CA PECL G08 10 013 I

Rev 2.1 March 2021

LOCKOUT TAGOUT FRAMEWORK

PETRONAS ENERGY CANADA LTD.

DOCUMENT AUTHORIZATION

Approved By:

Name	Mursyidie Ali on behalf of Michelle Colleton
Position	Director, HSE, Systems & Planning on behalf of Head, Health & Safety
Date	March 23, 2021

Document Owner:

Name	Ron Mann
Position	Team Lead, Health & Safety
Date	March 18, 2021

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1. Summary Statement

The Lockout Tagout Framework provides a documented series of sequential actions for the isolation of equipment and energy sources to provide a safe work environment for maintenance and repair activities, which will support the implementation of the Health, Safety, Security, and Environment Policy.

2. Objectives

The objectives of this Framework are to:

- Provide an overview of the process for lockout tagout activities;
- Describe the Lockout Tagout Procedures;
- Describe requirements for the Lockout Tagout Isolation Plan Form;
- Identify the equipment for isolation;
- Describe the requirements of a Job Hazard Assessment;
- Describe the isolation assessment;
- Describe the system preparations for maintenance;
- Describe the different isolation procedures;
- Describe the different isolation methods;
- Describe the supervisory removal of personal locks;
- Identify the requirements of shift handover;
- Outline roles and responsibilities for lockout tagout activities;
- Outline competencies for lockout tagout activities; and
- Outline the performance measures criteria.

3. Scope

This Framework applies to all Employees, Contractors, and Consultants. It applies to all business activities of the Company where the isolation of equipment or energy is necessary to complete maintenance, repair, or other activities.

4. Definitions

Capitalized terms used herein have their meanings set forth in the Master Glossary.

5. Requirements

5.1 Overview

This framework outlines the sequential steps in the process to be used to ensure that prior to work being performed on equipment where sources of energy (i.e. pneumatic, electrical, hydraulic, mechanical, chemical, thermal) is present, it is isolated in such a manner that it is safe to perform work on and that a zero energy state is achieved. The physical lockout and tagout of equipment ensures that workers are not exposed to potential hazards when breaking integrity of equipment to perform work activities.

5.2 Lockout Tagout Procedure

Lockout and tagout must be carried out for all work activities where the breaking of integrity, stored energy or potential of exposure to trapped pressure can exist and assurance of a zero energy state is required. The Procedure has been divided into Single Isolation and Group Isolation Procedures.

5.2.1 Lockout Tagout – Single Isolation

The Single Isolation Procedure is to be used when only one worker will be performing work on equipment and no other workers will be involved in the job scope. This procedure ensures that the equipment is properly isolated ensuring a zero energy state for the single worker performing the work. The single worker is always in care and control of the isolated system and no other workers can perform work on the isolated system. Further requirements are defined in the Isolation Procedures section of this Framework.

5.2.1 Lockout Tagout – Group Isolation

The Group Isolation Procedure is to be used when multiple workers will be performing work on equipment. This procedure ensures that the equipment is properly isolated ensuring a zero energy state for all workers performing the work. It also ensures that each individual worker performing work on the isolated system is always in care and control of the isolated system and no other workers can affect the integrity of the isolated system. Further requirements are defined in in the Isolation Procedures section of this Framework.

5.3 Lockout Tagout Isolation Plan

A Lockout Tagout Isolation Plan Form is required for all isolation activities. The form will be created by qualified Worker(s) and will address the following:

- Identification of hazardous energy sources;
- De-energization method and requirements;
- Isolation requirements;
- Installation of locks;
- Performing planned work activities;

- Removal of locks; and
- Re-energization method and requirements.

The Lockout Tagout Isolation Plan must be approved, signed off and dated prior to any work activity commencing.

Approvers of a Lockout Tagout Isolation Plans include the following PECL personnel:
- Supervisors
- Lead Operators
- Level 1 Operators
- Steam Chiefs
- Technical Advisors

Where a single LOTO is being utilized for maintenance activities, the Worker (employee, consultant) performing the maintenance work cannot create, approve and install the locks on the isolation points. The Lockout Tagout Isolation Plan Form must be reviewed and approved by a second worker as per section 5.3.

Where a group LOTO is being utilized for maintenance activities, the Lockout Tagout Isolation Plan must be developed and reviewed by two competent PECL Workers (employee, consultant) and approved as per section 5.3. The Worker (employee, consultant) who created the Lockout Tagout Isolation Plan can hang the first set of locks. The second set of locks can be hung by a Worker (employee, consultant or contractor) providing the Lockout Tagout Isolation Plan has been reviewed by two competent PECL Workers and approved as per section 5.3.

5.3.1 Creating the Lockout Tagout Isolation Plan

A Lockout Tagout Isolation Plan Form requires each isolation point to have:

- A numeric identifier;
- A short description;
- An indication of valve status or position the energy source is to be left in (closed, open, etc.);
- The method of isolation (closed, blinded, etc.); and
- The method of securement (normally locked).

The Lockout Tagout Isolation Plan Form will provide reference to:

- The equipment description/identifier, if available;
- Associated P&ID(s), if available;
- Approved schematics, if available;
- Lock box;
- Lock numbers; and
- The name of the qualified worker(s) that installed the isolation devices and locks.

This information is documented on the relevant Lockout Tagout Isolation Plan Form (single and group).

A current copy of the Piping and Instrumentation Drawings (P&ID) or approved schematics, if available must be used to help clearly identify all isolation points in the Isolation Plan and will be readily available and on site, indicating the isolation points.

If P&IDs or approved schematics do not exist for the site due to legacy drawing issues, work may still proceed.

5.4 Equipment for Isolation

5.4.1 Process Locks

Process locksets managed by PECL and used for Single Isolation or Group Isolation must be keyed alike and will be uniquely identified by a colour code, number or some other identification method. Process locks must be installed and removed for maintenance activities by qualified and competent worker(s). Each lockset used to isolate potential energy sources for both single and group isolation must be documented on the Lockout Tagout Isolation Plan Form. Combination locks are not to be used as for process locks.

5.4.2 Personal Locks

Personal locks must be individually keyed (no two alike) and are only required for Group Isolation activities. Personal locks are to be only installed and removed by the owner of the lock. Combination locks are not to be used as a personal lock.

5.4.3 Lock Box

Group lockouts require the use of a lock box to house the keys and remaining locks to control access to the isolated system.

5.4.4 Car Seals

For all Group Isolation activities, two individually numbered carseals must be placed on the associated lockbox. The worker who applies the first set of locks onto the isolated system using the Lockout Tagout Isolation Plan Form places the primary Carseal on the lockbox. The second worker who verifies the system has been effectively isolated as per the Lockout Tagout Isolation Plan Form places the second Carseal on the lockbox. These Carseals are in place to effectively control the isolated equipment and ensure that no one can tamper with the isolated system. Once Carseals are in place, the only locks required on the lockbox are the personal locks of the Worker(s) who are involved in the work activity.

5.4.5 Process Lock Tags

A single Tag will be attached to process locks that are used to secure valves, electrical disconnects, or other energy control devices within the isolation activity for both Single and Group Isolation

Each tag must:

- Include "Danger DO NOT Operate" displayed on tag;
- Include the date of the isolation;
- Include the lock box number;

5.4.6 Personal Lock Tags

All workers performing work on a system where Group Isolation is required will ensure that an identification tag accompanies their personal lock on the associated lockbox.

The following information will be included on a personal lock tag:

- Worker's name;
- Trade; and
- Company's name.

5.5 Job Hazard Assessment

The Permit Receiver (during group isolation) or Worker (during single isolation) must conduct a Job Hazard Assessment to identify hazards, and appropriate isolation devices that may be required for isolation. The JHA is conducted with all Workers working on isolated equipment. This process must follow the Work Site Management Framework and the Permit to Work Framework.

5.6 Isolation Assessment

The Permit Issuer (during group isolation) must complete an isolation verification walk down with all Workers working on the isolated equipment to identify hazards and to verify a zero energy state prior to the commencement of the work activities. The walk down must be documented and signed off utilizing the Isolation Assessment Form in accordance with the Work Site Management Framework.

Where a Company Employee or direct Contractor is performing work on an isolated system (during single isolation) they are not required to perform an isolation verification walk down or fill out an Isolation Assessment Form as long as no other workers or trades will be performing work on the isolated system.

5.7 Prepare System for Maintenance

System maintenance is carried out in accordance with the Commissioning and Operating Technical Standard and the Field Asset Management and Reliability Technical Standard.

5.7.1 Single Isolation

Before any work commences on any system, the Worker performing isolation activities must confirm that the system is free of any energy sources and or toxic or other hazardous substances. The Worker must

then ensure that all of the following steps have been taken to eliminate or mitigate the hazards as required:

- Depressurising of vessels and lines;
- Draining of any vessels or lines;
- Cooling of any high temperature systems;
- Purging with an inert gas (e.g. Nitrogen (N2));
- Removal of hazardous liquids;
- Removal of hazardous vapours or gases;
- Removal of hazardous solids;
- Use of specialized cleaning techniques; and
- Testing to confirm absence of hazard.

The installation of a process lock for Single Isolation when performing maintenance activities involves one qualified and competent Worker. The removal of a process lock for Single Isolation after maintenance activities have been completed can be performed by one qualified and competent Worker which does not have to be the Worker who originally installed the locks.

5.7.2 Group Isolation

Before any work commences on any system, the Permit Issuer must confirm that the system is free of any energy sources and or toxic or other hazardous substances. The Permit Issuer must then ensure that all of the following steps have been taken to eliminate or mitigate the hazards as required:

- Depressurising of vessels and lines;
- Draining of any vessels or lines;
- Cooling of any high temperature systems;
- Purging with an inert gas (e.g. Nitrogen (N2));
- Removal of hazardous liquids;
- Removal of hazardous vapours or gases;
- Removal of hazardous solids;
- Use of specialized cleaning techniques; and
- Testing to confirm absence of hazard.

The installation of process locks for Group Isolation when performing maintenance activities involves two qualified and competent Workers. The removal of process locks for Group Isolation after maintenance activities have been completed can be performed by one qualified and competent Worker which does not have to be the any of the Workers who originally installed the locks.

5.7.3 Isolation of Complex Systems

A complex system is one in which the equipment or layout is beyond the understanding of the assigned Permit Issuer, during group isolation or worker during single isolation. To successfully isolate a complex system, one or more Subject Matter Expert(s) (SME) (electrical, instrumentation, mechanical, etc.) may be necessary to assist the Permit Issuer (during group isolation) or Worker (during single isolation) in developing the Lockout Tagout Isolation Plan Form.

5.8 Isolation Procedures

5.8.1 Single Isolation Procedure

This method is used for maintenance work where a single Worker is involved (i.e. Employee or Consultant). If there is more than one Worker, group isolation is required.

The single isolation procedure requires:

- The single Worker be a qualified worker;
- A Lockout Tagout Isolation Plan Form;
- JHA Form; and
- A single lockset, tags and the necessary hardware to isolate each point identified by the Lockout Tagout Isolation Plan Form.

5.8.2 Group Isolation Procedure

This method is used for maintenance work where multiple Workers are involved, and for which two qualified Workers are identified on the Lockout Tagout Isolation Plan Form to apply locks to the isolation points.

Requirements for group isolation are as follow:

- A Permit Issuer;
- A Permit Receiver;
- A JHA Form;
- A Lockout Tagout Isolation Plan Form;
- Associated P&ID(s), if available;
- A Permit to Work;
- Two lock sets with sufficient locks and tags to lockout each isolation point;
- 2 car seals, one for each qualified worker who hangs the individual sets of locks; and
- A lock box.

5.8.3 Multiple Individual Isolation Procedure

The Company does not support the use of the multiple individual isolation method. This involves workers installing personal locks at each isolation point identified in the Lockout Tagout Isolation Plan Form as well as the Lockout Box. When such method is considered, Workers must use the group isolation procedure referred to in this Framework.

5.8.4 Lockout Tagout (LOTO) Not Required

This section outlines the process to be followed when a decision is made to perform work on a system where Lockout Tagout is not required when:

- The energy isolating device is under the exclusive and immediate control of the worker at all times while working on the machinery or equipment, or
- A tool, machine or piece of equipment which receives power through a readily disconnected supply, such as an electrical cord or quick release air or hydraulic line, is disconnected from its power supply and its connection point is kept under the immediate control of the worker at all times while work is being done.

Lockout Tagout is not required only if the energy isolating device is under the exclusive and immediate control of the worker, and it is not reasonably foreseeable that that the machine or equipment could be started inadvertently by the worker performing the work, or by any other worker.

A worker has exclusive and immediate control of the energy isolating device if all of the following criteria have been met:

- The machine or equipment has only one set of operating controls, the equipment is stopped, and all potential sources of energy are reduced to a zero energy state;
- The energy isolating device remains in the field of vision of the worker at all times while the task is being done and is located so any move by another worker to activate the control will be immediately obvious to the worker doing work on the machine or equipment; and
- Written safe work procedures exist for the task, and the affected workers are trained in and follow those procedures.

The written procedures must be specific to the work being performed.

Examples where work may be performed without the use of a Lockout Tagout can include but are not limited to:

- Pigging;
- Filter changes;
- Calibrations;
- Sampling;
- Plunger Inspections;
- Installation, removal and operation of PST (Pressure Sealing Thread) type lubricators;
- Sight Glass Cleaning;
- Cleaning of witches hats and Y strainers; and

- Chemical pump maintenance.

5.9 Isolation Methods

5.9.1 Double Block and Bleed

Double block and bleed isolation will be the process used for valve isolation where available, provided the valves can maintain a reliable seal under the particular conditions of service.

Double block and bleed consists of the closure of two valves in series, with an intermediate bleed valve. The bleed valve must be vented to a safe location: to atmosphere; flare header; or to a drain vessel where no back pressure may accumulate. The block and bleed valves will be fitted with lockout device and tags. The orientation of a double block and bleed is shown in Figure 1 below:

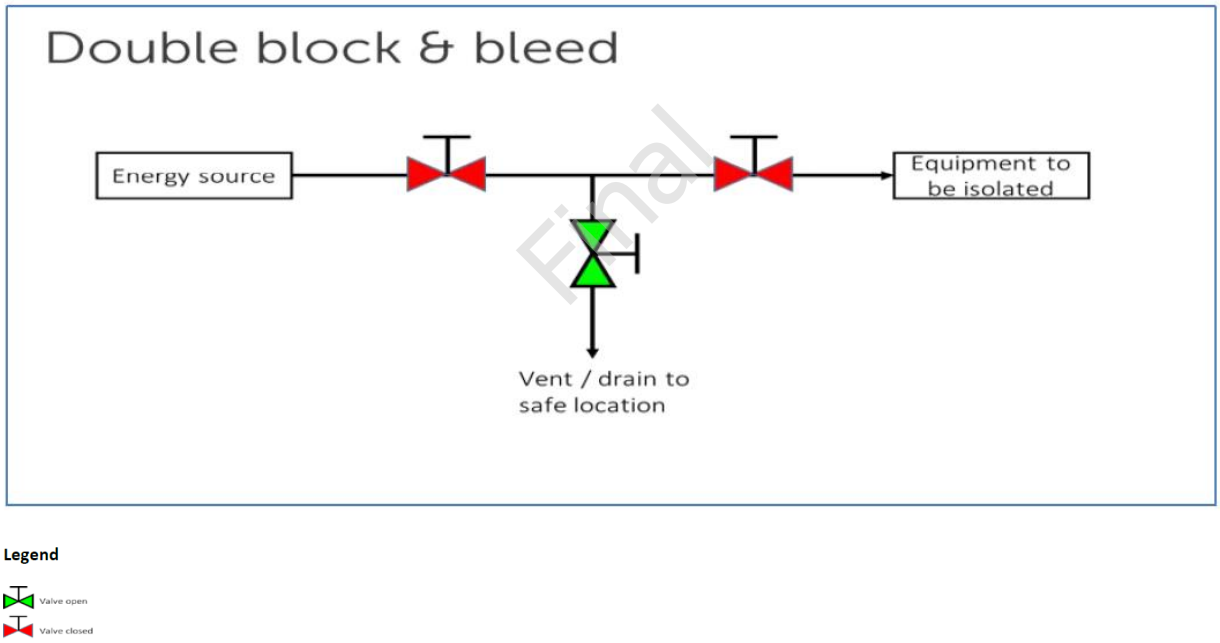


Figure 1: Configuration of a double block and bleed isolation.

Emergency shut down valves may be used as part of double block and bleed isolation, providing they can be reliably immobilized. The isolation must be effected in such a way that the integrity of each valve is proven during the isolation. Checks for the continued correct functioning of associated trip systems are essential.

5.9.2 Single Valve Isolation (SVI)

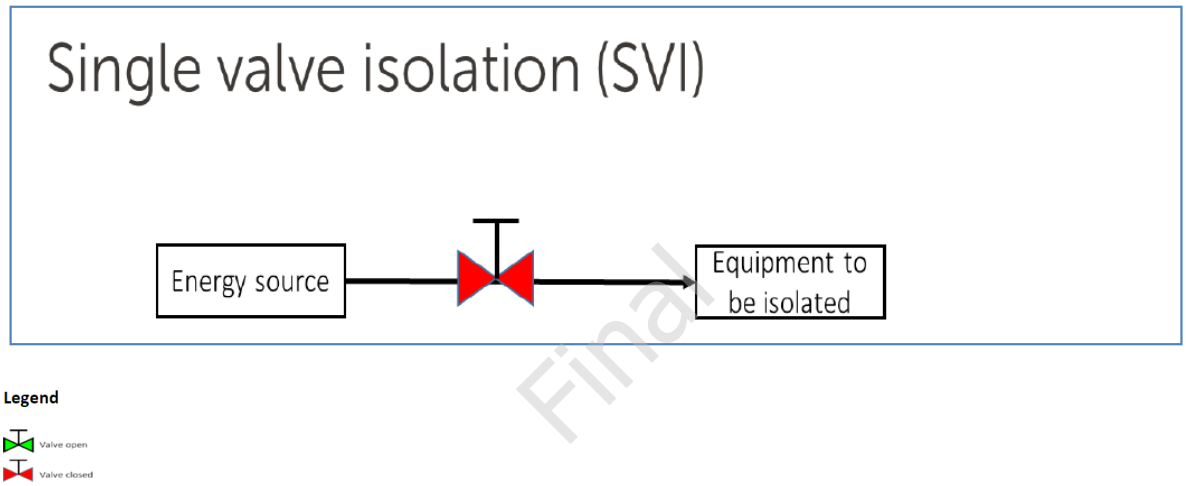
For work on a system connected to other systems containing non-hazardous material, single valve isolation is acceptable, provided there is no possible release of other hazards such as high pressure and high temperature, in which case positive isolation or double block and bleed is the preferred choice. If it

is not feasible, a specific procedure developed by operations is to be established, communicated and implemented to address the hazard.

For work on a system that contains hazardous material where only single valve isolation is available, a risk assessment must be completed and approved as per the Risk Matrix Standard. A method to prove zero energy must be established prior to work commencing.

As a last resort, if actuated valve is used as an isolation valve, mechanism of disengaging/clamping the actuated valve will be clearly established.

Figure 2: Configuration of a single valve isolation (SVI)



5.9.3 Drain and Vent Valves

Requirements for the use of drain and vent valves are as follows:

- Drain and vent valves must be tagged in the open position, hoses and/or tubing may be required to vent product to a safe location away from the work being conducted;
- The vent area must be flagged off to warn workers that the area may have harmful vapours;
- Periodic monitoring of drains, vents, and venting areas for releases of product is required;
- All drains and vents will be proven clear; and
- Drain and vent valves isolation points used as part of the Lockout Tagout must to be identified on the Lockout Tagout Isolation Plan.

Drains and vent valves do not require locks to be installed as ease of access to open or close is required in the event of an upset or emergency.

5.9.4 Motor Control Centre (MCC) Breakers and all Electrical Disconnects

Requirements for the use of MCC breakers and electrical disconnects are as follows:

- MCC breakers and electrical disconnects must be locked in the open position;
- When locking out MCC breakers or electrical disconnects, a multi-lock device (scissor) must be placed on the breaker allowing for two lock sets to be placed on the same breaker;
- In all cases involving electrical isolation where arc flash hazards exists, appropriate personal protective equipment (PPE) must be considered as per the Personal Protective Equipment Technical Standard.
- MCC breakers and electrical disconnects that are part of the Lockout Tagout must be identified on the Lockout Tagout Isolation Plan.

5.9.5 Local Start Stop Switches

Requirements for the use of local start stop switches are as follows:

- The Permit Issuer must operate the local start or stop switch to verify that the equipment is properly de-energized;
- The local start stop switches must be tagged but not locked to allow for testing; and
- Local Start Stop Switches that are part of the lockout tagout must be identified on the Lockout Tagout Isolation Plan.

5.9.6 Equipment Disconnects

Equipment power supplies (i.e. electrical, pneumatic, air, fuel gas…etc.) can be disconnected from the system being isolated. The Isolation points need to be identified on the Lockout Tagout Isolation Plan Form including the equipment power supply disconnect points used for isolation.

5.9.7 Pneumatic Actuated Valve

The air to the air actuated valve must be shut off and the actuator must be depressurized where fail close is the normal operation of the ESD. The Worker must verify that the valve does not move and then the air supply can be disconnected and locked. The disconnected isolation points need to be identified on the Lockout Tagout Isolation Plan Form.

5.9.8 Electrical Heat Tracing Isolation

Isolation of all electrical heat tracing will be completed by instrument or electrical personnel.

If the electrical heat trace circuit is common to other equipment that requires the electrical heat trace to be on during the proposed work, the instrument or electrical personnel will:

- De-energize the circuit (following the single isolation procedure);

- Disconnect the required electrical heat trace;
- Re-energize the circuit;
- Attach a "Danger-Do Not Operate" tag to the isolation point or exterior of the electrical heat trace cabinet to identify the electrical heat trace circuit has been disconnected; and
- Provide the Permit Issuer (during group isolation) or the Worker (during single isolation) with the details of the isolation for recording on the Lockout Tagout Isolation Plan Form.

In all other circumstances, the electrical heat trace will be de-energized and locked out as part of the Lockout Tagout Isolation Plan.

5.9.9 Cathodic Protection

Isolation of all cathodic protection will be completed by instrument or electrical personnel.

If the cathodic protection circuit is common to other equipment that requires the cathodic protection to be on during the proposed work, the instrument or electrical personnel will:

- De-energize the circuit (following the single isolation procedure);
- Disconnect the required cathodic protection;
- Re-energize the circuit;
- Attach a "Danger-Do Not Operate" tag to the isolation point or exterior of the cathodic protection cabinet to identify the cathodic protection circuit has been disconnected; and
- Provide the Permit Issuer (during group isolation) or the Worker (during single isolation) with the details of the isolation for recording on the Lockout Tagout Isolation Plan Form.

In all other circumstances, the cathodic protection will be de-energized and locked out as part of the Lockout Tagout Isolation Plan.

5.10 Supervisory Removal of Personal Locks

A lockout device removal authorization must be obtained and documented on a Lock Removal Authorization Form for the following circumstances:

- The locked out and tagged out system needs to be revised based on job scope where the owner of the lock is not available;
- A lockout device has been abandoned;
- A Worker has left the site and their lockout device is still on;
- A lock set key has been lost;
- A personal lock key has been lost; or
- An emergency situation develops that requires the removal of the lockout device.

5.11 Shift Handover

If work cannot be completed by the end of a Worker's scheduled rotation or upon job reassignment, the Worker will complete shift handover in accordance with the Commissioning and Operating Technical Standard, and comply with the following additional requirements:

- All work must stop;
- The Permit Issuer (during group isolation) if applicable, must remove their personal lock;
- The incoming Permit Issuer (during group isolation) or Worker (during single isolation) must use the current Lockout Tagout Isolation Plan Form to verify the isolation and sign off that the isolation is as per the plan; and
- All new Workers performing work on the isolated system must install personal lock(s) (group isolation) before work is allowed to continue where applicable; and
- Permit issuer (group isolation) to ensure personal locks are installed for group isolation activities on the lockbox before the re-issuing of a PTW

5.12 Modifying a Lockout Tagout Isolation Plan

Only Permit Issuers (during group isolation) and Workers (during single isolation) are authorized to modify a Lockout Tagout Isolation Plan.

When changes are required to a Lockout Tagout Isolation Plan, the Permit Issuer must:

- Stop all work;
- Cancel the current PTW (if applicable);
- Remove applicable personal locks (lock owners are the only ones who can remove personal locks);
- Revise and update the Lockout Tagout Isolation Plan Form, and the available P&ID(s);
- Obtain approval from a PECL representative as per section 5.3 on changes to the Lockout Tagout Isolation Plan;
- Complete the isolation changes and reapply locks, following the revised Lockout Tagout Isolation Plan and taking into account any unfinished work;
- Review and update the JHA Form to ensure changes do not create a new or unforeseen hazard or unsafe condition;
- Reissue the Lockout Tagout Isolation Plan and communicate the changes to the Workers involved in the isolation activities;
- Conduct an isolation assessment walk down of the equipment utilizing the Isolation Assessment Form; and
- Renew the PTW (if applicable).

5.13 Roles and Responsibilities

The requirements included in this Framework shall be in compliance with all applicable laws and regulations.

The identification and isolation of energy sources, which may be a risk to personnel, is the responsibility of those involved in work planning activities carried out under a Permit to Work in accordance with the Permit to Work Framework and the Work Site Management Framework.

5.13.1 Person in Charge/Permit Issuer

The Permit Issuer must be present during the group isolation activities and is responsible for the following:

- Coordinating the work activities of all workers involved in energy isolation, including confirming that effective energy isolation has been established;
- Identifying and communicating energy source hazards related to the specific location that may require isolation;
- Verifying through active monitoring that the requirements of this Framework are complied with;
- Creating and verifying the Lockout Tagout Isolation Plan;
- Getting approval of the Lockout Tagout Isolationas per section 5.3;
- Reviewing the Job Hazard Assessment;
- Isolating, locking out, and tagging machines and equipment as identified in the Lockout Tagout Isolation Plan;
- Verifying that isolation requirements identified in the Lockout Tagout Isolation Plan have been implemented by walking down the jobsite with all workers involved in the job task prior to issuing a PTW and documenting on the Isolation Assessment Form in accordance with the Work Site Management Framework;
- Managing the lock box;
- Verifying that all isolation points are properly locked out and tagged by testing;
- Stopping all work if the requirements of this Framework are not being followed or if there is a failure of any of the installed devices;
- Removing all isolation equipment and restoring all isolation points to pre-isolation status following the completion of the work activity;
- Closing out the PTW; and
- Verifying that the requirements of this Framework have been met by utilizing the Lockout Tagout Verification Form.

5.13.2 Permit Receiver

During Group Isolation activities, the Permit Receiver is responsible for:

- Completing the Company online safety orientation through Safety Sync;
- Attending site-specific orientation (performed using the Site-Specific and Visitor Orientation Checklist;
- Participating in the isolation verification walk down, and the completion and approval of the Isolation Assessment in accordance with the Work Site Management Framework;

- Leading and or participating in the development of the JHA Form for the work to be performed;
- Ensuring all applicable Standard Operating Procedure (SOP) documents are identified and those SOPs are readily available for the Workers review prior to task;
- Receiving and confirming that expectations identified on the PTW have been communicated to Workers involved in that particular work scope;
- Placing a personal lock and tag on the associated lockbox if performing work on the isolated system;
- Ensuring that work permitting occurs prior to starting any work activity;
- Following the energy isolation requirements detailed in this Framework;
- Stopping all work and informing the Permit Issuer if the requirements of this Framework are not being followed or if there is a failure of any of the installed devices; and
- Ensuring all Incidents, Near Misses, Unsafe Acts, and Unsafe Conditions are reported in accordance with the HSE Incident Management Framework and HSE Investigation Framework.

5.13.3 Worker Single Isolation Activities (Employee, Consultant)

During single isolation Activities, only a Company Worker (Employee or Consultant) will be present and has the following responsibilities:

- Developing the Lockout Tagout Isolation Plan Form;
- Getting approval of the Lockout Tagout Isolation Plan as per section 5.3;
- Applying necessary locks and tags;
- Developing the JHA Form;
- Isolating, locking out, and tagging machines and equipment as identified in the Lockout Tagout Isolation Plan;
- Verifying the effectiveness of the isolation through identification of a zero energy state;
- Following the energy isolation requirements detailed in this Framework;
- Stopping all work if the requirements of this Framework are not being followed or if there is a failure of any of the installed devices;
- Removing all isolation equipment and restoring all isolation points to pre-isolation status following the completion of the work activity; and
- Verifying that the requirements of this Framework have been met by utilizing the Lockout Tagout Verification Form as required.

5.13.4 Worker Group Lockout (Contractor)

The Worker responsibilities are as follows:

- Participating and or leading in the JHA with the Permit Receiver;
- Participating in the isolation verification walk down, and the completion and approval of the Isolation Assessment;

- Placing a personal lock and tag on the associated lockbox for work on the isolated system;
- Following the requirements of the PTW and JHA; and
- Stopping all work if the requirements of this Framework are not being followed, or if there is a failure of any of the installed devices.

5.14 Competency

All personnel will receive training appropriate to the roles they are required to fill. Training provided will include an assessment of competency to implement effective isolation. Competency will be assessed in accordance with the Operations Competency Technical Standard.

5.14.1 Person in Charge/Permit Issuer

The Permit Issuer's training for group isolation activities will include the following:

- The requirements of this Framework, and the Blanking and Blinding Framework;
- The requirements on how to complete the Lockout Tagout Isolation Plan Form, Isolation Assessment Form, Lockout Tagout Verification Form and PTW Template;
- The specific types and magnitude of hazardous energy encountered in the workplace; and
- The means of controlling and isolating that energy.

5.14.2 Permit Receiver

The Permit Receiver's training for group isolation activities will include the following:

- The requirements for Lockout Tagout as per applicable regulations for the jurisdiction ;
- The requirements on how to conduct a JHA;
- The requirements on Isolation verification walk down, and completing the Isolation Verification Form;
- The requirements for the specific work activity to be performed;
- The specific types and magnitude of hazardous energy encountered in the workplace; and
- The means of controlling and isolating that energy.

5.14.3 Worker

The Worker's training for single isolation activities will include the following:

- The requirements for lockout tagout as per applicable regulations for the jurisdiction;
- The requirements on how to complete the JHA Form;
- The requirements for the specific work activity to be performed;
- The specific types and magnitude of hazardous energy encountered in the workplace; and

- The means of controlling and isolating that energy.

5.15 Performance Measurement Criteria

5.15.1 Assurance Activities

The Lockout Tagout Verification Form is used as a self-assessment tool for managing conformance to this framework in accordance with the HSSE Assurance Technical Standard.

5.15.2 Performance Indicators

Performance will be managed in accordance with the HSSE Performance Management Framework.

Assessment Category	**Required performance indicators**
Planning and execution	• Monthly total site number and percentage of JHA Form and PTW Form reviewed for quality; and • Monthly total site number and percentage of quality improvement opportunities identified from JHA Form and PTW Form quality reviews.