Energy Control Program

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Boston University

Plumber's Shop

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October-2000

Energy Control Program
Boston University Plumber's Shop

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SECTION-I

ENERGY CONTROL PROGRAM OVERVIEW

Scope and Purpose

Boston University has established this energy control program for their plumber's group to ensure that hazardous energy sources are isolated and rendered inoperable wherever the unexpected energization, startup, or release of this stored energy could occur and cause injury to these employees. This program is pursuant to 29 CFR 1910.147, Control of Hazardous Energy (lockout/tagout) and is part of the University's comprehensive Energy Control Program covering all applicable trade groups. This program applies whenever service or maintenance is being performed, and there is not a need to have the applicable systems energized. Energy sources must be isolated and locked out whenever:

Servicing and maintaining equipment does not require energy (e.g. troubleshooting);

Energy disconnecting means is located outside;

Energy disconnecting means is accessible to the public;

Multiple trades or other persons who may come in contact with the equipment being serviced;

Energy Control

A common misperception regarding the Control of Hazardous Energy standard is that it is only applicable to the isolation of electrical energy. Instead, the standard is intended to safeguard employees from any form of hazardous energy while they are performing service or maintenance on machines or equipment. The forms of hazardous energy can include thermal, hydraulic, pneumatic and potential, as well as electrical. The most common energy isolating device for the systems serviced and maintained by the plumber's group will be control valves. Additional isolating devices can include circuit breakers and disconnect switches. These isolation devices must be physically locked out to ensure that accidental re-energization does not occur. In most cases this can be accomplished by applying a padlock and chain to an open switch or valve. If a switch or valve is incapable of being locked open due to the design of the isolating device, a tag can be used in conjunction with an alternative control method, such as removal of fuses, valve handles, or by disconnecting circuits.
Section III, Energy Control Procedures have been developed for the systems and equipment serviced and maintained by the plumber's group. These lockout/tagout procedures can only be performed by the authorized employees performing the service or maintenance.

Lockout vs. Tagout

The standard requires that if the energy isolating device of a given machine or piece of equipment is capable of being locked out, locks shall be used unless it can be proved that the use of tags would provide protection at least as effective as locks and would assure "full employee protection".

Equipment serviced by the Boston University plumbers are capable of being locked out. Therefore, whenever energy control procedures are necessary to perform servicing or maintenance, the plumbers are required to use locks not tags on the relevant energy isolating devices. Tags are only permitted as a reminder for those circumstances where the plumber has direct sight of the control valve or other energy isolating device, is located within 25 feet of the device, and has sole control over the device.

Tasks not Applicable to Lockout/Tagout

Certain work activities performed by the plumbers are not applicable to the lockout/tagout standard. For these tasks, application of lockout/tagout will be at the discretion of the plumber performing the work. The following conditions should be used as guidelines to determine where the standard may not be applicable:

* Where there is minimal risk for the plumber to work on the equipment while it is energized, or with a system that is pressurized;

* Where the energy associated with the system is not sufficient to cause injury to an employee;

* Where the plumber is working on equipment for which the means of disconnecting energy is within the work area, and no more than 25 feet in a direct line of sight from the plumber. For these situations, it is recommended that a tag be attached to the disconnecting means as a precautionary reminder.

Lockout /Tagout Devices

Boston University provides all plumbers with personal locks and chains for the exclusive purpose of locking out valves and other equipment. Each lock is coded to correspond to an authorized employee. The only custodian of keys to issued personal locks are the authorized worker.

Standardized, laminated tags have been issued for the expressed purpose of affixing to locks at lockout locations. At each lockout location, once energy isolating devices have been opened, authorized employees affix their personal tag with their lock to prevent re-energization, and to identify who is doing the work

Additional locks and tags, as well as chains, valve adapters, and multiple lock adapters will be maintained by the shop supervisor.

Annual Inspection

To assure that the energy control procedures continue to be implemented properly, and that all plumbers are familiar with their responsibilities, an annual inspection will be conducted by the Plumbing Shop Supervisor. The inspection will include a review of both the specific energy control procedures as well as the individual plumber's responsibilities under the program. Further details regarding this program element is located in Section V, Inspections of this manual.

Training

To ensure that all plumbers understand the purpose and function of the energy control program, and to impart the skills required for safe application, usage and removal of energy controls, Boston University has developed the training program described in Section IV, Training Program.

All new plumbers, prior to being assigned work that requires the control of hazardous energy sources will participate in an energy control training program conducted by a senior member of the plumbers group, or a supervisor. Documentation of this training will be maintained by Physical Plant and the EH&S database. The objectives of this instruction are to provide an overview of the lockout standard, describe applicable classes of equipment, and the methods and means for energy isolation and control.

Authorized employee retraining will occur whenever there is a change in job duties, procedures, or equipment which presents new hazards., or when deficiencies are identified during periodic inspections.

Employees will receive instruction in the purpose and use of energy control procedures, locks, tags, and the restriction of attempts to restart, or re-energize systems or equipment that is locked and/or tagged out. Affected employee instruction will be a safety talk provided by the affected employee's supervisor.

General Lockout Tagout Procedure

Section III, Energy Control Procedures covers the following sequential elements of lockout/tagout:

1. Prepare for shutdown - Prior to the commencement of work, authorized employees must have knowledge regarding the type and magnitude of energy, the hazards to be controlled, and the methods and means for control.

2. Shutdown - Equipment or machines must be shutdown using the operational method.

3. Energy Isolation - All energy isolating devices must be identified and operated to block the flow of energy to the machine or equipment

4. Lockout / Tagout - Authorized employees affix lockout and/or tagout devices to the energy isolating devices.

5. Release stored energy - Relieve any stored or residual energy. This may require: shorting capacitors, bleeding air and hydraulic lines, and chock blocking unsupported machine parts.

6. Verification - Attempt to start the machine or equipment to verify that energy is adequately disabled.

Prior to lockout devices being removed, and energy being restored, authorized employees will take the following actions

Ensure employees are safely removed from the work area, and that machines are intact
Notify affected employees of the impending re-energization
Remove lockout and tagout devices

NOTE: If a plumber encounters a work procedure that, while requiring a lockout/tagout, is not currently addressed in the Energy Control Manual, it should be immediately brought to the attention of that employee's Supervisor for inclusion in the Manual. In addition, no such work may proceed without the prior approval of the Plumbing Supervisor. Consult your Supervisor for the most recent version of this document.

Removal of Locks and Tags

The authorized employee who attached the lock or tag to the isolating device must remove it. When the authorized employee who applied the device is not available to remove it, the device may be removed under the direction of the plumbing supervisor, provided that:

- verification can be made that the authorized employee is no longer on campus,
- reasonable efforts are made to contact the authorized employee to inform him/her that the device will be removed, and
- ensuring that the authorized employee is made aware of the device's removal prior to their resuming work on campus.

Additional Requirements

Outside personnel - Contractors and vendors engaged in servicing or maintenance that will expose employees to hazardous energy must first inform the appropriate Boston University trade group contact person of their energy control procedures. This requirement is meant for the purpose of alerting employees of the methods and means to be implemented for isolating hazardous energy. Conversely, the Boston University representative must inform outside personnel of the University's program and methods for controlling energy sources.

Group Lockout - When servicing is to be conducted by a crew, or multiple tradesmen, each authorized employee involved in the service or maintenance must affix their own personal lock and tag. This can be accomplished by using a multiple lock adapter.

Shift or Personnel Changes - During continuing service and maintenance between shifts, ensuring continuity of energy control during personnel changes requires that the on-coming shift worker affix his/her lock and tag to the energy isolating device immediately after the off-shift worker removes his/her devices.

SECTION-II

GLOSSARY of TERMS

Affected Employee
An employee who performs the duties of his or her job in an area in which the energy control procedure is implemented and servicing or maintenance operations are performed. An affected employee does not perform servicing or maintenance on machines or equipment and, consequently, is not responsible for implementing the energy control procedure. An affected employee becomes an authorized employee whenever he or she performs servicing or maintenance functions on machines or equipment that must be locked or tagged.

Authorized employee
An employee who performs servicing or maintenance on machines or equipment. Lockout/ tagout is used by these employees for their own protection.

Capable of being locked out
An energy isolating device is considered capable of being locked out if it meets one of the following requirements:

- It is designed with a hasp to which a lock can be attached;
- It is designed with any other integral part through which a lock can be affixed;
- It has a locking mechanism built into it; or
- It can be locked without dismantling, rebuilding, or replacing the energy isolating device or permanently altering its energy control capability.

Energized
Machines and equipment are energized when (1) they are connected to an energy source or (2) they contain residual or stored energy.

Energy-isolating devices
Any mechanical device that physically prevents the transmission or release of energy. These include, but are not limited to, manually-operated electrical circuit breakers, disconnect switches, line valves, and blocks.

Energy source
Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Energy Control Procedure
A written document that contains those items of information an authorized employee needs to know in order to safely control hazardous energy during servicing or maintenance of machines or equipment.

GLOSSARY of TERMS (cont.)

Energy Control Program
A program intended to prevent the unexpected energizing or the release of stored energy in machines or equipment on which servicing or maintenance is being performed by employees. The program consists of energy control procedure(s), an employee training program, and periodic inspections.

Lockout
The placement of a lockout device on an 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.

Lockout device
Any device that uses positive means such as a lock, either key or combination type, to hold an energy-isolating device in a safe position, thereby preventing the energizing of machinery or equipment. When properly installed, a blank flange or bolted slip blind are considered equivalent to lockout devices.

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 is removed.

Tagout device
Any prominent warning device, such as a tag and a means of attachment, that can be securely fastened to an energy-isolating device in accordance with an established procedure. The tag indicates that the machine or equipment to which it is attached is not being operated until the tagout device is removed in accordance with the energy control procedure.

SECTION - III

ENERGY CONTROL PROCEDURES

General Instructions

The following energy control procedures are intended to address only those activities performed by the Boston University plumber's trade group. All other Boston University employees or contractors wishing to perform tasks on equipment which may expose those individuals to hazardous energy must first notify the appropriate trade group for assistance.

As previously discussed in Section I, all equipment described in the following procedures is capable of being locked out, typically by locking out the appropriate control valves. Therefore, whenever energy control procedures are required to perform servicing or maintenance, the relevant energy isolating device(s) shall be locked out, not tagged out. Tags are only permitted as a good practices reminder for those circumstances where the plumber has direct sight of the energy isolating device, is located within 25 feet of the device, and has sole control of the device.

It is expected that in a vast majority of cases, the servicing or maintenance activities requiring lockout/tagout of hazardous energy will be conducted by a single plumber who will perform the required tasks continuously and will then immediately re-energize the system. Therefore, the procedures that follow reflect the presence of one plumber. For those very limited cases where more than one individual will be in the workspace, a multi-lock adapter shall be affixed to the energy isolating device with each worker's lock attached to the adapter. As each individual completes their tasks and leaves the workspace, they shall remove their lock. The last person to remove their lock from the adapter shall be responsible for ensuring that all other individuals are out of the workspace prior to re-energizing the system.

It should be noted that with some equipment, such as pumps, compressors, and boilers, additional steps might be necessary in order to relieve residual hazardous energy before work is performed directly on the equipment. However, these activities are not to be performed by the plumber's group and are therefore not addressed in the following procedures.

ENERGY CONTROL PROCEDURES

Natural Gas Distribution Systems

General Information

There are numerous natural gas distribution systems tied throughout the Boston University campus. Natural gas is used primarily as fuel in the boilers and domestic-sized water heaters. It is also used as fuel in the laundry and kitchen facilities, and is also found throughout most of the laboratories. The hazard posed by work on these systems is the potential release and ignition of pressurized natural gas.

While the plumber's group is not involved in the initial installation of larger distribution headers, they are responsible for performing standard servicing and maintenance on these larger systems. The plumbers are also responsible for installation, servicing and maintenance of smaller distribution systems such as those found at residential installations in Boston University housing. This energy control procedure is valid for all activities performed by Boston University plumbers where there is potential for the release and ignition of a sufficient quantity of natural gas to cause injury.

De-energizing Process

Should servicing or maintenance be required on the natural gas distribution systems, the following steps should be completed in the order indicated prior to beginning the work:

1. **Locate the gas control valve that supplies the piping or equipment to be serviced. Determine whether there is a secondary gas supply source as well. Based on Massachusetts plumbing code requirements, it is expected that control valves will usually be located directly adjacent to the equipment being serviced.**

2. **Close and lock the gas control valve. If more than one isolating valve is to be closed, the most upstream valves should be closed first.**

Note: If the work is to be performed continuously by one plumber, and they will have visual contact with the applicable control valves for the duration of their work, a lock is not required. Tags are recommended as a general practice under these circumstances. Otherwise, a lock shall be affixed to the isolation valves sources.

De-energizing Process (cont.)

3. If the natural gas is being shut off to permit servicing or maintenance of adjacent fuel-fired equipment, verify that any pilot or other flame no longer exists within that equipment.

3a. Attempt to re-start the equipment to verify that natural gas is no longer being supplied to the equipment.

4. Verify that the locked valve can not be re-opened.

Re-Energizing Process

When the work is completed, the following steps should be performed in the order indicated:

5. Ensure that all tools and equipment are removed from within the workspace, and that all system components are properly connected.

6. Remove the locks/tags from the gas control valve(s).

7. Slowly open the gas control valve(s). If the odor of natural gas is detected, immediately close the valve(s) and re-examine all system connections.

8. Re-start any fuel-fired equipment taken out of service to verify that natural gas is now being supplied to that equipment.

ENERGY CONTROL PROCEDURES

Hot and Cold Water Distribution Systems

General Information

The servicing and maintenance of the water distribution systems is a central function of the plumber's group. These activities often involve minor modifications to smaller pipelines or cold water systems. During many of these tasks there is no significant threat of injury from the release of hazardous energy. However, in some instances these systems can present a clear and substantial hazard to the employee performing these tasks. The specific hazards are the thermal energy of the hot water system, which can scald or burn an employee, and the hydraulic energy due to pressurized water, particularly in the larger diameter pipelines and piping sections located in the taller buildings. System components serviced by the plumber's group can include control valves, pumps, gaskets and piping.

This energy control procedure is applicable for all water distribution system activities where the potential exists for plumbers to be exposed to hot water or could be injured by the release of hydraulic energy.

De-Energizing Process

Should servicing or maintenance be required on these distribution systems, the steps listed below should be completed in the order indicated, prior to starting any work.

1. **Identify the control valve(s) that isolate the flow of water through the system component or pipe section being serviced. If the work is to be performed on a piece of equipment, Massachusetts plumbing code requirements require that control valves be located directly adjacent to the equipment being serviced.**

2. **Close and lock the control valves identified in step #1.**

Note: If the work is to be performed continuously by one plumber, and they will have visual contact with the applicable control valves for the duration of their work, a lock is not required. Tags are recommended as a general practice under these circumstances. Otherwise, a lock shall be affixed to the isolation valves sources.

De-Energizing Process (cont.)

3. **Using the applicable bleed valve or drain valve, relieve any residual hydraulic energy. Utilize system pressure gauges wherever possible to verify the release of this residual energy. The discharge of the residual water can also be physically observed.**

4. **Verify that the locked valves can not be re-opened, and that applicable pressure gauges read "zero".**

5. **Care should be exercise when opening system components. Bolts should all be loosened to confirm the absence of any remaining pressure, prior to removing the bolts.**

Re-energizing Process

When the work is completed, the following steps should be performed in the order indicated:

6. **Ensure that all tools and equipment are removed from within the work space.**

7. **Verify that all bolts and equipment components are properly reattached.**

8. **Remove all locks/tags from the isolation valves, and assure that all drain valves and bleed valves are closed.**

9. **Open the isolation valves. Observe the pressure gauges to confirm the system re-pressurization.**

ELECTRIC PUMPS

General Information

The University has a variety of electrically powered pumps throughout the campus, typically fed from a 480/277 volt distribution system. Many of these pumps are designated as fire pumps. As such, they are fed directly from the transformer as opposed to being tied through the Main Breaker as are the rest of the pumps. The fire pump panel is equipped with a G.F.I. breaker, and the electric motor should have a disconnect switch located directly adjacent to the pump installation.

The plumber's trade group performs servicing and maintenance work on many of these electric pumps. As part of the energy control procedure, the plumbers may disconnect the electrical energy isolation device for the pump, typically a control switch located adjacent to the pump. Following established protocol, if the work is to be performed continuously by one plumber, and they will have visual contact with the applicable isolation device for the duration of their work, a lock is not required. Otherwise, the energy isolation device shall be locked, and the electrician's group should be contacted to perform this function.

De-energizing Process

If servicing or maintenance is required on any of these electric pumps, the following steps should be completed in the order indicated, prior to starting any work:

1. Identify whether the electric motor installation has a local disconnect switch to isolate energy to the motor and pump.

2a. If a local disconnect switch is present, "open" the switch to de-energize the pump.

2b. If a local disconnect switch is not present, contact the electrician's group to lock out the pump breaker at the distribution panel.

3. Once the electric motor has been isolated, attempt to start the motor to verify that it is no longer energized. Once verified, press the stop button.

4. Identify the valves located on the suction and discharge side of the pump.

5. Close and lock each of the valves.

De-energizing Process (cont.)

Note: As previously mentioned, if the work is to be performed continuously by one plumber, and they will have visual contact with the applicable control valves for the duration of their work, a lock is not required. Tags are recommended as a general practice under these circumstances. Otherwise, a lock shall be affixed to the isolation valves sources.

6. Using the applicable drain valve or pressure relief valve, relieve any residual hydraulic energy. Utilize system pressure gauges wherever possible to verify the release of this residual energy.

7. Verify that the locked valves can not be re-opened, and that applicable pressure gauges read "zero".

8. Care should be exercised when initially opening system components. Bolts should all be loosened to confirm the absence of any remaining pressure, prior to removing the bolts.

Re-energizing Process

Once the work is completed, the following steps should be performed in the order indicated:

9. Ensure that all tools and equipment are removed from within the work space.

10. Verify that all bolts and equipment components are properly reattached.

11. Remove all locks/tags from the isolation valves, and assure that all drain valves and pressure relief valves are closed.

12. Open the isolation valves.

13. Re-energize the electric pump, either by closing the local disconnect switch or by contacting an electrician and having them press the "close" button on the pump breaker.

14. Verify that the pump is now re-energized by pressing the "on" button, and observing the pressure gauges to confirm the system re-pressurization.

ENERGY CONTROL PROCEDURE

Water-Based Fire Protection Systems

General Information

The following procedure is applicable for all water-based fire protection systems whose components are maintained or serviced by the plumber's group. Plumbers are responsible for performing a wide variety of maintenance activities on these systems. The primary hazard associated with work on these systems is the result of hydraulic pressure of the water. In the case of dry-pipe systems, there is also a pneumatic hazard potential due to the pressurized air in the system.

This procedure is to be implemented only by Boston University plumbers, and it does not address additional steps that may be required by other trade specialists who might work on these systems. In addition, the procedure is applicable solely for those activities where the sudden release of hydraulic or pneumatic pressure could cause employee injury. Examples of such equipment include valves, piping, and risers. Note that fire pumps are addressed in a separate energy control procedure.

De-energizing Process

The following energy control steps should be initiated in the order indicated prior to the beginning of any work:

1. **Identify the valve(s) which control the flow of water or air to the piece of equipment or piping section to be serviced.**

2. **Close and attach locks on each of the isolation valves identified in Step #1.**

Note: If the work is to be performed continuously by one plumber, and they will have visual contact with the applicable control valves for the duration of their work, a lock is not required. Tags are recommended as a general practice under these circumstances. Otherwise, a lock shall be affixed to the isolation valves sources.

3. **Using the applicable bleed valve or drain valve, relieve any residual hydraulic or pneumatic energy. Utilize system pressure gauges wherever possible to verify the release of this residual energy. The discharge of the residual water or air can also be physically observed.**

De-energizing Process (cont.)

4. **Verify that the locked valves can not be re-opened, and that applicable pressure gauges read "zero".**

5. **Care should be exercised when initially opening system components, such as flanges and face plates on dry-pipe valves. Bolts should all be loosened to confirm the absence of any remaining pressure, prior to removing the bolts.**

Re-energizing Process

When the work is completed, the following steps should be performed in the order indicated:

6. **Ensure that all tools and equipment are removed from within the work space.**

7. **Verify that all bolts and equipment components are properly reattached.**

8. **Remove all locks/tags from the isolation valves, and assure that all drain valves and bleed valves are closed.**

9. **Open the isolation valves. Observe the pressure gauges to confirm the system re-pressurization.**

ENERGY CONTROL PROCEDURE

Pressurized Air Systems

General Information

There are several pressurized air distribution headers throughout the Boston University campus, serving a variety of functions. The plumber's group is responsible for both the installation and the maintenance activities on these systems. The primary hazard associated with work on these pressurized systems is naturally a pneumatic hazard potential.

This energy control procedure is valid for all activities performed by Boston University plumbers wherever the sudden release of pneumatic pressure could cause employee injury. Further, the procedure is to be implemented only by Boston University plumbers, and it does not address additional steps that may be required by other trade specialists who might perform related work on these systems.

De-energizing Process

The following energy control steps should be initiated in the order indicated prior to the beginning of any work

1. **Identify the valve(s) which control the flow of air to the piece of equipment or piping section to be serviced.**

2. **Close and attach locks on each of the isolation valves identified in Step #1.**

Note: If the work is to be performed continuously by one plumber, and they will have visual contact with the applicable control valves for the duration of their work, a lock is not required. Tags are recommended as a general practice under these circumstances. Otherwise, a lock shall be affixed to the isolation valves sources.

3. **Using the applicable bleed valve or drain valve, relieve any residual pneumatic energy. Utilize system pressure gauges wherever possible to verify the release of this residual energy. The discharge of this residual air can also be physically observed.**

4. **Verify that the locked valves can not be re-opened, and that applicable pressure gauges read "zero".**

5. **Care should be exercised when initially opening system components. Bolts should all be loosened to confirm the absence of any remaining pressure, prior to removing the bolts.**

Re-energizing Process

When the work is completed, the following steps should be performed in the order indicated:

6. **Ensure that all tools and equipment are removed from within the work space.**

7. **Verify that all bolts and equipment components are properly reattached.**

8. **Remove all locks/tags from the isolation valves, and assure that all drain valves and bleed valves are closed.**

9. **Open the isolation valves. Observe the pressure gauges to confirm the system re-pressurization.**

SECTION-IV

TRAINING PROGRAM

Introduction

As required under the OSHA standard, Boston University provides initial and refresher training in the control of hazardous energy to each employee whose job responsibilities include performing tasks impacted by lockout/tagout procedures.

The extent and content of the training program is based on an individual employee's involvement and responsibilities under the hazardous energy control program.

For the purposes of this standard, all Boston University plumbers are designated as "authorized employees" (See Section II-Glossary of Terms). As authorized employees, these plumbers have the responsibility for implementing the energy control procedures described in this manual.

Scope of Training

An initial training session is provided whenever new employees are hired into the plumber's group. The objectives of the initial training are as follows:

* An overview of the lockout/tagout standard,
* A comprehensive description of the equipment classes that may be encountered at the Boston University campus,
* The type of energy and hazard presented by each class of equipment,
* A thorough review of each energy control procedure to be implemented by the plumber's group.

Retraining is provided on an as-needed basis, whenever any of the following changes occur:

* A change in job assignments,
* A change in energy control procedures,
* A change in machines or equipment that constitutes a new hazard,
* Deficiencies are identified as a result of an audit or other management decision.

The training may be performed either by a senior member or supervisor in the plumber's group, or by a contracted third party.

Upon completion of this initial training session, new employees will receive additional on-the-job training by working with a senior member of the plumber's group. The trainee will be required to demonstrate proper implementation of whichever energy control procedures are being performed as part of the daily job tasks. When, in the judgment of the training mentor, the trainee has demonstrated sufficient competency.

Training records of initial and refresher sessions, including the names and dates for each plumber who attended, are maintained by the Plumber's Shop and by the Boston University EH & S Database.

Refer to the attached training outline and handouts on the following pages for additional information regarding the content of the lockout/tagout training program for the plumber's group.

TRAINING OUTLINE

I. Introduction to Hazardous Energy Control Standard (29 CFR 1910.147)

- A. General requirements and definitions
- B. Criteria for standard application
- C. Overview of Boston University Plumber's Department
- D. Overview of Boston University lockout/tagout program

II. Description of Major Systems and Associated Hazards at Boston University

- A. Hot and Cold Water Distribution System
- B. Natural Gas Distribution Systems
- C. Water-based Fire Protection Systems
- D. Pressurized Air Systems

III. Roles and Responsibilities within the Hazardous Energy Control Program

- A. Plumber's responsibilities
- B. Responsibilities of other B.U. trade groups

IV. Energy Control Procedures

- A. Review of each energy control procedure

SECTION-V

INSPECTIONS

Boston University conducts annual inspections of the Energy Control Program to validate that the energy control procedures continue to be correctly implemented and that employees are familiar with their roles and responsibilities under the Energy Control Program. This inspection shall be performed by the plumbing supervisor, and shall include a review of individual responsibilities with the plumbers.

The inspections shall be documented, including information on the following:

* the date(s) of the inspection,

* the name(s) of the inspector,

* the systems or equipment on which the energy control procedures were reviewed, and

* the employees included in the inspection.

Findings and recommendations generated from each inspection shall be documented by the inspector. The plumbing supervisor will also be responsible for assigning responsibility and tracking completion of all recommendations identified during the inspection. The records from these inspections shall be retained for at least 3 years.