

# **ILLINOIS INSTITUTE OF TECHNOLOGY**

## **SAFETY POLICY COMMITTEE**

### **Lockout/Tagout Program**

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## 1.0 PROGRAM STATEMENT

The Occupational Safety and Health Act (OSHA) states a common goal of creating safe and healthful working conditions. The safety and health of employees continues to be the first consideration in the operation of IIT. IIT will ensure that the safety and health of each employee must be a part of every operation. IIT employees must constantly be aware of conditions in all work areas that can produce injuries. Employee cooperation in detecting hazards and, in turn, controlling them is a condition of employment. Inform your supervisor immediately of any situation beyond your ability or authority to correct. Only through such a cooperative effort can a safety program that is in the best interest of all be established and preserved. The objective is a safety and health program that reduces the number of injuries and illnesses to an absolute minimum.

## 2.0 REGULATORY STANDARD

- A. **Subject:** Control of Hazardous Energy Sources (Lockout/Tagout).
- B. **Regulatory Standard:** OSHA- 29 CFR 1910.147
- C. **Basis:** On a daily basis, approximately three million workers in the United States face extreme risk from uncontrolled energy when servicing machinery. The risk of uncontrolled energy when servicing machinery can lead to serious injury or death as a result. Typical non-lethal injuries include fractures, lacerations, contusions, amputations, puncture wounds, electric shock and falls. The average lost time for injuries runs approximately 24 days. OSHA estimates that 120 fatalities, 28,000 serious and 32,000 minor injuries could be annually prevented if proper job site lockout and tagout procedures are initiated. The OSHA Control of Hazardous Energy Sources Standard establishes uniform requirements to ensure that the workplace hazards of uncontrolled energy are evaluated, safety procedures implemented and proper hazard information transmitted to affected workers.
- D. **General:** IIT will ensure that all machinery meeting the criteria for lockout and tagout within its facilities is evaluated and that information, including training programs and lockout and tagout procedures are implemented. This standard practice instruction ("Program") is intended to address comprehensively the issues of evaluating and identifying potential uncontrolled energy sources and the associated hazards; communicating information concerning these hazards and establishing appropriate procedures and protective measures for employees.
- E. **Responsibility:** The IIT Director of Environmental Health and Safety, or designee ("DEHS"), has responsibility for this Program and has the authority to make necessary decisions to ensure the success of the Program. The DEHS will develop (and amend as needed) written detailed instructions covering each of the basic elements in the program. The DEHS is authorized to halt any IIT operation where a danger of serious personal injury exists.

### 3.0 DEFINITIONS

**Affected employee** – an employee whose job requires him or her (i) to operate or use a machine or piece of equipment on which servicing or maintenance is being performed under lockout or tagout, or (ii) to work in an area in which such servicing or maintenance is being performed.

**Authorized employee** – an employee who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this Program.

**Capable of being locked out** – an energy isolating device capable of being locked out if it (i) has a hasp or other means of attachment to which, or through which, a lock can be affixed, or (ii) has a built in locking mechanism. Other energy isolating devices are capable of being locked out if lockout can be achieved without the need to dismantle, rebuild or replace the energy isolating device or permanently altering its energy control capability.

**Energized** – connected to an energy source or containing residual or stored energy.

**Energy isolating device** – a mechanical device that physically prevents the transmission or release of energy, including, but not limited to, the following:

1. A manually operated electrical circuit breaker;
2. A disconnect switch;
3. A manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and to which no pole can be operated independently; and
4. A line valve, a block or any similar device used to block or isolate energy.

Energy isolating devices does not include push buttons, selector switches and other control circuit type devices.

**Energy source** – any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.

**Hot tap** – a procedure used in repair, maintenance and service activities, which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install corrections or appurtenances. It is commonly used to replace or add sections of pipeline without the interruption of service for air, gas, water, steam or petrochemical distribution systems.

**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** – a device that uses a positive means such as a lock, either key or combination type, to hold an energy isolating device in a safe position and prevent the energizing of the machine or equipment, including, but not limited to, blank flanges and bolted slip blinds.

**Normal production operation** – is the utilization of a machine or a piece of equipment to perform its intended production function.

**Servicing and/or maintenance** – workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, maintaining and/or servicing machines or equipment. Activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

**Setting up** – any work performed to prepare a machine or piece of equipment to perform its normal production operation.

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

## **4.0 LOCKOUT/TAGOUT PROGRAM**

**4.1 Written Program.** The DEHS will review and evaluate this Program (i) on an annual basis, (ii) when changes occur to 29 CFR 1910.147 that necessitate a revision, and (iii) when facility operational changes occur that require a revision. This written Program will be communicated to all personnel affected by it. It encompasses the total workplace, regardless of the number of workers employed or the number of work shifts, and should seek to establish clear goals and objectives.

**4.2 General Requirements.** The DEHS will review and approve lockout and tagout procedures through the use of this Program. This Program covers the servicing and maintenance of machines and equipment in which the unexpected energization or start-up of the machines or equipment or release of stored energy could cause injury to employees. Specifically, this Program applies as follows:

A. To the control of energy during servicing and/or maintenance of machines and equipment. Normal production operations are not covered. Servicing and/or maintenance which take place during normal production operations are covered if:

1. An employee is required to remove or bypass a guard or other safety device.
2. An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

Exception: Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection in accordance with company operational procedures.

B. This Program does not apply to the following:

1. 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.
2. 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 it is demonstrated that (i) continuity of service is essential, (ii) shutdown of the system is impractical, and (iii) documented company procedures are followed and special equipment is used which provide effective protection for employees.

**4.3 Program Implementation.** As part of the Program, the relevant department will establish and use procedures, approved by the DEHS for affixing appropriate lockout or tagout devices to energy isolating devices and disabling machines or equipment to prevent unexpected energization, start-up or release of stored energy so as to prevent injury to employees. Specifically, the DEHS will establish energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or piece of equipment where the unexpected energizing, start up or release of stored energy could occur and cause injury, the machine or equipment is isolated from the energy source and rendered inoperative. The Program will follow the following guidelines:

1. Tagout - If an energy isolating device is not capable of being locked out, a tagout system should be used. If at all possible, tagout should **NOT** be used.
2. Lockout/Tagout - If an energy isolating device is capable of being locked out, a lockout should be used, unless it can be demonstrated that the utilization of a tagout system will provide full employee protection.

3. Future requirements - Whenever replacement or major repair, renovation or modification of a machine or piece of equipment is performed or a new machines or equipment are installed, energy isolating devices for such machines or equipment should be designed to accept a lockout device.

#### **4.4 Full Employee Protection.**

A. Tagout location. When a tagout device is used on an energy isolating device which is capable of being locked out, the tagout device should be attached at the same location that the lockout device would have been attached, and the DEHS will demonstrate that the tagout program provides a level of safety equivalent to that obtained by using a lockout program.

B. Lockout equivalency demonstration. In demonstrating that a level of safety is achieved in the tagout program which is equivalent to the level of safety would be obtained by using a lockout program, the DEHS will demonstrate full compliance with all tagout-related provisions together with such additional elements as necessary to provide the equivalent safety available from the use of a lockout device. Additional elements include, but are not limited to:

1. Removal of isolating circuit elements,
2. Blocking of a controlling switches,
3. Opening of an extra disconnecting devices, and
4. Removal of a valve handles to reduce the likelihood of inadvertent energization.

**4.5 Energy Control Procedure Exceptions.** Once a facility evaluation is accomplished in accordance with 4.7 hereof documented procedures need not be developed if the following conditions exist:

1. The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down which could endanger employees;
2. The machine or equipment has a single energy source, which can be readily identified and isolated;
3. The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment;
4. The machine or equipment is isolated from that energy source and locked out during servicing or maintenance;
5. A single lockout device will achieve a locked-out condition;
6. The lockout device is under the exclusive control of the authorized employee performing the servicing or maintenance;
7. The servicing or maintenance does not create hazards for other employees; and

8. To utilizing this exception, IIT must not have had an accident involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

#### **4.6 Energy Control Procedures.**

A. Once a facility evaluation has been accomplished, procedures will be developed, documented and used for the control of potentially hazardous energy.

B. The following format will be followed for each machine requiring procedures. The supervisor will be responsible for drafting and implementing these procedures. The procedures will clearly and specifically outline the scope, purpose, authorization, rules and techniques to be used for the control of hazardous energy as well as the means to enforce compliance. Procedures will include, but not limited to:

1. A specific statement of the intended use of the procedure;
2. Specific procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy (manufacturer's specification will be followed when possible);
3. Specific procedural steps for the placement, removal and transfer of lockout or tagout devices and identification of the persons responsible for them; and
4. Specific requirements for testing a machine or piece of equipment to determine and verify the effectiveness of lockout and tagout devices and other energy control measures.

**4.7 Facility Evaluation.** The DEHS will evaluate all facilities by department to determine which machines or pieces of equipment require steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy. The DEHS will maintain a listing of all machines and equipment having procedures, in the following format:

Department	Machine #/ID	Date Evaluated	Date Proc. Dev.
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**4.8 Protective Materials and Hardware.** Based on the evaluation of the individual machine or piece of equipment conducted by the DEHS, appropriate lockout or tagout devices, as the case may be, such as locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners or other hardware will be provided for isolating, securing or blocking of machines or equipment from energy sources. In determining appropriateness, the DEHS will consider:

A. Selection Criteria. Lockout and tagout devices will (i) be singularly identified, (ii) be the only devices used for controlling energy; (iii) not be used for other purposes; and meet the following requirements:

1. Selected lockout and tagout devices should be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected;

2. Selected tagout devices should be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the message on the tag to become illegible; and

3. Devices should not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

B. Standardization within the facility. Lockout and tagout devices should be standardized within the facility in at least one of the following criteria: color, shape, or size and additionally, in the case of tagout devices, print and format should be standardized.

C. Removal requirements.

1. Lockout devices will be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as the use of bolt cutters or other metal cutting tools.

2. Tagout devices, including their means of attachment, will be substantial enough to prevent inadvertent or accidental removal. Tagout device attachment means will be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

D. Identification requirements.

1. Lockout and tagout devices will indicate the identity of the employee applying the device.

2. Tagout devices will warn against hazardous conditions if the machine or equipment is energized and must include a legend such as: "Do Not Start," "Do Not Open," "Do Not Close," "Do Not Energize," or "Do Not Operate."

#### **4.9 Periodic Inspections and Certifications.**

A. Inspection. The DEHS will, no less than once a year, conduct a periodic inspection of the energy control procedure for each machine or piece of equipment to ensure that the procedure and the requirements of this Program are being followed. Inspections should not be conducted by an individual who uses the energy control procedure being inspected in the course of his or her employment. Any deviations or inadequacies identified by the inspection will be promptly corrected. Whether a lockout or tagout device is used for energy control, the inspection will include a review, between the inspector and each

authorized employee and affected employee, as applicable, of that employee's responsibilities under the energy control procedure being inspected.

B. Certifications. The DEHS will certify that the periodic inspections have been performed. The certification will at a minimum identify:

1. The machine or piece of equipment on which the energy control procedure was being used;
2. The date of the inspection;
3. The employees included in the inspection; and
4. The person performing the inspection.

**4.10 Initial Training.** The DEHS will provide training to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required for the safe application, usage and removal of the energy controls are acquired by employees. The training will include the following:

1. Each authorized employee will receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace and the methods and means necessary for energy isolation and control;
2. Each affected employee will be instructed in the purpose and use of the energy control procedure; and
3. All other employees whose work operations are or may be in an area where energy control procedures may be used, will be instructed about the procedure and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

When tagout systems are used, employees will also be trained in the following limitations of tags:

1. Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by a lock.
2. When a tag is attached to an energy isolating means, it is not to be removed without authorization of the person responsible for it, and it is never to be bypassed, ignored or otherwise defeated.
3. To be effective, tags must be legible and understandable by all authorized employees, affected employees, and all other employees whose work operations are or may be in the area. Employees should immediately report non-legible or missing tags to the Maintenance Supervisor.
4. Tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace.
5. Tags may evoke a false sense of security, and their meaning needs to be understood as part of the overall energy control program.

6. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use.

**4.11 Refresher Training.** Retraining will be provided for all authorized and affected employees whenever changes in (i) their job assignments, (ii) machines, equipment or processes that present new hazards or (iii) the energy control procedures occur. Additional retraining will also be conducted whenever a periodic inspection reveals, or whenever the DEHS has reason to believe, that a deviation from or inadequacy in an employee's knowledge or use of the energy control procedures exists. The retraining will seek to reestablish an employee's proficiency and introduce new or revised control methods and procedures, as necessary. The DEHS will certify that employee training and retraining has been accomplished and is kept up to date. The certification will contain each employee's name and dates of training and retraining.

**4.12 Energy Isolation.** Lockout or tagout will be performed only by the authorized employees who are performing the servicing or maintenance.

**4.13 Notification of Employees.** Affected employees will be notified of the application and removal of lockout or tagout devices. Notification will be given before the controls are applied and after they are removed from the machine or equipment.

**4.14 Application of Control.** Lockout or tagout procedures will cover the following elements and actions and should be done in the following sequence:

A. Preparation for shutdown. Before an authorized or affected employee turns off a machine or piece of equipment, said employee should have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled and the method or means to control the energy.

B. Machine or equipment shutdown. The machine or equipment will be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be used to avoid any additional or increased hazard to employees as a result of the equipment stoppage.

C. Machine or equipment isolation. All energy isolating devices needed to control the energy to the machine or equipment will be physically located and operated in such a manner so as to isolate the machine or equipment from the energy source.

D. Lockout device application.

1. A lockout device will be affixed to each energy isolating device by an authorized employee.

2. Lockout devices will be affixed in a manner that will hold the energy isolating devices in a "safe" or "off" position.

E. Tagout device application.

1. A tagout device will be affixed to each energy isolating device by an authorized employees.
2. Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment will be fastened at the same point at which the lock would have been attached.
3. Where a tag cannot be affixed directly to the energy isolating device, the tag 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.
4. Tagout devices should 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.

F. Stored energy.

1. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy will be relieved, disconnected, restrained and otherwise rendered safe.
2. If a possibility of reaccumulation of stored energy to a hazardous level exists, verification of isolation will be continued until the servicing or maintenance is completed or until the possibility of such accumulation no longer exists.

G. Verification of isolation. Prior to starting work on machines or equipment that have been locked out or tagged out, an authorized employee will verify that isolation and de-energization of the machine or equipment have occurred.

**4.15 Release from Lockout or Tagout.** Before lockout or tagout devices are removed and energy is restored to the machine or equipment, procedures will be followed by an authorized employee to ensure the following:

1. The work area will be inspected to ensure that nonessential items have been removed and that machine or equipment components are operationally intact.
2. The work area will be checked to ensure that all employees have been safely positioned or removed.

After lockout or tagout devices are removed but before a machine or piece of equipment is started, affected employees will be notified that the lockout or tagout devices have been removed. Each lockout or tagout device will be removed from each energy isolating device by the employee who applied the device. When the employee who applied the lockout or tagout device is not available to remove it, the device may be removed under the direction of the Maintenance Supervisor, provided that specific procedures and training for such removal have been developed, documented

and incorporated into the program. The specific procedure will include at least the following elements:

1. Verification that the authorized employee who applied the device is not at the facility;
2. All reasonable efforts were made to contact the authorized employee to inform him or her that his or her lockout or tagout device has been removed; and
3. Ensuring that the authorized employee has this knowledge before he or she resumes work at that facility.

**4.16 Testing of Machines, Equipment, or Components.** In situations requiring lockout or tagout devices to be temporarily removed from the energy isolating device and the machine or equipment energized to test or position the machine, equipment or component thereof, the following sequence of actions should be followed:

1. Clear the machine or equipment of tools and materials;
2. Remove employees from the machine or equipment area;
3. Remove the lockout or tagout devices as specified as part of the individual machine procedures;
4. Energize and proceed with testing or positioning; and
5. De-energize all systems and reapply energy control measures in accordance with machine procedures and continue the servicing and/or maintenance.

**4.17. Non-University Personnel.** Whenever outside servicing personnel are engaged in activities covered by the scope and application of this Program, the DEHS and the outside employer will inform each other of their respective lockout or tagout procedures. The DEHS will ensure that IIT employees understand and comply with the restrictions and prohibitions of the outside employer's energy control program.

**4.18 Group Lockout or Tagout.** When servicing and/or maintenance is performed by a crew, craft, department or other group, they will use a procedure which affords the employees a level of protection equivalent to that provided by the implementation of a personal lockout or tagout device. Group lockout or tagout devices will be used in accordance with the procedures required by this Program governing individual procedures, including but not limited to, the following:

1. Primary responsibility will be vested in an authorized employee for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock).
2. Provision for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment will be made.

3. When more than one crew, craft or department is involved, assignment of overall job-associated lockout or tagout control responsibility will be vested to an authorized employee designated to coordinate affected work forces and ensure continuity of protection.

4. Each authorized employee will affix a personal lockout or tagout device to the group lockout device, group lockbox, or comparable mechanism when he or she begins work and will remove those devices when he or she stops working on the machine or equipment.

**419 Shift or Personnel Changes.** Specific procedures will be used during shift or personnel changes to ensure the continuity of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout device protection between off-going and on-coming employees, so as to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment or the release of stored energy.

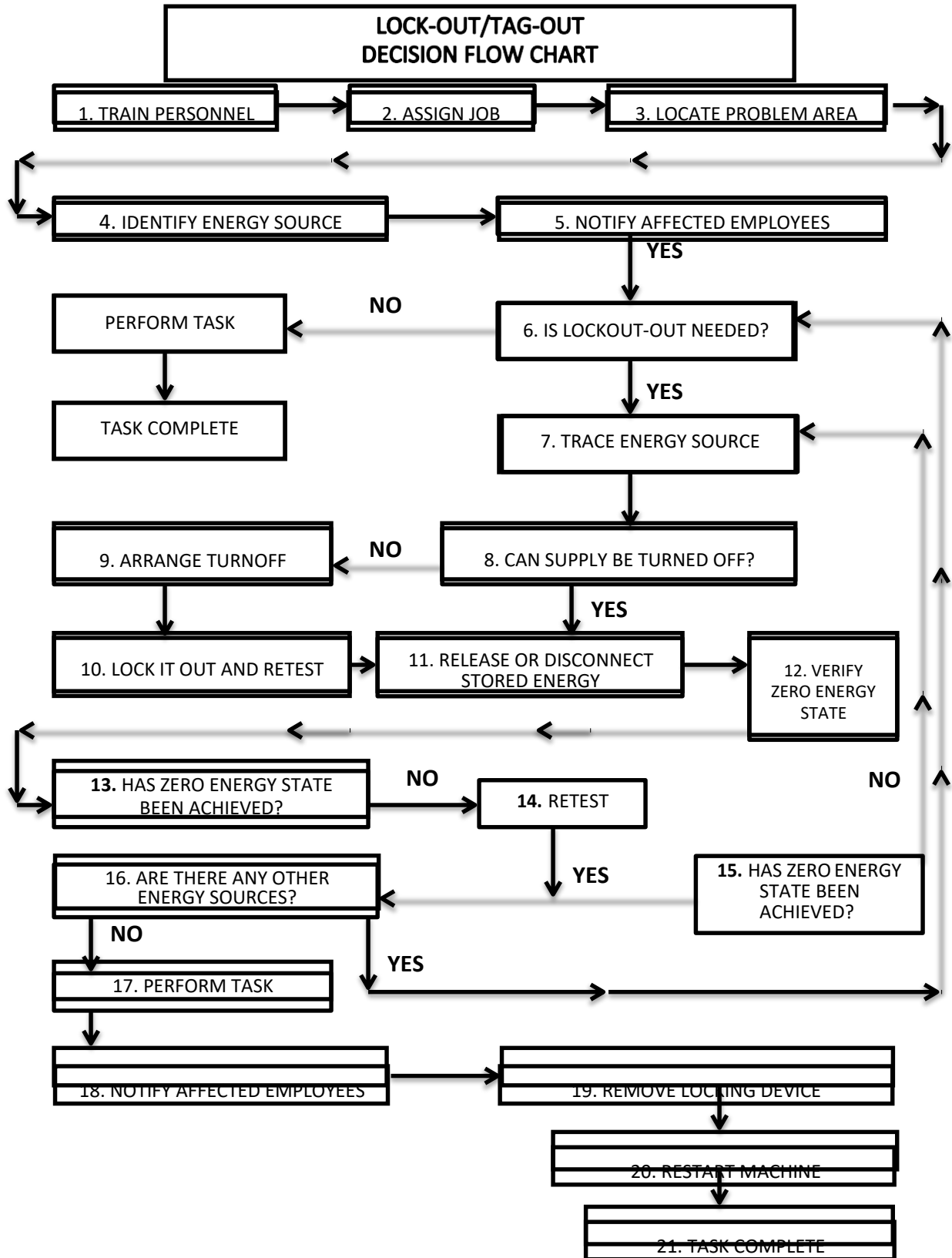
## 5.0 APPROVAL

The IIT Safety Committee reviewed this Program and recommended its adoption on July 18, 2005, and this Lockout/Tagout Program is approved and effective this 10<sup>th</sup> day of October 2005. The Safety Committee will review the contents, implementation and effectiveness of this Program no less than annually (but as often as necessary) to ensure that it meets all required legal and regulatory requirements and is adequately providing a safe and healthful environment for IIT faculty, employees and students. Any modification to this Policy have been reviewed and approved, and effective as of the date noted on the cover page.

By: \_\_\_\_\_ /s/  
Allan S. Myerson, Provost and Senior Vice President

By: \_\_\_\_\_ /s/  
John P. Collins, Vice President for Business & Administration

APPENDIX A



**APPENDIX B**

<b>Lockout Tagout Program</b>			
<b><i>Lockout Tagout Determination and Assessment</i></b>			
Equipment Designation:		Location:	
Date Assessed: _____, 20__	Related Operating Procedures Reviewed: Yes <input type="checkbox"/> No <input type="checkbox"/>	Related Maintenance Procedures Reviewed: Yes <input type="checkbox"/> No <input type="checkbox"/>	
<b>LOCKOUT TAGOUT ASSESSMENT CHECKLIST</b>			
1. Is there potential for stored, residual or reaccumulation of energy after shutdown?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
2. Does the unit have multiple energy sources that cannot be readily identified and isolated?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
3. The isolation and lock out of energy source will not completely deenergize or deactivate the unit	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
4. The unit is not isolated from its energy source and locked out during servicing or maintenance.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
5. A single lockout device will not achieve a locked out condition.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
6. The lockout device is not under the exclusive control of an "Authorized Employee."	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
7. The servicing or maintenance creates hazards for the other employees.	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
8. Have accidents involving unexpected activation/reenergization occurred during servicing?	YES <input type="checkbox"/>	NO <input type="checkbox"/>	
9. Written procedures must be developed if any "Yes" answers. ←			
<b>1. ASSESSED ENERGY SOURCES:</b> (indicate specific sources with initials)			
	Initials	Energy Source	Magnitude and Unit of Measure
1a.		Chemical:	
1b.		Hydraulic	
1c.		Pneumatic:	
1d.		Mechanical:	
1e.		Electrical:	
1f.		Thermal:	
1g.		Radioactive:	
1h.		Other:	
1i.		Other:	
<b>2. TYPES AND LOCATIONS OF OPERATING CONTROLS:</b> <span style="float:right">*Further Detailed on Attachment: Yes <input type="checkbox"/> No <input type="checkbox"/></span>			
Types of Operating Controls		Location on Unit	
2a.			
2b.			
2c.			
2d.			
<b>3. TYPES AND LOCATIONS OF ENERGY ISOLATING DEVICE(S):</b> <span style="float:right">*Further Detailed on Attachment: Yes <input type="checkbox"/> No <input type="checkbox"/></span>			
Types of Energy Isolating Devices		Location(s)	
3a.			
3b.			
3c.			
3d.			
<b>4. METHODS TO VERIFY ISOLATION OF THE UNIT:</b> <span style="float:right">*Further Detailed on Attachment: Yes <input type="checkbox"/> No <input type="checkbox"/></span>			
Verification Method		Location(s)	
4a.			
4b.			
4c.			
4d.			







APPENDIX D

LOCKOUT PROCEDURE MODEL	
LOCKOUT DATA	
Date:	Conducted by:
Model:	Location:
Work Center:	Model:
Equipment Number:	Equipment Name
Model:	Serial Number:
Model:	LOTO Procedure No.:
INSTRUCTIONS	
<p>The following lockout procedure is provided to assist employees in developing specific procedures to meet the requirements of this instruction. When the energy isolating devices are not lockable, tagout may be used, provided additional training and more rigorous periodic inspections are conducted. When tagout is used and the energy isolating devices are lockable, the Safety Director will ensure that full employee protection, additional training and more rigorous periodic inspections are provided. For more complex systems, more comprehensive procedures may need to be developed, documented and utilized.</p> <p><b>Purpose:</b> This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment. It shall be used to ensure that the machine or equipment is stopped, isolated from all potentially hazardous energy sources and locked out before employees perform any servicing or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.</p> <p><b>Compliance with this Program.</b> All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a machine or piece of equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize or use that machine or equipment.</p>	

**APPENDIX D**

<b>Sequence of Lockout</b>		
<p>1. Notify all affected employees that servicing or maintenance is required on a machine or piece of equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.</p>		
<b>Name(s)/Job Title(s) of Affected Employees and How Notified</b>		
Name	Job Title	Notification Means
<p>2. The authorized employee will refer to the applicable procedure to identify the type and magnitude of the energy that the machine or equipment utilizes, will understand the hazards of the energy, and will know the methods to control the energy.</p>		
<b>Types(s) and magnitude of energy, it hazards and the methods to control the energy</b>		
Type of Energy	Magnitude	Control Method
<p>3. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open switch, close valve, etc.)</p>		
<b>Type(s) and location(s) of machine or equipment operating controls</b>		
Types of operating controls	Locations	

**APPENDIX D**

<p>4. De-activate the energy isolating devices(s) so that the machine or equipment is isolated from the energy source.</p>	
<p>Type(s) and location(s) of energy isolating devices</p>	
Types of energy isolating devices	Locations
<p>5. Lock out the energy isolating device(s) with assigned individual lock(s).</p>	
<p>6. Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.</p>	
<p>Types of stored energy – methods to dissipate or restrain.</p>	
<p><b>Type(s) and magnitude(s) of energy, its hazards and the methods to control the energy</b></p>	
Types of stored energy	Methods to dissipate or restrain
<p>7. Ensure that the machine or equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate.</p>	
<p><b>Caution:</b> Return operating control(s) to neutral or “off” position after verifying the isolation of the equipment.</p>	
<p>Method of verifying the isolation of the equipment.</p>	
<p>8. The machine or equipment is now locked out.</p>	



