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| **Lockout/Tagout Program** | **Revision Date**: 10-2019 |
| **Purpose**: To aid in preventing injury or death to employees from the inadvertent release of hazardous energy while performing service, cleaning, adjusting, clearing a jam, making repairs or setting up the equipment. | **Topics Covered*** Responsibility of Staff
* Definitions
* Program Elements
* Sample Evaluation Reports
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Examples of hazardous energy can include electrical, pneumatic, mechanical, chemical, and thermal. The objective of the program is to provide procedures which ensure a zero energy state while equipment is being serviced, cleaned, adjusted, cleared of jams, repaired or setting up.

This will be accomplished by requiring that certain precautions be taken before servicing or repairing equipment takes place. These precautions include shutting "off" and "locking out" the electrical power source of the equipment. On pneumatic and hydraulic systems, the pressure must be released and lines either disconnected or double blocked (with bleed) or blinded, and locked out, if possible. In addition, a DANGER, "Do Not Use", "Do Not Open" or "Do Not Operate" tag is to be placed at the power sources and valves of all equipment being serviced.

These procedures will be applied whenever:

 1. An employee needs to remove or bypass a guard in order to perform work; or,

 2. An employee is required to place any part of their body in the point of operation or an associated danger zone exists during the machines operating cycle.

**RESPONSIBILITY:**

It will be be the responsibility of [INSERT COMPANY POSITION] to oversee and ensure the implementation and administration of Lockout/Tagout Procedures. [SAME POSITION] will survey the facility to determine which machines will require procedures for shutting down and securing this equipment prior to maintenance. Each **DEPARTMENT SUPERVISOR** will ensure that Authorized and Affected employees within the department receive training appropriate for their role within the program. Department Supervisors are also responsible for periodically verifying procedures are being followed.

**Authorized Employees:** All employees who will perform work on machine will receive training on the methods they will use to lock out the hazardous energy associated with the machine they will work on. The training will also include the recognition of hazardous energy sources, the type and magnitude of the energy sources for the machines which will be worked on.

**Affected Employees** (All Other Employees in the area of machine) will receive general training about the procedure, as well as the prohibition of attempting to restart or re-energize machines which have been locked or tagged out.

Violations of this safety procedure can result in serious injury or death of the offender and others. Any employees determined to have violated these procedures will be subject to disciplinary action up to and including termination.

**LOCKOUT PROCEDURE (GENERAL)**

***(NOTE TO CLIENT: MACHINE SPECIFIC PROCEDURES FOR SHUT DOWN MUST BE DEVELOPED. MACHINES THAT ARE SIMILAR IN PROCEDURES NEED NOT HAVE SEPARATE PROCEDURES)***

 1. Prior to the start of work, the sources of hazardous energy for the machine or system to be worked on should have been identified. The Authorized Employee performing the work will have already received the training as per “Responsibility” and “Training” sections.

 2. Orderly shutdown of the machine or system is performed. Machine specific procedures for shutdown are used.

 3. Locks or other positive means are applied to secure the hazardous energy source against accidental activation. Locks MUST only be able to removed by the person who applied them (i.e. individually keyed). In instancres where more than one person will work on equipment (such as multiple trades), they must have their own locks.

 4. All devices used to control energy to the equipment (which were previously identified) will be placed in the “off” or “safe” position. *If Tagout devices are used (see below under Tagout) they will be placed in the same position a locking device would be. They must clearly indicate that the equipment is to remain “off”.*

 5. All potentially stored or residual energy should be relieved, dispersed, disconnected or otherwise rendered safe.

 6. Prior to starting any work, the Authorized Employee should verify that all residual energy was completely dispersed.

 7. When maintenance work is completed, the Authorized Employee should verify that equipment is safe to operate, all tools and maintenance materials are removed, all controls are in their neutral operating positions, and all guards are in place. All employees should be out of the danger zone and the Authorized Employee should notify all Affected Employees that the Lockout Device has been removed. The supervisor should verify the equipment is safe to operate.

SPECIAL CIRCUMSTANCES: In some cases, it may be necessary to re-energize equipment for a short period of time. Steps 2-6 should be repeated by the Authorized Employee when the equipment is de-activated again.

**TRAINING**

a. Initial training will take place by a qualified trainer prior to any maintenance work which requires Lockout procedures to be utlized.

b. **Authorized Employees** will receive training on the methods they will use to lock out the hazardous energy associated with the machine they will work on. The training will also include the recognition of hazardous energy sources, the type and magnitude of the energy sources for the machines which will be worked on.

c. **Affected Employees** (All Other Employees in the area of machine) will receive general training about the procedure, as well as the prohibition of attempting to restart or re-energize machines which have been locked or tagged out.

d. Lockout/Tagout procedural refresher training will be performed at least annually. Retraining should also occur when there is a change in machinery or work assignments which renders the previous training obsolete. Retraining should also be conducted when deviation or other inadequate adherence is observed.

e. Certification of training will be maintained which includes the date and employee’s name.

**TAGS**

 a. Tags will only be used when positive means (e.g. Locks) of isolating the hazardous energy are not possible or feasible. Justification for the use of Tags will be documented.

 b. If it is determined that a Tag is to be used for a particular procedure, they will be legible and able to be understood by all Authorized and Affected employees. Non-legible tags will be reported immediately to [INSERT COMPANY POSITION]. The tag will also be able withstand the environments they are subjected to.

 c. Tags will be affixed at or as close as possible to the location where a lock would be applied, and will be readily to anyone attempting to activate the machinery or equipment.

d. Tags will never be removed without the knowledge and approval of the Authorized employee who applied it.

e. Tags may also include either the words **"DO NOT USE"** or **"DO NOT OPEN"** depending on the operations at hand. Tags must be securely attached, dated, and signed by the person performing the work.

 f. As with Locks, only the person who applied the tag can remove it. No piece of equipment or device should be operated when there is a tag or lock attached, regardless of what the circum­stances may be.

 **NON-COMPANY PERSONNEL (e.g. sub-contractors)**

 a. Whenever sub-contractors who are covered by the scope of this program are utilized, [INSERT COMPANY NAME] and the sub-contractor will inform each other of their respective Lockout/Tagout program requirements.

 b. [INSERT COMPANY NAME] will ensure its employees comply with the requirements of the sub-contractor’s program.

**SHIFT OR PERSONNEL CHANGES**

If shift or personnel changes during the Lockout/Tagout effective period must occur, specific procedures will be developed to ensure continuity of the Lockout/Tagout protection. The procedure will take into account necessary communication between incoming and outgoing employees.

**ANNUAL REVIEW**

Lockout and Tagout procedures will be reviewed at least annually by [INSERT COMPANY POSITION] to ensure they are adequate for controlling hazardous energy.

**EXCEPTIONS**

a. Cord and Plug powered equipment can be exempt from this program’s requirements provided the cord and plug is the sole means of powering on equipment and it remains under the control of the Authorized employee who is performing the work. The plug is under exclusive control only if it is physically in the possession of the employee, or in arm's reach and in line of sight of the employee. If this cannot be accomplished, a locking device must be applied to the plug on the machine's power cord.

b. Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, if they are routine, repetitive, and integral to the use of the equipment for production, provided that this work is performed using alternative measures which provide effective protection in accordance with company operational procedures.



**APPENDIX 1**

**PERIODIC INSPECTION**

A periodic inspection of the energy control procedures will be conducted at least annually by the Facility Manager or his/her designee. The purpose of the periodic inspection is to correct any deviations or inadequacies observed. The periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected. All periodic inspection will be documented. The documentation shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

 Date of Machine or Employees Included

 Inspection Equipment in Inspection Inspector

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**APPENDIX 2**

**AUTHORIZED EMPLOYEES**

The following list of employees have been trained in the purpose and function of the energy control program and possess the necessary knowledge and skills required for the safe application, usage, and removal of energy controls.

 Date of

 Authorization Employee Name Employee Signature

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**Name of Trainer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature of Trainer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**APPENDIX 3**

**LOCKOUT/TAGOUT PROCEDURE CHECKLIST**

All questions must be answered; if the question is non-applicable then write N/A in blank.

Equipment:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Location:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ENERGY SOURCES**

1. Electrical power (battery backup?) yes/no

 Does this installation have more than one power source (i.e. 120v, 440 volt)? yes/no

 Does this installation have a remote starting location? yes/no

If yes, provide power panel and breaker locations: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Does it have a lockout device? yes/no

Describe the methods to lockout or tagout electrical controls

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 Battery location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Battery disconnect location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Starting or storage capacitors located at the installation? yes/no

If yes, describe the method to safely discharge electrical energy to a ground source \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Mechanical Power? yes/no

 a. Engine driven yes/no

 If yes provide switch or key location \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Is lockout device installed? yes/no

 If no, what method is used to prevent operation? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. Spring loaded? yes/no

 If yes, are there methods to prevent spring activation? yes/no

 If no, how can spring tension be safely released or contained? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Counter Weight(s) yes/no

 If yes, does it have a method of preventing movement? yes/no

 If yes, can it be locked? yes/no

 If no, describe the method used to secure the counter weight. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Flywheel? yes/no

 If yes, does it have a method of preventing movement? yes/no

 If yes, can it be locked? yes/no

 If no, describe the method used to secure the flywheel. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Hydraulic Power? yes/no

 If yes, location of main control/shut off valve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Can control/shut off valve be locked in off position? yes/no

 If no, location of main or auxiliary manual shutoff valve. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Does manual shutoff valve have lockout device? yes/no

 If no, what is needed to lock the valve closed? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Is there a bleed or drain valve to reduce pressure to zero?

 If no, what will be required to bleed off pressure? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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6. Pneumatic Energy? yes/no

 If yes, location of main control/shut off valve.

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 Can control/shut off valve be locked in "off" position? yes/no

 If no, location of main or auxiliary manual shutoff valve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Does manual shutoff valve have lockout device? yes/no

 If no, what is needed to lock the valve closed?

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 Is there a bleed or drain valve to reduce pressure to zero?

 If no, what will be required to bleed off pressure?

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7. Chemical System? yes/no

 If yes, location of main control/shut off valve

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 Can control/shut off valve be locked in "off"/closed position? yes/no

 If no, location of main or auxiliary manual shutoff valve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Does manual shutoff valve have lockout device? yes/no

 If no, what is needed to lock the valve closed?

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 Is there a bleed or drain valve to safely reduce system pressure and drain system of chemical? yes/no

 If no, how can system be drained and neutralized? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Thermal Energy? yes/no

 If yes, location of main control/shut off valve

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 Can control/shut off valve be locked in "off"/closed position? yes/no

 If no, location of main or auxiliary manual shutoff valve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Does manual shutoff valve have lockout device? yes/no

 If no, what is needed to lock the valve closed?

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 Is there a bleed or drain valve to safely reduce system pressure and temperature and drain system? yes/no

 If no, describe how can system pressure and temperature be reduced and drained \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 What personal protective clothing or equipment is needed for this equipment? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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9. Special Precautions not listed above..(i.e., fire hazards, chemical reactions required cool down periods, etc.):

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Recommendations or Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This Tribal First Risk Control Consulting safety program and best practices suggested herein should not be regarded as legal advice. Readers should pursue legal counsel or contact their insurance providers to gain more exhaustive advice. For more information on this topic, please contact Tribal First Risk Control Consulting at (888) 737-4752 or riskcontrol@tribalfirst.com.