immediately report any incidents to a supervisor.

Firearms

Firearms, including cross or compound bows, shall not be carried in company vehicles (while travelling on company business or while on Talisman premises), except for the following exceptions:

- where bear watch or other area-specific wildlife expertise is needed on site
  - firearms safety will be addressed in a HSE pre-job plan
  - a third party expert who is trained and competent may be utilized

- where flare guns are required:
  - site-specific procedures must be developed for the storage, transport and operation of this equipment
  - shotguns must not be used as flare guns
Smoking

Workers on Talisman worksites shall meet the following requirements:

- Smoking is **not** allowed within 75 feet of any well, facility, or in any area that may be contaminated by flammable liquids or gases.
- Smoking is permitted only in designated areas.
- Smoking is **not** allowed in Talisman vehicles.

Housekeeping

Good housekeeping practices must be followed on all Talisman worksites. Workers shall:

- maintain tools and equipment in good operating condition and properly store them when not in use
- keep aisles, stairs, walkways, building exits and entrances, and fire exits clear of obstructions
- ensure that falling, slipping, or tripping hazards are minimized on the worksite
- immediately clean up and appropriately dispose spilled toxic or corrosive chemicals
- leave all worksites in a neat, orderly fashion after the end of the job or workday
- keep roads, yards, and worksites clean by depositing refuse in appropriate garbage containers
Training and Competency

Training

Training develops competency, confidence and compliance with Talisman NAO HSE/OI objectives and regulatory requirements.

Proof of training, certification or task observation must be available upon request, before the job starts. If the worker cannot provide proof of certification, he or she may be asked to leave the worksite.

Safety Meetings

All workers are expected to participate in safety meetings, including pre-job meetings, tailgate meetings, regular safety meetings and any meeting prior to critical operations (e.g., rigging up, testing, cementing, fracing operations, and etc.)

All safety meetings shall be documented and include a list of attendees and topics discussed.
Pre-Job Meetings

Pre-job safety meetings shall be conducted by the primary contractor or designate, if there are multiple contractors’ onsite performing work.

The following information should be covered, as a minimum, during these meetings:

- Ensure all personnel clearly understand the requirements and scope of work.
- Ensure all necessary permits (e.g., safe work permit, confined space, ground disturbance, etc.) are completed and signed by a Talisman representative.
- Identify all hazards associated with the job and necessary control measures.
- Ensure the required safety equipment is available.
- Discuss site-specific emergency response and rescue procedures.
- Review applicable procedures or Job Safety Analyses (JSAs).

SIMOPS

Simultaneous Operations (SIMOPS) is the execution of two or more tasks by two or more functional group activities (including two of the same functional group) on the same location at the same time. Functional groups are responsible for assessing their activities to determine if SIMOPS will be required. SIMOPS require an approved, written plan prior to commencing.
Risks

Important surface SIMOPS risks for consideration include (but may not be limited to): hot work, gas releases, lease traffic, movement of equipment, live wellheads, surface equipment, and surface lines.

Important downhole SIMOPS risks for consideration include (but may not be limited to): wellbore collision, and wellbore communication between completions’ wellbore and drilling’s or production’s wellbore.

Controls

- Every site conducting SIMOPS requires a single point of contact (SPOC). The highest level individual supervising the function on-site who is conducting the most critical SIMOPS task shall be responsible for appointing the SPOC. The SPOC is responsible for being aware of all work onsite and ensuring hazards are appropriately mitigated.

- SIMOPS meetings shall be conducted daily by the SPOC and attended by all the Talisman onsite supervisors. The purpose of the meeting is to discuss the day’s SIMOPS scope of work and hazards associated with the work.

- Safe Work Areas (SWA): each functional group onsite must establish their SWA prior to commencing work.

- Site Access Control: access to a SIMOPS site must be controlled to ensure the SPOC knows who and how many people are on site in the event of an emergency.
Management of Change

Workers must ensure integrity, safety and operability are maintained when making modifications or changes to equipment, procedures or personnel.

Management of change provides for proper technical review, authorization, risk/hazard assessment and record keeping.

This applies to the following changes and modifications:

- changes in equipment, piping, instrumentation or electrical components
- any repair or replacement, except “in kind”
- change in alarm settings, interlocks and process trips
- change in relief valve setting or capacity
- changes of process control software
- operating outside the limits of the original design basis
- changes in location, or type, of safety and protective equipment
- planned by-pass of safety devices
- change in material being processed, or utilized, in the process
- installation of new flow lines, or other change in inlet rate

To facilitate proper discussion, assessment and authorization of the proposed change, the MOC owner must follow the Talisman MOC process, with input from all pertinent stakeholders for the change.
**Personal Protective Equipment**

PPE is the last line of defense against hazards inherent to the design and operation of our facilities, tools and equipment. Proper use and maintenance of PPE is vital to worker safety.

Minimum PPE requirements include the following:

**Clothing**

Full-length, long-sleeved, flame resistant (FR) clothing must be worn at all operating Talisman worksites unless otherwise specified by the local delivery unit risk assessment. External clothing must be flame resistant (FR) fabric and contain reflective material to meet requirements of a reflective vest or reflective striping on the chest, back, arms and legs.

Nylon or synthetic clothing is not permitted.

Hooded garments are not permitted on any Talisman worksites.

**Head Protection**

Wearing hard hats is mandatory on Talisman operating worksites. Liners, including caps, which are not specifically designed to be compatible with the protective properties of the hard hats, are not permitted, as they may compromise the fit of the hard hat.

Head protection shall meet the requirements of ANSI Z89.1 standard.
Footwear

Approved safety footwear is mandatory for any person required to work at all Talisman work sites.

Safety footwear shall meet the requirements of ASTM F2412.

Safety footwear must:

- be in good condition (and with adequate traction for the work surface or environment where the work is being conducted)
- have ankle support at least 6 inches high
- be suitable for the task being performed
- be suitable for the weather conditions
- be laced up completely and securely tied at all times
- contain a safety-toe

Note: Personnel on seismic crews are required to wear hiking boots with over-the-ankle support and treads.

Eye Protection

Workers must wear eye protection at all times on Talisman worksites.

All protective eyewear, including prescription safety glasses, must be fitted with side shields that are appropriate to the hazards.

Face shields (or other protective equipment) must be made available to and worn by workers when required by the nature of the work (e.g., operating chain saws and grinding, working with chemicals and etc.).
The use of contact lenses on Talisman worksites is acceptable only when proper eye protection is worn. If working with chemicals, consult the Safety Data Sheet (SDS) regarding the wearing of contact lenses during chemical handling.

Eye and face protectors shall meet the requirements of ANSI Z87.1.

**Hearing Protection**

Hearing protection is to be worn by the worker in posted work areas, or when working with equipment that exceeds the allowable noise exposure, as per jurisdictional regulations. Some areas and activities may require double protection.

All hearing protection equipment is to meet ANSI S12.6 guidelines or OSHA 1910.95 requirements.

Also refer to the “Health Control” section of the Handbook for more information on “Noise Exposure” (page 58).

**Hand Protection**

Gloves, of a style appropriate for the work being performed, shall be worn.

**Long Hair and Jewelry**

Long hair shall be tied back to prevent entanglement in moving parts or equipment.

No Jewelry is to be worn except what is medically necessary. Medically necessary jewelry shall be worn so it is not an entanglement hazard.
Respiratory Protection

If respiratory protection is required on site, workers must be trained on their safe use and maintenance. Workers must also be clean-shaven, fit tested and medically evaluated to wear a respirator. Anyone failing to comply with these requirements will be refused access to the site.
Emergency Preparedness

Emergency Contingency Plans

Emergency contingency planning may significantly reduce the potential for accidental injury or loss.

Critical roles and responsibilities, internal and external communication procedures and key contacts must be determined in advance and periodically tested.

All workers onsite must be familiar with:

- types of alarms and necessary responses
- muster point locations
- emergency communications systems (e.g., journey management, working alone, etc.)
- emergency response plans
- emergency equipment (first aid kits, extinguishers, SCBA, as required)
- spill response plans
- emergency transportation plans
- call-in system requirements
- emergency action bills
Fire and Emergency Equipment

Fire and emergency supplies and equipment must be available on all Talisman worksites.

The supplies and equipment may include the following: fall protection; self-contained breathing apparatuses (SCBA); supplied air breathing apparatuses (SABA); respirators; fire extinguishers, etc.

Equipment must be maintained in proper operating condition and serviced according to the manufacturer’s specifications.

Workers who may be required to use emergency equipment must be trained and deemed competent in its use.

On-Site First Aid Requirements

First aid services, supplies, and equipment will be available in quantity and type based on the risks identified on Talisman worksites.

Health Control

Potential health hazards associated with the work environment need to be recognized, evaluated and controlled.

It is the workers’ general responsibility to ensure they are following any appropriate procedures that relate to their health.
Hazardous Material

Various types of hazardous materials are produced, stored, used and handled at Talisman worksites. These include flammable materials, corrosive liquids, and toxic chemicals and gases.

Workers must ensure they comply with the requirements specified in the Department of Transportation (DOT) regulations and OSHA’s GHS/Hazcom 2012 standard that outlines a worker’s “Right to Understand.”

Workers must be trained and have access to Safety Data Sheets (SDS) for the chemicals to which they may be exposed.

Bloodborne Pathogens

Universal precautions are the best way to protect against exposure to bloodborne pathogens (e.g. latex gloves during emergency response). Universal precautions are standards of infection control practices that are designed to reduce the risk of transmission of bloodborne infections.

Human blood, and certain human body fluids, must be treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

Affected workers must follow the requirements of their company’s exposure control plan.
Benzene

Talisman follows the Health Canada / ACGIH standards. Under these standards, the eight hour time weighted average (TWA) for benzene is 0.5 ppm. The short term exposure limit (15 minute average) is 2.5 ppm. A worker who may potentially be exposed to benzene above these levels must receive awareness training on:

- properties and health hazards of benzene, based on SDS information
- typical locations of benzene-containing streams
- control measures, including required personal protective equipment
- limitations and correct use of respiratory protection

Exposure to around 10,000–20,000 ppm of Benzene for 5 to 10 minutes can cause death. Exposure to 500 ppm is considered to be immediately dangerous to life or health.

<table>
<thead>
<tr>
<th>Typical Sources of Benzene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional oil and natural gas</td>
</tr>
<tr>
<td>Drilling</td>
</tr>
<tr>
<td>Pipelines</td>
</tr>
</tbody>
</table>
Gas Detection

Personal and area atmospheric monitors are required, based on the potential hazards of a work environment.

Workers must be trained and knowledgeable in using handheld detection instruments. Workers must have, at a minimum, a working four-head personal monitor (O₂, H₂S, LEL, CO).

All monitors must be calibrated and bump tested, as per manufacturers’ specifications.

Drilling and completions rig sites will be equipped with fixed gas monitoring equipment and, in sour locations, monitoring specialists are required onsite, negating the need for personal monitors.

Hydrogen Sulfide (H₂S)

Hydrogen Sulfide is a colorless, flammable gas having an offensive odor and a sweetish taste. It is highly toxic and hazardous because it is heavier than air (density 1.19). While having a characteristic and easily recognizable odor of rotten eggs, this gas quickly weakens the sense of smell, making this an unreliable method of detecting hazardous concentrations.

Any worker who is, or may be exposed to H₂S, must hold a current H₂S Awareness certificate, be competent in the use and maintenance of required PPE (i.e., breathing apparatus, monitors, etc.) and fully understand the rescue procedures to be followed in the event of an emergency.
Naturally-Occurring Radioactive Materials (NORM)

Natural radioactivity is present in rocks and soils. Many oil and gas industry waters (e.g., produced water) are particularly rich in chloride, and this enhances the solubility of other elements, including the radioactive element of radium. Controls need to be used to mitigate exposures to NORM such as but not limited to personal protective equipment.

Silica

Silica is an ingredient in frac sand. Exposures to airborne silica need to be monitored to determine silica concentrations compared to OSHA standards and whether respiratory protection is needed.

Noise Exposure

Noise level surveys are to be completed periodically at all facilities where noise levels may meet, or exceed, 85 dBA 8-hour time-weighted average.

Noise surveys must be re-surveyed when significant modifications are made to the facility or equipment.

Where surveyed levels are found to be in excess of 85 dBA 8-hour time-weighted average, proper signage shall be posted and workers must wear hearing protection.

Noise exposed personnel are subject to periodic audiometric testing.
Ergonomics

Manual Handling and Lifting

All workers required to perform manual lifting tasks shall receive proper instruction on back care and lifting methods to meet the following safety requirements:

- Bend your legs to get close to the object, keep your back straight, get a firm grasp, tighten your abdominal muscles, and lift by straightening the legs.
- If the object is too heavy or awkward, obtain assistance or use mechanical lifting equipment.
- Always move your feet to change directions; do not twist at the waist.

A significant portion of injuries within our industry involve hand injuries. Always be aware of hand placement and ensure hands are not in the path of an energy source when manually handling equipment.

Environmental Protection

Talisman is committed to protecting the environment during all phases of its operations. We must ensure our operations comply with statutory and regulatory requirements, corporate policy and applicable industry standards to protect the environment and the public.
Workers must:

- determine, evaluate and mitigate environmental impacts associated with their business
- ensure controls are in place to prevent oil, gas and chemical leaks
- respond to and report spills in a prompt and effective manner to a Talisman representative
- ensure workers do not trespass, or cause environmental impact, on lands adjacent to Talisman worksites

**Equipment**

**Bonding and Grounding**

When bonding or grounding, workers shall meet the following safety requirements:

- Ensure all trucks used to transport flammable products are equipped with, and use, grounding and bonding cables.
- Ensure cables are attached to a clean grounding point before any piping is connected, or valves opened, and before any transfer of product takes place.
- Disconnect cables only after the operation is completed.
- Ensure metallic containers for flammable liquids are bonded together and grounded during product transfer.
Cutting and Welding

When cutting and welding, workers shall meet the following safety requirements:

- Take precautions against fire, explosion, or asphyxiation when using cutting and welding equipment.
- Ensure only competent workers are allowed to use cutting and welding equipment. A Talisman representative must authorize all welding and hot work.
- When cutting and welding within 75 ft of any pressure vessel, pipeline, or area where a combustible atmosphere or materials may exist, complete a hot work permit and air monitoring before starting the job.

Grinding and Cutting Tools

All portable and stationery grinding and cutting tools must be equipped with the appropriate guard and tool rest. The maximum stipulated RPM of the grinding disk must not be exceeded.

Workers conducting grinding / cutting operations are required to where an impact-resistant faceshield and safety glasses.
Compressed Gas Cylinders

The use, handling and transportation of compressed gas cylinders shall meet applicable OSHA, DOT, and NFPA requirements, including, but not limited to, the following:

- Promptly return all cylinders to the designated storage area after use.
- Place protective caps over the cylinder valves when not in use, or when being moved or transported by any means.
- Do not use slings, ropes, or chains to lift a cylinder.
- Do not lift cylinders by protector caps.
- Do not transport cylinders by mobile cranes, unless an approved carrier is used for this purpose.
- Keep cylinders away from heat, molten metal, or electric lines.
- Store cylinders in the upright position and secure them against dislodgement (never place acetylene, or liquid gas cylinders, in a horizontal position).
- Keep compressed gas cylinders at least 20 feet from highly combustible or flammable materials, such as oil or chemicals. Alternatively, separate the cylinders with a metal wall 5 feet high and 1/4 inch thick.

Non-intrinsically Safe Equipment

Non-intrinsically safe equipment (e.g., cell phones, hand tools, remote starters, flashlights, cameras, vehicle key fobs, etc.) in locations where there is a potential for flammable gas or vapor is prohibited unless authorized by a hot work permit.
## Emergency Contact Numbers by Area

<table>
<thead>
<tr>
<th>Area</th>
<th>Contact Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horseheads, NY</td>
<td>1-800-530-5392</td>
</tr>
<tr>
<td></td>
<td>(607) 425-5664</td>
</tr>
<tr>
<td>Pittsburgh, PA</td>
<td>1-800-530-5392</td>
</tr>
<tr>
<td>Houston, TX</td>
<td>1-800-530-5392</td>
</tr>
<tr>
<td>Good Neighbor Hotline</td>
<td>1-866-566-4747</td>
</tr>
<tr>
<td>Ethics Hotline</td>
<td>1-877-213-1029</td>
</tr>
</tbody>
</table>

Talisman Energy Head Office **Emergency** contact number in Calgary (403) 237-1234

or

1-877-856-7238