

A large industrial refinery or chemical plant at sunset. The sky is a mix of orange, yellow, and blue. Several tall distillation columns and a complex network of pipes and platforms are visible. The scene is illuminated by the warm light of the setting sun, with some artificial lights glowing on the structures.

IPS

Industrial Performance Services

ITCS

Industrial Tubular Catalyst Services

CONTROL OF HAZARDOUS ENERGY PROCEDURE

V:2023.1

Control of Hazardous Energy Procedure

January 2023

PURPOSE

This procedure establishes the minimum requirements for the lockout or tagout of energy isolating devices. It should be used to ensure that servicing, maintenance and cleaning of any machinery or equipment is isolated from all potentially hazardous residual or accumulated energy, where the unexpected energizing, startup or release of stored energy could cause injury to employees performing such tasks.

SCOPE

IPS★ITCS recognizes the need for its employees to be protected from the inadvertent energizing of equipment. IPS★ITCS does hereby establish the following Lockout/Tagout Procedure.

IPS★ITCS often works in facilities that are under the direct control of the client. In these cases, IPS★ITCS shall adopt the client's Lockout/Tagout procedure. In the event no procedure is in place, IPS★ITCS' Lock-out/Tag-out Procedure shall be implemented.

DEFINITIONS

1. Affected Employee - An employee whose job requires them to operate or use a machine or equipment on which servicing, or maintenance is being performed under lockout or tagout, or whose job requires them to work in an area in which such servicing or maintenance is being performed.
2. Authorized Employee - A qualified person to whom the authority and responsibility has been given by the subcontractor, to lock out or tag out machines or equipment to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance on said equipment or machine.
3. Energized - Connected to an energy source or containing residual or stored energy (mechanical, electrical, hydraulic, steam, tension, gravity, etc.), which has not been isolated.
4. Energy Isolating Device - A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker, a disconnected switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and in addition, no pole can be operated independently; a line valve; a block or any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices, which are not energy isolating devices.
5. Energy Source - Any electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy sources that can cause injury.

6. Hot Tap - A procedure used to repair, maintenance, and service activities that involve welding a piece of equipment (pipelines, valves, or tanks) under pressure, to install connections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam, and petrochemical distribution systems.
7. Lockout Device - A device that utilizes a positive means such as a designated singled keyed pad lock type, to hold an energy isolation device in a safe position and prevent the energizing of a machine or equipment. Included are blank flanges and bolted slip blinds.
8. Lockout / Tagout - The placement of a lock and / or tag on the energy isolating device in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.
9. Qualified Person - A person who can demonstrate by experience or training the ability to recognize potentially hazardous energy and its potential impact on workplace conditions and has the knowledge to implement adequate methods and means for control and isolation of such energy.

RESPONSIBILITY

IPS★ITCS employees shall be instructed in the safety significance of the Lockout / Tagout procedures, as well as how to use those procedures, by the Project Manager. Only authorized employees may lockout or tagout machines or equipment. All authorized employees shall be identified on each ***HSE.FOR.Hazardous Energy Control Form.2022***.

1. Affected employees and any other employees whose work operations are or may be in the affected area will be instructed in the purpose and use of the lockout / tagout procedures by the project manager.
2. Affected employees or their job titles shall be identified on each ***HSE.FOR.Hazardous Energy Control Form.2022***. The authorized employees will notify them whenever a lockout or tagout will occur, as well as when the equipment is being placed back in service.
3. It is the responsibility of each authorized employee to provide all Hazardous Energy Control Procedure Forms to the Project Manager.
4. The company HSEQT Manager shall do an annual inspection of the lockout/tagout program to ensure that procedures and requirements are being followed.

PREPARATION FOR LOCKOUT OR TAGOUT

A survey shall be made to locate and identify all energy sources to be certain which switch, valve, or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical or others) may be involved. Findings of this survey will be documented on the Hazardous Energy Control Procedure Form, for the equipment or machine to be de-energized.

Identify all affected employees by name or their job title that may be involved in the impending lockout / tagout.

LOCKOUT OR TAGOUT SYSTEM PROCEDURE

1. Notify all affected employees that a lockout / tagout system is going to be utilized and the reason thereof. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards thereof.
2. Shut down the equipment by normal stopping procedures. Operate the equipment to ensure equipment is off.
3. Operate the switch, valve, or other energy isolating device so that each energy source (electrical, mechanical, hydraulic, etc.) is disconnected or isolated from the equipment at the main disconnect. Stored energy such as that in capacitors, springs, elevated machine members, rotating fly wheels, hydraulic systems, air, gas steam or water pressure; must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding, etc.
4. The authorized person shall then lockout and tagout the energy isolating device with a designated single keyed pad lock and a “DANGER - DO NOT OPERATE” tag. The tag shall contain the name of the authorized person and reason for isolation; a multi hasp device shall be affixed to the pad lock.
5. After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, the authorized person shall try to activate/start the equipment or machine at the remote push start button or other normal operating control to make certain equipment will not operate. CAUTION - return operating control(s) to “neutral” or “off” position after the test.
6. Each employee performing maintenance, servicing or cleaning activities on the de-energized machine or equipment shall then place their single keyed designated pad lock and tag (stating “DANGER - DO NOT OPERATE” with their name, date and reason) on the multi lock hasp.
7. Each craft / maintenance employee will physically try to activate the equipment at the remote start control prior to performing work activities.
8. Periodic inspections of the lockout/tagout system shall be completed by the on-site safety supervisor. A record of when the inspection was done should be written in the Daily Job Log.

GROUP LOCK OUT

1. In instances when numerous employees will be performing work activities on a piece of equipment and the magnitude of locks would be impractical, a multi group lock may be utilized.
2. After isolation of the equipment by the authorized person, the Foreman in charge of the work task shall place their lock and tag on the multi hasp lockout device.
3. The Foreman shall then place the key in a designated lock box or cabinet.
4. Each employee performing work activities shall place their lock and tag to a multi hasp locking device to the lock box / cabinet controlling access to the Foreman / Supervisor's key.

RESTORING EQUIPMENT TO SERVICE

1. After servicing and / or maintenance is complete, all tools have been removed, guards have been reinstalled and equipment is ready for normal production operation.
2. Each craftsman / service personnel shall remove their lock and tag.

NO EMPLOYEE WILL BE ALLOWED TO REMOVE ANOTHER EMPLOYEES LOCK OR TAG

3. The Foreman / Supervisor shall inspect the machine or equipment to ensure all activities are complete and equipment is ready for service prior to removing their pad lock and tag.
4. The authorized employee shall check the area to ensure that no employee is exposed, prior to removing their lockout / tagout device and restoring energy to the machine / equipment.

EXTENDED WORK ACTIVITIES

This process will involve more than a single work shift

1. The authorized employees locking device will stay affixed to the control / energy sources until job task is complete and system is to be re-energized.
2. Each craftsman / service person of the off going shift shall remove their pad lock and tag, as the oncoming shift at the beginning of the next working day reapplies their locks and tags.

EXTENUATING REMOVAL OF LOCKS

1. Any employee transferred to another task / assignment and no longer working with / on the equipment / machine involved shall remove his lock and tag upon transfer.
2. In a case where an employee has inadvertently left their lock and tag in place and work activities are complete or key is lost.
3. The Foreman / Supervisor shall make every attempt to locate the individual or key for removal.
4. If the employee / key cannot be located; the Project Manager shall assure equipment is ready to be placed in service.
5. The Project Manager shall be present at physical removal of said lock.

TRAINING

1. All employees of IPS★ITCS shall be given training as to the requirements of this procedure by the Project Manager.
2. Authorized and affected employees will be trained in the following:
 - a. Review of the requirements of 1910.147, Control of Hazardous Energy
 - b. Types and magnitudes of energy sources
 - c. Limitations of tagout
 - d. Lockout / Tagout procedures of this program
 - e. Procedures for removing locks and tags
 - f. Procedures for restoring energy.
3. Authorized employees will be given training prior to any initial involvement in lockout / tagout procedures.
4. Affected employees will be given training at the time of hiring.
5. Retraining will be given whenever there is a change in job assignment, a change in equipment or process that would create a new hazard or whenever a change would occur in this procedure.
6. A list of employees trained, and dates of their training will be maintained by each contractor, and a copy forwarded to the Project Safety Manager.

Revision History

Rev	Rev Date	Rev By	Approved By	Description
1.0	1.3.2022	Shayne Torrans	Shayne Torrans	Initial Procedure Document
1.1	11.23.2022	Shayne Torrans	Shayne Torrans	Format Revision

Approvals:

Procedure Owner

Print Name

Date

Signature

Competency Assessment

No.	Questionnaire	C/NYC
Q1		
A1		
Q2		
A2		
Q3		
A3		
Q4		
A4		
Q5		
A5		

Enclosed Attachments	
Risk Assessment	<input checked="" type="checkbox"/>
Environmental Aspect and Impact	<input checked="" type="checkbox"/>
Training and Competency	<input checked="" type="checkbox"/>
Measure and Evaluation Tools	<input checked="" type="checkbox"/>

Competency Checklist

To be filled out by Trainer and signed by Employee, Assessor and Supervisor before being returned to the HSEQT Manager for recording purposes.

Procedure	Competency	Date	Competent YES / NO	Employee Signature

(Please tick appropriate box)

This employee is competent in performing the job.

This employee has not attained the competency level.

*

* *If the employee has not attained all competency levels, the General Manager must assess the action to be taken, provide an extension of training or alternative action as listed below.*

Alternate action to be taken: _____

Signed By	Employee:	_____	Date:	_____
	Trainer:	_____	Date:	_____
	Assessor:	_____	Date:	_____
	Regional Manager:	_____	Date:	_____

Environmental Aspects and Impacts

Identified Environmental Aspects and Impacts

The following table is a summary of the likely environmental aspects and impacts that may be identified during site inspections. The significance of each impact needs to be assessed using the Risk Assessment Model.

Activity	Aspect	Impact
Purchasing & Administrative Work	Consumption of goods	Conservation of natural resources
	Consumption of energy (eg. Electrical equipment and facilities)	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of waste (eg. Paper)	Consumption of space for waste disposal; Habitat loss
Climate Control	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Habitat loss
	Generation of noise	Disturbance to community; Habitat loss
Cleaning of – offices / vehicles	Storage, use and release of chemicals	Contamination of air, water or soil; Risk to human health
Transport (Fleet vehicles / staff travel)	Consumption of energy	Release of greenhouse gases and atmospheric pollution; Consumption of natural resources; Loss of habitat at all stages of generation; Light pollution
	Consumption of goods (eg. Oil)	Consumption of natural resources; Generation of waste; Habitat loss; Biodiversity impacts
	Generation of waste (eg. Oil)	Consumption of space for waste disposal; Potential contamination of water or soil; Habitat loss
	Exhaust emission	Release of greenhouse gases and atmospheric pollution
	Use of dangerous goods (eg. Batteries)	Potential contamination of air, water or soil; Risk to human health
	Generation of noise	Disturbance to community; Habitat degradation
Operations		

Sample only.
To be filled in

Risk Assessment



Risk Assessment // insert name here

<p>Step No: Logical sequence</p>	<p>Sequence of Basic Job Steps documented in the Procedure, Work Instruction and project plans. Break down Job into steps.</p> <p>Each step should be logical and accomplish a major task.</p>	<p>Potential Safety & Environmental Hazards/Impacts at the site of the Job</p> <p>Identify the actual and potential health and safety hazards and the environmental impacts associated with each step of the job.</p>	<p>Risk Rating</p> <p>Refer to the risk matrix or HSEQT.PRO. Risk Mgt</p>	<p>Recommended Corrective Action or Procedure</p> <p><i>Determine the corrective actions necessary to reduce the risk to as low as reasonably practical (ALARP) refer to HSEQ.PRO.Risk Mgt. The risk must be reduced or controlled to ALARP before work commences.</i></p> <p>Document who is responsible for implementing the controls to manage each hazard identified.</p>	<p>Risk Rating refer to the risk matrix or HSEQT.PRO.Risk Mgt</p>
1.					
2.					
3.					
4.					
5.					

Audit



Process: insert// Procedure: Insert //		Date:	Audited by:	
		Location of Audit:	Area Mgr/Supervisor:	
Item	Question	Evidence Sited	Comments	Conformance Score 0,3,5
1.				
2.				
3.				
4.				
5.				
6.				
7.				
AUDITOR'S SIGNATURE:		CONFORMANCE SCORE: / 25		0 – Non-Conformance 3 – Continuous Improvement Opportunity 5 – Total Conformance
SAFETY REP'S SIGNATURE:		CONFORMANCE %:		