Lockout / Tagout Program
(Control of Hazardous Energy)

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FORWARD

The University of Northern Iowa, Lockout/Tagout Program is a guide intended to establish and maintain uniform compliance with Occupational Safety and Health Administration, 29 CFR, General Industry, 1910.147, and endorse the safety of personnel required to work on or around equipment or powered machinery.

The University Environmental Health and Safety Office is responsible for oversight of compliance with local, state, and federal safety and health regulations applicable to the University. The University Lockout/Tagout Program establishes minimum policies and procedures required for work on or around equipment or powered machinery.

University departments and contractors must comply with applicable local, state, and federal regulations including university policies and procedures.

University departments and contractors may implement alternative lockout/tagout procedures considered equal to or more stringent than the minimum policies and procedures established by the University Lockout/Tagout Program.
I. PURPOSE

The University of Northern Iowa, Lockout/Tagout program is a written program developed and implemented at the University of Northern Iowa, Cedar Falls, Iowa to ensure the safety of employees in the work place. The program establishes minimum requirements, polices, procedures, and practices for employees working with equipment or powered machinery with a potential for the unexpected start-up, or release of stored/residual hazardous energy. The development and implementation of a Lockout/Tagout program and procedures at the University of Northern Iowa establishes compliance with regulations in 29 CFR, 1910.147, Occupational Safety and Health Administration standard for General Industry.

The University of Northern Iowa, Power Plant, a steam and electrical generation plant, will implement lockout/tagout procedures for the control of hazardous energy sources exclusive to this facility and utilized for the purpose of generation, transmission and distribution of steam and electrical power. The Power Plant's compliance with lockout/tagout procedures identified in 29 CFR, 1910.269, General Industry, Electrical Power Generation, Transmission, and Distribution will also establishes compliance with 29 CFR, 1910.147, Occupational Safety and Health Administration standard for General Industry.

The University of Northern Iowa performs service and maintenance on machines and equipment throughout the campus. The Lockout/Tagout Program consisting of energy control procedures, employee training and periodic inspections/evaluation enhances employee safety and protection from an unexpected energization or release of stored energy when servicing or maintaining machines and equipment.

II. DEFINITIONS

AFFECTED EMPLOYEE

An employee whose job assignment requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job assignment requires him/her to work in an area in which such servicing or maintenance is being performed.

AUTHORIZED EMPLOYEE

A person who locks or implements a tagout procedure on machines or equipment to perform servicing or maintenance on the machine or equipment. An affected employee becomes an authorized employee when the employee's duties include performing service or maintenance covered by this written lockout/tagout program.
BLANKING/BLINDING

The absolute closure of a pipe, line, or duct by fastening a solid plate that completely covers or blocks the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.

CAPABLE OF BEING LOCKED OUT

An energy-isolating device will be considered to be capable of being locked out if it is designed with a hasp or other means of attachment or integral part to which, or through which, a lock can be affixed, or if it has a locking mechanism built into it.

CORD AND PLUG ELECTRICAL EQUIPMENT

Equipment that can be isolated by unplugging the equipment from the energy source and the plug remaining under the exclusive control of the employee performing the servicing or maintenance work.

DOUBLE BLOCK AND BLEED

The closure of a pipe, line, or duct by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the closed valves.

ENERGIZED

A machine or equipment that is connected to an energy source or containing stored or residual energy.

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 disconnect 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; and any similar device used to block or isolate energy. Push buttons, selector switches, and other control circuit type devices are not energy isolating devices.

ENERGY SOURCE

Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
SAFETY LOCKOUT PROCEDURE

A written document containing information regarding University procedures for control of hazardous energy such as the unexpected energization, start-up, or release of stored energy and ensuring machines or equipment are isolated and inoperative prior to performing service or maintenance.

UNIVERSITY LOCKOUT/TAGOUT PROGRAM

A University safety program established to prevent the unexpected energization or release of stored energy in machines or equipment consisting of energy control procedures, employee training, and periodic inspections.

HOT TAP

A procedure used in the repair, maintenance and services activities which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure in order 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 systems.

LOCKOUT

The placement of a lockout device on an energy isolating device, in accordance with established procedure, ensuring the energy isolating device and equipment being controlled cannot be operated until the lockout device has been removed.

LOCKOUT DEVICE

A device that utilizes a positive means such as a lock, either key or combination, to hold an energy isolating device in a safe position and prevent the energizing of a machine or equipment.

MINOR SERVICE TASK

Servicing task which are routine, repetitive, and minor typically associated with performing preventive maintenance such as but not limited to lubrication, HVAC test and inspections or adjustments, and minor troubleshooting of machines or equipment.

PRIMARY AUTHORIZED EMPLOYEE

An authorized employee who exercises overall responsibility for compliance with the University/departmental lockout/tagout program/procedures during a group lockout/tagout event.
SERVICING AND/OR MAINTENANCE

Workplace activities such as, but not limited to, construction, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment where an employee may be exposed to the UNEXPECTED energization or start up of the equipment or release of hazardous energy.

- Maintenance is the act of maintaining
- Maintain is to keep in repair
- Servicing is to repair/provide maintenance
- Modify is to make basic/fundamental changes

TAGOUT

The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may NOT be operated until the tagout device has been properly removed and the equipment restored to safe operation.

TAGOUT DEVICE

A prominent warning device, such as a tag and means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled, may not be operated until the tagout device is removed.

GROUP LOCKOUT/TAGOUT

Procedures for multi-craft, department, crew, or other groups to perform a group lockout/tagout procedure when completing multi-craft or crew service and maintenance work assignments with the potential for unexpected energization or release of stored hazardous energy.

III. EXCLUSIONS

NOTE: When an employee is required to by-pass or remove a safety device and when an employee is required to place any part of their body into an area of the machine or equipment associated with a danger zone, compliance with the University Lockout/Tagout Program is mandatory.

Compliance with the University Lockout/Tagout Program is not applicable when employee work assignment includes the following:

1. Normal activities which are repetitive, routine, or involve minor adjustments such as lubricating, cleaning can be completed without compliance with
lockout/tagout provided the safeguards identified in 1910 SUBPART O, MACHINE GUARDING are utilized.

2. Work on cord and plug-connected electric equipment for which exposure to the hazards of unexpected energization or start-up of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the exclusive control of the employee performing the servicing or maintenance.

3. Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water, or petroleum products when they are performed on pressurized pipelines, provided that the employer demonstrates that:
   • Continuity of service is essential;
   • Shutdown of the system is impractical; and
   • Documented procedures are followed, and special equipment is used that will provide proven, effective protection for employees.

When other 1910, General Industry standards require the use of lockout/tagout, the requirements identified in that regulation will be utilized and supplemented by the procedures and training requirements of the University Lockout/Tagout Program. The following standards are applicable and incorporate lockout or tagout requirements:

1910.178, Powered Industrial Trucks
1910.179, Overhead/Gantry Cranes
1910.213, Woodworking Machinery
1910.217, Mechanical Power Presses
1910.252, Welding, Cutting and Brazing
1910.263, Bakery Equipment
1910.269, Electrical Power Generation, Distribution
1910.305, Electrical

IV. ADMINISTRATIVE RESPONSIBILITIES

EMPLOYER

The responsibility for oversight of the University Lockout/Tagout Program is the University Safety Officer or authorized designated representative.

The University of Northern Iowa is responsible for assuring the safety and health of employees and their compliance with local, state, and federal regulations applicable to the workplace. The University Safety Officer or designated representative provides oversight and management of the University Lockout/Tagout Program for the purpose of providing a consistent, efficient and effective lockout/tagout program.
EMPLOYEE

Employees are responsible for observing all appropriate health and safety work practices and procedures described in the University's Lockout/Tagout Program. Employees are encouraged to promote positive attitudes regarding safety in the workplace and to cooperate/contribute to the implementation of all applicable, mandated, state and federal health and safety regulations. Employee failure to comply with established work practices and procedures applicable to health and safety and prescribed by university written health and safety programs will be addressed with the standard university disciplinary procedures.

V. HAZARD ANALYSIS

University departments assigning employees to service and maintenance tasks on machines or equipment with the potential for an unexpected energization or release of stored energy will be required to complete a hazard analysis. The purpose of the hazard analysis will be to identify the hazardous energy sources associated with repair, maintenance, cleaning, or the operation of machines/equipment applicable to the university's safety lockout/tagout procedures. A survey of university facilities will be completed by departments to determine the location of hazardous energy sources such as but not limited to the following:

- Electricity
- Pneumatic
- Hydraulic
- Natural gas
- Gasoline/diesel fuel
- Mechanical
- Springs
- Falling
- Water pressure
- Chemical
- Steam
- Thermal
- Nuclear

University departments will document the results of the hazardous energy analysis and be responsible for the maintenance of the documentation. The documentation must include but not be limited to the following elements:

- Machine/equipment name or unique number
- Type of power/energy sources
Location of the machine/equipment
- Required lockout or tagout device
- Requirement for multiple/single source lockout/tagout
- Type of lockout to be used
- Procedures to prevent accidental start-up
- List of employees authorized to install lockout/tagout
- List of affected employees
- Notification procedures for affected employees

Documentation must include procedures/steps necessary for restoring equipment to service after work requiring lockout/tagout is completed. Examples IA, IB, and IC show suggested formats for completing and documenting the hazardous energy lockout/tagout procedure. Procedures must be forwarded to the University Safety Office for review after completion.

VI. LOCKOUT/TAGOUT CONTROL

The University will provide and maintain all lockout/tagout devices determined to be appropriate for the protection of employees. Lockout is the preferred method of isolating machines or equipment from energy sources.

LOCKOUT
Locking devices consisting of but not limited to locks, chains, wedges, key blocks, self-locking fasteners (cable-ties), lockable electrical breaker devices, valve wheel covers, and blank or solid flanges are considered to be appropriate for isolating, securing or blocking of machines or equipment from energy sources. The lockout device must be identifiable/unique and shall be used only for the purpose of isolating energy sources. The lockout device must be durable and capable of withstanding the environment to which it will be exposed for the duration of the lockout event. The lockout device must be standardized to at least one of the following criteria; color, shape, size. Lockout devices must be substantial enough to protect the employee from potential hazards and to prevent removal without the use of excessive force or unusual techniques. Lockout devices must indicate and identify the employee applying the device. Individual departments will be responsible for maintaining an adequate inventory of new or replacement lockout devices, properly organized and accessible to employees.

Only employees identified as authorized and properly trained will be permitted to affix a lockout device to an energy source. Removal of lockout devices by any employee other than the installer is prohibited unless covered by the special provisions of the lockout program and will be considered a violation of lockout procedures addressed with university disciplinary procedures.

TAGOUT
Tagout procedures and devices will ONLY be utilized when/if the energy source will NOT accept a lockout device. If feasible, equipment should be
retrofitted to accept lockout devices. If not feasible, whenever existing machines or equipment are scheduled to be replaced, renovated, modified or whenever new machines or equipment will be installed, energy isolating devices for machines and equipment will be designed to accept a lockout device.

**NOTE:** When tagout procedures are utilized additional training and instructions regarding the limitations of the tagout procedures must be completed. Tagout procedures are considered to be a warning device and provide limited or no physical restraint.

Tagout devices must be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited. When tagout devices cannot be affixed directly to the energy isolating device, in the position where a lockout device would normally be attached, the tagout will be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device. Tags must be legible and employees whose work is affected or may be affected by the tagout procedure must be informed and understand the tagout procedures. Tags and the means of attachment must be capable of withstanding the environmental conditions for the duration of the tagout event and shall be securely attached to prevent an inadvertent or accidental detachment during use. Tagout devices will be provided and maintained by the department with responsibilities for tagout procedures. An adequate inventory of new or replacement tagout devices will be maintained and accessible to authorized employees.

Tagout devices must identify/warn employees of the potential danger/hazard associated with the tagout event and display information such as; "DO NOT OPEN", "DO NOT START", "DO NOT CLOSE", "DO NOT ENERGIZE", "DO NOT OPERATE". Tagout devices must indicate the name/date the authorized employee applied the device. Properly trained and authorized employees will be the only employees permitted to affix a tagout device to a potential hazardous energy source. Tagout devices must be standardized for color, shape, size, print and format. Employees must implement additional safety measures such as, but not limited to, removal of valve wheels, removal of an isolating circuit, blocking of control switches, or opening an extra disconnect switch when utilizing the tagout procedure to reduce or limit the inadvertent energization of a hazardous energy source.

Machines/equipment applicable to lockout/tagout procedures must be labeled or appropriately identified to warn employees that the required lockout/tagout procedures must be utilized prior to the performance of service or maintenance.

**NOTE:** Removal of a tagout device by any employee other than the installer
is prohibited unless covered under the special provisions of tagout procedures and considered a violation of the tagout procedures addressed with university disciplinary procedures.

VII. MULTI-EMPLOYER WORK SITES

Whenever outside or contract service personnel are utilized for service or maintenance of University machines or equipment covered by the University Lockout/Tagout program, the outside employer must have a written lockout/tagout program/procedures considered to be equal to or more stringent than the policies and procedures established by the University Lockout / Tagout Program. Alternative lockout/tagout programs/procedures must be approved by the University Safety Officer or designated representative.

VIII. PERIODIC INSPECTION/EVALUATION

Departments/work units implementing the Lockout/Tagout Program will complete an annual periodic inspection/evaluation of the energy control procedures used by the department to ensure the procedures and requirements of the program are effective and properly utilized by authorized employees. The periodic inspection must be performed by an authorized employee other than authorized employee(s) typically assigned to the machine or equipment to be inspected. The deficiencies or deviations from the procedures must be corrected in a timely manner.

The department/work unit must document the date of the inspection, identify the authorized employees who participated in the inspection, identify the employee performing the inspection, identify the machine or equipment inspected. When lockout procedures are reviewed at the annual inspection the inspector must confirm each authorized employee's knowledge, skill and understanding of the lockout procedures to be effective for the protection of employees. When tagout procedures are reviewed during the annual inspection, the inspector must confirm the knowledge, skill, and understanding of each authorized employee and each affected employee to be effective. The department inspection is a demonstration of the procedures and can be implemented through random audits and planned visual observations. Energy control procedures used less frequently than one time per twelve month period require only a review at the time they are utilized.

A designated person within the department/work unit will review all records and documentation at the time of the annual inspection to confirm the records to be accurate and up to date. A summary of the trends, deficiencies, training events, and results of the annual inspection/evaluation will be provided to the University Safety Officer or designated representative.
IX. TRAINING/RETRAINING

The responsibility for completion of training required for compliance with 1910.147, Lockout/Tagout is assigned to the department/work unit implementing lockout/tagout procedures. Lockout/Tagout training must include minimal instructions regarding the University's Lockout/Tagout program, elements of the energy control procedures relevant to the employees duties and work assignments, and the requirements of General Industry standards identified in 1910.147, Occupational Safety and Health Administration standard for General Industry.

The department/work unit must provide employees with training at the time of their initial assignment and retraining when employees believe inadequacies exist, or changes in equipment/procedures occur, and whenever new hazards are introduced. Employee training must recognize the employees involvement and responsibilities with lockout/tagout procedures. Each "authorized" employee must receive training for the recognition/identification of potentially hazardous energy sources, the type and magnitude of the energy in the workplace, and the methods and means necessary for energy isolation and control.

Each "affected" employee must receive instruction for the purpose and use of energy control procedures. "Other" employees whose work assignments are or may be in the area where energy control procedures may be utilized must receive instructions regarding the prohibitions related to attempts to restart or reenergize machines or equipment which are locked or tagged out of service.

When departments/work units utilize the tagout procedures additional training for employees will be completed for the proper use of the tagout devices. The training must ensure the employees understand that tagout procedures are warning devices affixed to energy isolating devices, and do NOT provide the physical restraint provided by a lockout device. When a tag is attached to a potentially hazardous energy source, it can not be removed without the authorization of the authorized installer, should never be by-passed, ignored, or otherwise defeated.

RETRAINING

Authorized and "affected" employees are required to participate in retraining activities whenever there is a change in the employees work assignment, whenever new hazards are introduced with new machines/equipment, whenever the energy control procedures are modified/changed, and whenever deficiencies are identified during the periodic inspections, or when employees identify inadequacies of their knowledge, skill, or understanding.

NOTE: The objective of the University of Northern Iowa's Lockout/Tagout training program is to enhance the knowledge, skill, and understanding of
employees who participate in the control of potentially hazardous energy sources for the protection of all employees in the workplace.

Departments/work units will be responsible for the certification of all training events and maintain a record of all training including the signature of employees participating in the event, date of the event, and a short description of the training given. A copy of all training records should be sent to the University Safety Office.

X. GROUP LOCKOUT/TAGOUT

Group lockout/tagout procedures shall be utilized by individual departments/work units implementing the lockout/tagout procedures when service or maintenance is performed by a crew, craft, department, or other groups consisting of outside personnel on complex machines of equipment. Group lockout/tagout procedures are designed for a specific, unique operation and require attention to ensure the protection of employees when the release from the lockout/tagout event occurs. Unauthorized lockout/tagout employees are not permitted to affix an energy isolating device to an energy source which has been properly assigned to other authorized employees. The department will assign one employee the primary authorized employee responsibility for a number of employees under the group lockout/tagout event. The authorized employee must evaluate/identify the exposure level of individual group members and be responsible for notification of affected employees. Each authorized employee involved with the group lockout/tagout event must affix his/her lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when starting the task and remove the device when the task has been completed.

When special/unique circumstances require a group lockout/tagout procedure to extend beyond a single shift operation the department responsible for the service/maintenance project will ensure the lockout/tagout devices are under the control of a specific/responsible individual on each shift required to participate in the project. The individual responsible for placing lockout/tagout devices of each shift will verify and document all potentially hazardous energy sources have been either eliminated or rendered harmless prior to authorizing the work to begin. All employees performing service or maintenance on the project including the affected employees must be accounted for prior to the full or partial release of equipment from the lockout/tagout event.

When a group lockout/tagout procedure involves multiple energy sources in addition to a large number of employees for an extended period of time and has been determined to be compromising to the safety of participating employees, a single tag with individual employee sign-in and sign-out features can be utilized to achieve an appropriate level of energy control.
XI. SHIFT CHANGE

The department implementing lockout/tagout procedures will ensure the continuity of lockout/tagout procedures which extend beyond a one shift event. An orderly transfer of responsibility and assignment of authorized employees must be implemented at the time of a shift change or the employees involved with the service or maintenance project will be continued or extended for the duration of the event. The transfer of responsibility must include the orderly transfer of lockout/tagout devices to an on-coming, authorized employee.

XII. RELEASE FROM LOCKOUT/TAGOUT

The responsibility for safe and orderly release of a lockout/tagout procedure rest with the authorized employee's ability to exercise caution and adequate knowledge, skill, and understanding of the release procedures. When removing lockout/tagout devices to restore the machines and equipment to normal operation the authorized employee must inspect the work area to ensure all non-essential items such as tools or equipment have been removed to a safe area.

Each lockout/tagout device attached to an energy source must be removed by the authorized employee who applied the device. The authorized employee removing the lockout/tagout device must notify the affected employees of the return to normal operation and ensure all employees have been safely positioned or removed prior to start-up.

Sequence required for safe and orderly release:

1. Inspect the work area for non-essential tools or equipment.
2. Notify the affected employees of return to normal operations.
3. Inspect the area to ensure all employees have been removed to a safe position or removed from the area.
4. Remove the lockout/tagout device.
5. Restart/reenergize machine or equipment.

When the authorized employee who applied the energy isolating device is not available and the determination is made to restore the equipment to normal operation, the device may be removed by a properly trained, designated employee under the authorization and direction of the manager of the department/work unit implementing the lockout/tagout procedure. The manager must confirm the authorized employee who applied the lockout/tagout device is not available or not at work and must make a reasonable effort to contact the authorized employee to inform him/her that the lockout/tagout device has been removed. The minimum requirement will
be to ensure the authorized employee has been informed of the removal of the lockout/tagout device. After every attempt has been made to contact the authorized employee, the lockout/tagout device may be removed only by cutting the device.

**NOTE:** Documentation of this event must be made using the "Exception To Normal Removal of LOTO Devices" form (Exhibit 2). Copies of this form must be kept in department/work unit office with a copy sent to the University Environmental Health and Safety Office.

After removal of the lockout/tagout device, it is imperative that the sequence required for safe and orderly release be followed completely.

**XIII. ADDITIONAL REQUIREMENTS**

When lockout/tagout devices must be temporarily removed from an energy isolating device for the purpose of testing or positioning of machines, equipment or components of the machines or equipment, the following action is required:
- Clear the machine or equipment of tools and material
- Remove all employees involved with the lockout/tagout procedure from the machine or equipment to a safe area
- Remove the lockout/tagout devices as required
- Energize or restore the energy source and proceed with testing/positioning
- Deenergize all systems and reapply energy control measures/devices

The Lockout / Tagout Program is designed to comply with state, and federal regulations applicable to the University of Northern Iowa, Cedar Falls, Iowa. An annual review of the University of Northern Iowa Lockout/Tagout Program shall be completed by the University Environmental Health and Safety Office.
EXHIBIT 1 A

Example of Lockout/Tagout Procedure
Sample Lockout/Tagout Procedure

PROCEDURE:

1. Notify the affected employees that service/maintenance is required and the machine/equipment is scheduled for shut down and will be locked or tagged out of service.

   *(list affected employees and identify how they were notified)*

2. The university authorized employee will review the written lockout/tagout procedure(s) to identify the type and magnitude of the energy and shall have the knowledge and understanding of the methods to control the energy.

   *(list type and magnitude of energy sources, and method used to control)*

3. Shut down the machine/equipment using normal shut down procedures.

   *(list type/location of machine/equipment operating controls)*

4. Obtain required isolating device(s), apply and appropriately secure all sources of energy.

   *(list type and location for energy isolating device application)*

5. Dissipate/restrain/relieve all stored or residual energy.

   *(list stored/residual energy sources and method used to dissipate/restrain/relieve)*
6. Confirm/verify energy sources have been isolated
  *Caution return all operating control(s)
to the off/neutral position

  *(list the method used to confirm/verify
  the isolation of energy sources)*

RESTORING EQUIPMENT TO SERVICE:

1. Check the immediate area to ensure nonessential
   items/material have been removed and the equipment
   components are operationally ready to restart.

2. Check the work area to ensure all employees safely
   positioned or removed from the area.

3. Verify all controls are in the neutral/off position.

4. Remove the lockout/tagout device and reenergize
   the equipment.

5. Notify affected employees that the service or maintenance
   is complete and the equipment is safe for restart.
EXHIBIT 1 B

Example of Lockout/Tagout Procedure
**Safety Lockout Procedure**

**Equipment Description:**

**Equipment Number/Identification:**

**Hazardous Energy Sources / Magnitude (PSI, volts, etc.) / Location**

- Electric  
- Electric  
- Hot Water Supply  
- Hot Water Return  
- Pneumatic  
- Steam Supply  
- Hydraulic  
- Hydraulic  
- Thermal  
- Tension Springs  
- Chemical  
- Misc.  
- Misc.  
- Misc.  

**Number of Locks & Tags of devices needed:**

**Caution Statements:** (Examples, equipment monitored/remote control by energy control call  
Prior to shutting equipment off, allow heat to dissipate, wear proper protective equipment, chemical warnings, etc.)
Procedure Steps

1. Notify affected employees

2. Lockout and Tag

3. Lockout and Tag

4. Lockout and Tag

5. Lockout and Tag

6. Lockout and Tag

7. Lockout and Tag

8. Bleed pressure off

9. Additional steps to take

Test to Verify that zero energy state is in effect

Comments:
EXHIBIT 1 C

Example of Completed Lockout/Tagout form
SAFETY LOCKOUT PROCEDURE

Equipment Description: Radiant Heater

Equipment Number/Identification: Room 133 & 135

Hazardous Energy Sources and Location

1. Pneumatic valve located on fin tube in room 135
2. Hot water supply valve located on fin tube in room 135
3. Hot water return valve located in Northwest corner, on fin tube in room 133

Procedure Steps

1. Notify affected employees

2. Close hot water supply valve in room 135
   Lockout and Tag

3. Close hot water return valve in room 133
   Lockout and Tag

4. Remove air line to pneumatic valve allowing valve to return to normal
   open/close position

5. Bleed pressure off fin tube at air bleeder

TEST TO VERIFY THAT ZERO ENERGY STATE IS IN EFFECT.

CAUTION
ALLOW HEAT TO DISSIPATE FROM FIN TUBE OR WEAR
PROPER PROTECTIVE EQUIPMENT.

RESTORING EQUIPMENT TO SERVICE

1. Check the immediate area to ensure nonessential items/materials have been
   removed and the equipment components are operationally ready to restart.

2. Check the work area to ensure all employees safely positioned or removed from
   the area.

3. Verify all controls are in the neutral/off position

4. Remove the lockout/tagout device and reenergize the equipment

5. Notify affected employees that the service or maintenance is complete and the
   equipment is safe for restart.
EXHIBIT 2
Exception to Normal Removal of LOTO Locks

Each lockout/tagout device shall be removed from each energy isolating device by the employee who applied the device.

When the authorized employee who applied the lockout/tagout device is not available to remove it, that device may be removed under the direction of the employee’s direct supervisor and manager, provided that these specific procedures are followed.

1. Verify that the authorized employee who applied the device is not at the facility:
   - Name of employee______________________________________________
   - Date of Lock Removal___________________________________________
   - Assure authorized employee is not available:
     - Call on radio/pager/university number: yes___ no___
     - Check with Dispatch to check attendance: yes___ no___

2. Make a reasonable effort to contact the authorized employee to inform him/her that his/her lockout/tagout device is being removed.
   - Call employee home: yes___ no___

3. Verify/review LOTO procedures documented in authorized employee’s Logbook, assuring equipment is ready to come back online.
   - yes___ no___

Signatures required before cutting locks/tag with bolt cutter:

Authorized Employee Supervisor/Manager: _________________________________

Physical Plant
Director/Designee: _________________________________________________

4. Ensure that the authorized employee has this knowledge that his/her locks and tags have been removed before he/she resumes work at that facility.
   - yes___ no___

Authorized Employee signature: _________________________________

Authorized Employee Supervisor/Manager: _________________________________

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