

## Safety and Health Policy and Procedure Manual

### LOCKOUT/TAGOUT PROGRAM Section 0100

I.	INTRODUCTION .....	2
II.	STANDARD .....	2
III.	SCOPE .....	2
IV.	PURPOSE .....	2
V.	TYPE AND MAGNITUDE OF ENERGY HAZARDS.....	2
VI.	RESPONSIBILITY.....	3
VII.	TRAINING.....	3
	A. Authorized Employees.....	3
	B. Affected Employees.....	4
	C. Other Employees.....	4
	D. New or Transferred Employees .....	4
	E. Employee Re-training .....	4
VIII.	ENERGY ISOLATING DEVICES.....	5
IX.	LOCKOUT/TAGOUT PROCEDURES.....	5
	A. General Requirements.....	5
	B. Specific Individual Lockout/Tagout Procedures.....	6
	C. Shift Changes.....	6
	D. Annual Lockout/Tagout Procedure Review (Inspections).....	7
	E. Scope.....	7
	F. Purpose.....	7
	G. Procedure.....	7
	H. Testing or Positioning of Machines, Equipment, or Components.....	8
	I. Group Lockout/Tagout Procedure.....	9
	J. Contractors.....	13

### Appendices

- A. Lockout/Tagout Evaluation
- B. Lockout/Tagout Training for Authorized Employees
- C. Affected and Other Employee Training Form
- D. Energy Isolating Device Survey Form
- E-1. General Lockout/Tagout Procedure Form
- E-2. Multiple Lockout/Tagout Procedure Form
- F-1. Group Lockout/Tagout Form
- F-2. Group Lockout/Tagout Device Location Form
- F-4. Group Lockout/Tagout Employees' Form

## I. INTRODUCTION

There are many hazardous energy sources located throughout UNCG which must be properly controlled to prevent potential serious injuries to university employees performing servicing and maintenance of equipment, machines, and systems. Hazardous energy which may injure university employees must be controlled by following the UNCG Lockout/Tagout procedures described in this Section.

## II. STANDARD

NCOSHA Standard for General Industry 1910.147 --Control of Hazardous Energy Sources (Lockout/Tagout).

## III. SCOPE

This UNCG safety procedures covers the protection of university employees from hazardous energy sources while servicing and maintaining equipment, machines, and systems in which the unexpected energization or start-up of the equipment, machine, or systems, or the release of stored energy could cause injury to university employees.

This standard does not apply to cord and plug type equipment provided that the person performing the service or maintenance is in control of the **unplugged** cord.

## IV. PURPOSE

This UNCG safety procedures establishes the minimum requirements that must be followed by university employees to protect themselves from hazardous energy sources while performing service and maintenance on equipment, machines, and systems. It shall be used to ensure that all potentially hazardous energy sources are neutralized and locked out and/or tagged out before servicing and maintenance tasks are performed.

All equipment shall be locked out or tagged out to protect against accidental or inadvertent operation which could cause injury. Employees must not attempt to operate any energy isolating device which is locked and/or tagged out. If only tagout procedures are used, they must show evidence that they are at least as effective as lockout procedures. Whenever possible, both lockout and tagout methods should be utilized to achieve maximum safety.

## V. TYPE AND MAGNITUDE OF ENERGY AND HAZARDS

The forms of potentially hazardous energy sources located throughout UNCG include, but are not limited to:

- Electrical energy to power equipment, machines and systems
- Hydraulic energy
- Chemical energy

- Thermal energy (Steam)
- Radiation
- Lasers
- Other energy which is hazardous

**Note:** This procedure does not cover the protection of UNCG employees from electrocution. Electrical safety for employees working on, near, or with electrical hazards above 50 volts is covered by the UNCG Electrical and Machine Safety Procedure, Section 0120 .

Each UNCG department is responsible for listing the specific types and magnitude of potentially hazardous energy within their department. A form which can be used is provided in Appendix A . The types of hazardous energy may be any of those listed above. The magnitude of electrical energy may be voltage, while pneumatic and hydraulic may be pounds per square inch (psi).

## VI. RESPONSIBILITY

This UNCG lockout/tagout procedure applies to all employees authorized to perform servicing and/or maintenance on equipment, machines, and systems; those affected employees operating equipment, machines, or systems on which servicing and maintenance is performed; and other employees whose duties require them to enter work areas where servicing and maintenance is performed. All three (3) groups of employees (authorized, affected, and others) must be appropriately trained concerning UNCG's Lockout/Tagout policy and procedures.

Departments which use lockout/tagout procedures must provide, prior to the start of the task, all necessary energy neutralizing devices, materials and hardware. This will prevent accidental re-energization or release of stored energy to employees.

## VII. TRAINING

All UNCG employees authorized to perform servicing and maintenance, those affected employees operating equipment, machines, or systems on which servicing and maintenance is performed, and other employees entering work areas where servicing and maintenance is performed, must understand the purpose and function of the lockout/tagout program.

*Departmental supervisors will be responsible for ensuring their employees are scheduled to attend training. Department heads are to ensure that employees have been properly trained as required by this policy. This training must be documented on the forms provided in Appendix B or Appendix C .*

### A. Authorized Employees

Authorized employees must receive initial training and special instructions concerning the scope, purpose, authorization, rules and techniques for lockout/tagout of hazardous energy sources including, but not limited to:

1. Recognition of the types of hazardous energy sources;
2. Intended use of the lockout/tagout procedure;
3. Steps for shutting down, neutralizing, isolating, holding and securing;
4. Steps for placement, removal and transfer of lockout/tagout devices and the associated responsibility;
5. Requirements for testing to determine and verify the effectiveness of lockout/tagout devices; and
6. Other appropriate measures necessary to protect employees from hazardous energy. (To be documented in Appendix B ).

## **B. Affected Employees**

All affected employees operating equipment, machines, or systems on which servicing and maintenance is performed must receive initial lockout/tagout training which includes, but is not limited to :

1. Intended use of the lockout/tagout procedure;
2. Steps for shutting down, neutralizing, isolating, holding and securing;
3. Steps for placement, removal and transfer of lockout/tagout devices and the associated responsibility;
4. Requirements for testing to determine and verify the effectiveness of lockout/tagout devices; and
5. Other appropriate measures necessary to protect employees from hazardous energy. (To be documented in Appendix C ).

**NOTE:** The extent of the training for affected employees can be less than that of authorized employees, provided they understand the overall lockout/tagout procedure. A training roster/checklist has been provided in Appendix C for this level of training.

## **C. Other Employees**

Other employees entering work areas where servicing and maintenance is performed, must be trained concerning the purpose of the lockout/tagout procedure, and how to recognize lockout/tagout jobs so they can avoid hazards to themselves and those performing the job using lockout/tagout.

**NOTE:** The training for other employees may be less than that for affected employees, provided they understand the purpose of the procedure. A training roster/checklist has been provided in Appendix C for this level of training.

## **D. New or Transferred Employees**

Each new or transferred employee (authorized, affected and others) shall be instructed in the purpose and use of the lockout/tagout procedure, as it pertains to them, before they begin their initial assignment. Refer to Appendix B and C for training details and rosters.

## **E. Employee Retraining**

Retraining is required for all authorized and affected employees whenever there is a change in job assignment, a change in machines or equipment that presents a new hazard, or when there is a change in the energy control procedure.

When changes do occur, the department head must notify the Office of Safety. This will create a dual function mechanism that allows equipment to be inspected and lockout/ tagout training to be hands-on.

## **VIII. ENERGY ISOLATING DEVICES**

Each department is responsible for surveying the energy isolating devices within their department including, but not limited to:

- Electrical disconnect switches,
- Hydraulic valves,
- Pneumatic valves
- Chemical pipeline valves, and
- Other energy isolating means.

Appendix D has been provided for use by employees performing this survey. This form can be used for identifying energy isolating devices necessary to neutralize all sources of energy.

When departments are performing repairs, renovations or modifications to any equipment or machine, energy isolating devices for such machines or equipment must be designed to accept a lockout device.

## **IX. LOCKOUT/TAGOUT PROCEDURE**

### **A. General Requirements**

All UNCG employees performing servicing and maintenance on equipment, machines, and systems must be protected by following lockout/tagout procedures.

**Specific individual procedures are required for all servicing and maintenance of equipment, machines or systems requiring lockout/tagout of more than one energy source.**

Specific lockout/tagout procedures are not required to be documented if **all** of the following criteria exist:

- equipment, machines or systems have no potential energy;
- equipment has a single energy source, readily identified and isolated;
- the isolation and lockout completely de-energizes and de-activates the machine or equipment;
- the machine is isolated from the energy source and locked out during servicing and maintenance;
- a single lockout device will achieve lockout;
- it is under the control of the employee performing the lockout;
- it does not create hazards for others; and
- there have been no lockout/tagout accidents concerning the machine or equipment

The overall general lockout/tagout procedure may be followed when all of the above conditions have been met.

## **B. Specific Individual Lockout/Tagout Procedures**

Each UNCG department is required to prepare specific individual lockout/tagout procedures for all equipment, machines and systems requiring more than one lockout/tagout of energy isolating devices and/or those that do not meet the exception requirements listed above in Section A, General Requirements.

Each department's lockout/tagout procedure must include:

1. The department name,
2. Equipment, machines, or system description/identification,
3. Energy source,
4. Type(s) and location(s) of energy isolating means,
5. Verification that lockout/tagout devices were installed, and
6. Neutralization of any stored or residual energy

Refer to Appendices E-1 and E-2 for forms to use in preparing the specific lockout/tagout procedures.

## **C. Shift Changes**

The continuity of all lockout/tagout procedures must be maintained whenever there is a shift change or change in personnel. This is to include an orderly transfer of isolating devices in an effort to minimize

exposure to hazards that might arise from the accidental energization of the equipment.

#### **D. Annual Lockout/Tagout Procedure Review (Inspections)**

Each lockout/tagout procedure must be annually inspected by an authorized employee, other than the one utilizing the energy control procedure. This will be accomplished by the authorized employee observing a lockout/tagout job and recording the following information.

1. Inspector's name (Authorized employee performing inspection)
2. Location
3. Time and date
4. Lockout/Tagout job (procedure) observed
5. Employees involved
6. Inspection findings
7. Any deviations or inadequacies observed
8. Recommendations
9. Corrective action taken

Refer to Appendix E-1 for a form to use for the lockout/tagout procedure inspection. The department head shall ensure that these annual inspections occur within his or her department. The completed forms must be forwarded to the Office of Safety, where they will be maintained.

#### **E. Scope**

This procedure covers the necessary safety precautions and procedures for servicing and maintenance of machines and equipment in which the unexpected energization or start-up, or release of stored energy could cause injury to employees.

#### **F. Purpose**

This procedure covers the minimum requirements for lockout and/or tagout of energy isolating devices to protect employees from hazardous energy including electrical, mechanical, hydraulic, pneumatic, or other energy. It will be used as a general procedure for isolating all potentially hazardous energy (lockout/tagout) before energization, start-up, or release of stored energy could cause injury. This procedure, when used in conjunction with specific information concerning individual machines, provides the necessary information for lockout/tagout of machines with multiple energy sources.

#### **G. Procedure**

The sequence for lockout/tagout is as follows:

1. Notify all affected employees that a lockout or tagout system is going to be utilized and the reason for its use. The authorized employees shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards
2. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).
3. Operate the switch, valve, or other energy isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy (such as that in 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 repositioning, blocking, bleeding down, etc. (Using Appendix D , describe type(s) of Stored Energy-methods to dissipate or restrain in the specific lockout/tagout procedure.)
4. Each individual involved must lockout and/or tagout the energy isolating devices with assigned and UNCG approved individual lock(s) or tag(s). A multiple lockout/tagout device is one which allows many authorized employees to lockout/tagout a single energy source.
5. After ensuring that no personnel are exposed, and as a check for having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.
  - **Caution: Return operating control(s) to neutral or off position after the test.**
6. The equipment is now locked out or tagged out and the authorized employee(s) can perform the servicing and maintenance.

### **Restoring Machines or Equipment to Normal Production Operations**

1. After the servicing and/or maintenance is complete and equipment is ready for normal operations, check the area around the machines or equipment to ensure that no one is exposed to hazards relating to start-up.
2. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout or tagout devices. Operate the energy isolating devices to restore energy to the machine or equipment.

### **H. Testing or Positioning of Machines, Equipment, or Components**

In some cases, it may be necessary for authorized employees to briefly remove their lockout/tagout devices for testing or positioning machines, equipment or components. Before removing the lockout/tagout devices, the authorized employee clears the machine/equipment and removes potentially exposed employees. Once the machine/equipment is clear, remove the lockout/tagout devices only for a time required to perform the controlled testing or positioning ensuring that no one is, nor will be, exposed to injury. Energize the machine/equipment and proceed with the testing/positioning. Immediately following the testing/positioning, de-



energize the machine/equipment and reapply the lockout/tagout device(s).

## **I. Group Lockout/Tagout Procedure**

Servicing and maintenance of machinery, equipment, and processes by employees requires that they comply with lockout/tagout procedures to ensure proper safety. Lockout/tagout procedures for protecting individual employees from hazardous energy sources have been prepared and communicated to authorized employees, affected employees, as well as other employees.

Some servicing and maintenance jobs, such as boiler shutdowns/overhauls and chemical process shutdowns, involve numerous energy sources and require multiple lockout/tagout devices.

All affected employees must be protected and comply with the lockout/tagout procedure. This group lockout/tagout procedure provides a method for complying with the procedure and eliminates the need for authorized employees to use more than one lockout/tagout device.

Servicing and maintenance jobs involving the use of multiple lockout/tagout devices and numerous authorized employees may be designated as group lockout/tagout jobs by supervision of the authorized employees involved.

Once the decision has been made by the supervisor on site to use the group lockout/tagout procedure, an authorized employee must be designated as the person having the primary responsibility for coordinating the group lockout/tagout. This individual is responsible for ensuring that all steps of the general lockout/tagout procedure are observed, as well as, the steps involved with the group lockout/tagout procedure.

To assist the authorized group lockout/tagout coordinator, forms are provided in Appendices F-1, 2, and 3. These forms will remind the coordinator of the requirements and will serve as a written record documenting that the necessary steps were taken. Each job is different and special procedures and instructions will apply. Thus, the authorized group lockout/tagout coordinator must thoroughly analyze each job and utilize all the necessary precautions, regardless of what is recorded on the form.

The corresponding department will maintain these forms in their files, and must be available to the Office of Safety for review/inspection purposes.

The basic steps which should be followed by the authorized group lockout/tagout coordinator to ensure proper lockout/tagout of energy isolation devices and protection of authorized employees are:

(1) Review

Thoroughly review the job machinery, equipment, and process with the operating and servicing/maintenance groups to ensure that all potential sources of hazardous energy, including residual energy, are known and understood. Discussions may be held with other groups such as maintenance, electrical, and utility groups to ensure proper identification and control of energy sources. The information obtained must be recorded on the form shown in Appendix F-2 .

(2) Shutdown

The equipment, machinery, process operating group should shutdown the operation and designate it ready for servicing/maintenance. In most cases, the operating group would clean, flush, or in some way render the equipment, machinery, or process safe to perform the servicing/maintenance. When this is not done, the operating group should specify how the equipment, machinery, or process should be rendered safe.

(3) Energy Source Isolation

The authorized group lockout/tagout coordinator and an operating group authorized employee designated by supervision must identify, locate, and isolate all energy sources associated with the job. They must also identify, locate, and prepare relief devices for ensuring that residual or accumulated energy does not create a hazard to employees. All energy isolation devices/relieves are recorded on the form shown in Appendix F-2 Group Lockout/Tagout Device Location Form.

(4) Lockout/Tagout Device Application Tests

The authorized group lockout/tagout coordinator applies the lockout/tagout devices to the identified energy isolation devices and performs the required tests to

ensure the energy has been isolated and will not re-accumulate. In some cases, the designated operating group's authorized employee may also apply lockout/tagout devices as instructed by supervision. A written notation will be made, using the form provided in Appendix F-2 , stating that the device was applied.

(5) Keys/Lockout Box

All keys to lockout devices must be placed in a lockout box (a similar securing device) and locked by the authorized group lockout/tagout coordinator. ***The group lockout/tagout forms, Appendices F-1 , F-3 and F-4 will be kept with the lockout box.*** A specific, convenient, secure location will be designated for the lockout/tagout box so all authorized employees working on the job will know its location. This location will be recorded on the form provided in Appendix F-1 .

(6) Employees

All authorized employees working on the group lockout/tagout job must apply their individual lockout/tagout device to the lockout box prior to beginning work on the job. They should review the job description and other pertinent comments described on Appendices F-1 and F-3 . These forms must be kept with the lockout box during the course of the job.

Each employee is required to sign the form shown in Appendix F-3 when they apply their lockout/tagout devices to the lockout box. This form must be kept with the box until the servicing or maintenance is completed.

Employees may observe the specific lockout/tagout device locations, if they

desire, to ensure that proper lockout/tagout has been achieved. Usually, the authorized group lockout/tagout coordinator will take the employees to the specific locations.

(7) Lockout/Tagout Coordinator

The group lockout/tagout box must remain locked at all times until the authorized group lockout/tagout coordinator determines it is safe to remove the keys. Thus, the coordinator's lockout device usually stays on the box until the job is completed. Other control procedures approved by the authorized group lockout/tagout coordinator may be used as necessary, provided employees are properly protected.

(8) Job Completion

After the job is complete, the authorized group lockout/tagout coordinator and the designated operating group authorized employee reviews the complete job to ensure that it is safe to remove the lockout/tagout devices. Special precautions must be taken to ensure that all employees are removed from danger and no employee hazard will result from removal of the lockout/tagout devices.

(9) Lockout/tagout Devices Removal

The authorized group lockout/tagout coordinator must review all forms used during the job to ensure the job is complete and all employees are protected. Once this has been done, the authorized group lockout/tagout coordinator can remove higher lockout/tagout devices from the lockout box and all other energy isolation devices.

(10) Records

All groups lockout/tagout procedure forms (3) must be completed, signed, and filed chronologically in the designated record storage within each department for future reference.

**NOTE:** Since each group lockout/tagout is different, special procedures and precautions may be required which are not covered in the above steps. Thus, the authorized group lockout/tagout coordinator has the final authority to do what is required to ensure the safety of all employees working on the job.

## **J. Contractors**

All contractors must comply with lockout/tagout procedures specified by this section of the *UNCG Safety & Health Policy and Procedure Manual*. UNCG employees must not violate the contractor's lockout/tagout procedures. Any deviation from UNCG's Lockout/Tagout procedure by contractors performing work on campus, requires that UNCG employees working in the area (authorized, affected and others) be trained in the contractor's procedures. The contracting department shall ensure that the contractor provides the necessary training, and forward this documentation to the Office of Safety.

Appendix A, Section 0100

<b>THE UNIVERSITY OF NORTH CAROLINA at GREENSBORO LOCKOUT/TAGOUT EVALUATION</b>					
<b>Date:</b>					
<b>Department:</b>		<b>Building(s):</b>		<b>Location:</b>	
<b>Lockout/Tagout Evaluation Scope:</b> Each UNCG Department is responsible for evaluating all of their equipment, machines, and systems which may require servicing and maintenance, and to identify potentially hazardous energy sources, which require lockout/tagout. This form may be used to assist in the evaluation. The information obtained from this evaluation will be the basis for preparing appropriate Lockout/Tagout Procedures and training employees.					
<b>EVALUATION</b>					
Item No.	Hazardous Energy Type	Hazardous Energy Magnitude	Description of Equipment, Machines, or Systems	Specific Location	Comments

Appendix B, Section 0100

<b>THE UNIVERSITY OF NORTH CAROLINA at GREENSBORO                  LOCKOUT/TAGOUT TRAINING FOR AUTHORIZED EMPLOYEES</b>			
Dept: _____ Trainer: _____ Date: _____			
<b>Authorized Employee Training</b>			
Lockout/tagout training for AUTHORIZED employees includes special instructions concerning scope, purpose, authorization, rules, and techniques for lockout/tagout of hazardous energy sources including, but not limited to:			
<input type="checkbox"/> Intended use of the procedure;			
<input type="checkbox"/> Steps for shutting down, isolating, holding, and securing;			
<input type="checkbox"/> Steps for placement, removal and transfer of lockout/tagout devices and the responsibility, and			
<input type="checkbox"/> Requirements for testing to determine and verify effectiveness of lockout/tagout devices and			
<input type="checkbox"/> Other measures			
<b>Trainees:</b>			
EMPLOYEE NAME	EMPLOYEE ID NUMBER	JOB TITLE	DEPARTMENT
Route copies to: Office of Safety			





Appendix D, Section 0100

<b>THE UNIVERSITY OF NORTH CAROLINA at GREENSBORO LOCKOUT/TAGOUT ENERGY ISOLATING DEVICE SURVEY</b>					
Date: _____ Department: _____ Location: _____					
Facility: _____					
<b>Lockout/Tagout Survey</b>					
<p>Each department will survey their department and identify those energy isolating devices for use in locking/tagging equipment, machines, and systems. Such energy isolating devices may include, but are not limited to: Electrical disconnect switches, hydraulic valves, pneumatic valves, chemical valves, and other energy isolating means. This information, along with the types of energy, will be used to prepare the required procedures.</p>					
<b>Survey</b>					
Item No.	Describe Equipment, Machine or Systems	Hazardous Energy	Isolating Devices Description	Isolating Devices Identity	Comments

Appendix E, Section 0100

<b>THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO GENERAL LOCKOUT/TAGOUT PROCEDURE</b>			
<b>Organization</b>	<b>Facility</b>	<b>Location</b>	
<b>Scope</b>			
This procedure covers the necessary safety precautions and procedures for servicing and maintenance of machines and equipment in which the unexpected energization or start up, or release of stored energy could cause injury to employees.			
<b>Purpose</b>			
This procedure covers the minimum requirements for lockout and/or tagout of energy isolating devices to protect employees from hazardous energy including electrical, mechanical, hydraulic, pneumatic, or other energy. It will be used as a general procedure for isolating all potentially hazardous energy (lockout/tagout) before employees perform any servicing and maintenance activities where unexpected energization, start up, or release of stored energy could cause injury. This procedure, when used in conjunction with the specific information concerning individual machines, provides the necessary information for lockout/tagout of machines with multiple energy sources.			
<b>Procedure</b>			
Only trained, authorized employees can lockout/tagout. All affected and other employees working in or entering work area where lockout/tagout is performed must be trained concerning lockout/tagout procedures. Determine all energy isolating devices requiring lockout/tagout to ensure effective control of hazardous energy. Determine the type and magnitude of the energy and required controls. Notify all affected employees of the plans to lockout/tagout. Shutdown the equipment/process by proper procedures. Locate the necessary energy isolating device(s) for the equipment/process and operate them to isolate energy sources and affix lockout/tagout devices. Relieve all stored or residual energy and take appropriate measures to ensure energy does not reaccumulate. Affix lockout/tagout device as necessary. Verify energy isolation and relief of stored energy after ensuring employees are not exposed and before beginning work. After start buttons are activated, press the stop button. Perform the servicing and maintenance. To safely restore machines, equipment or processes to normal production operations, replace all guards and safety devices, remove all personnel, remove all tools and equipment. Notify affected employees. Remove lockout/tagout devices (by authorized employee(s) installing lockout/tagout devices).			
<b>Lockout/Tagout Device Removal by Employer</b>			
When it becomes necessary to remove the lockout/tagout device of an employee who is unavailable at the facility, it can be done only by the employer and then under a special, approved procedure.			
<b>Group Lockout/Tagout</b>			
When a lockout/tagout job involves numerous lockout/tagout devices and many employees, a group lockout/tagout procedure may be used. A separate, special written procedure or permit is required.			
<b>Contractors</b>			
All contractors must comply with the lockout/tagout procedures specified by the site employer and employees of the employer must not violate the contractor's lockout/tagout.			
<b>Procedure Reviewed by</b>		<b>Date</b>	<b>Procedure Authorized by</b>
			<b>Date</b>

Appendix E-2, Section 0100

<b>THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO LOCKOUT/TAGOUT PROCEDURES FOR MULTIPLE ENERGY SOURCES</b>						
Date: _____		Procedure # _____				
Organization: _____			Facility: _____			
Location: _____						
<b>Purpose</b>						
This lockout/tagout procedure for multiple energy sources is for use in protecting employees performing servicing and maintenance of machines and equipment in which the unexpected energization or start up, or release of stored energy could cause injury to employees. It is specifically designed for use with the general lockout/tagout procedure (Appendix E-1).						
<b>Procedure</b>						
Department		Work Area		Equipment/Machine/Process		
Description of Job						
<b>Energy</b>		<b>Required Lockout/Tagout (LO/TO) Devices (Locks, tags, chains, etc.)</b>				
No.	Type	Magnitude	Description	Number		
<b>Energy Isolation</b>						
Step	Isolation Device	Identity	Location	LO/TO Device	Comments	Isolated
<b>Stored/Residual Energy</b>						
<b>Comments</b>						
Job Performed by: _____				Date: _____		
LO/TO Procedure Authorized/Approved by: _____						


Appendix F-1, Section 0100

<b>THE UNIVERSITY OF NORTH CAROLINA at GREENSBORO GROUP LOCKOUT/TAGOUT</b>			
Date: _____			
Organization: _____ Facility: _____ Location: _____			
EQUIPMENT/PROCESS/MACHINE/ETC.			
DESCRIPTION OF WORK			
Date Work Begins:	Date to End:	Authorized Employee: (Primary Responsibility)	Title:
CREW/CRAFT/DEPARTMENT INVOLVED	CONTACT	TITLE	TELEPHONE #
Coordination Responsibility for More than One Crew:		Title:	Telephone No.:
LOCKOUT/TAGOUT DEVICE PLACEMENT/LOCATION (Use Attached Sheet)			
EMPLOYEE WORKING ON GROUP LOCKOUT/TAGOUT (Use Attached Sheet)			
LOCATION OF LOCKOUT BOX			
SPECIAL INSTRUCTIONS			
Work Completed Date:	Authorized Employee Signature:	Date:	Time:

Appendix F-2, Section 0100

<b>THE UNIVERSITY OF NORTH CAROLINA at GREENSBORO GROUP LOCKOUT/TAGOUT DEVICE LOCATION</b>						
Date: _____ Department: _____						
Facility: _____ Location: _____						
<b>EQUIPMENT/PROCESS/MACHINE/ETC.</b>						
<b>DESCRIPTION OF WORK</b>						
Date Work Begins: _____ Ends: _____						
Authorized Employee (Primary Responsibility): _____						
Title: _____ Phone: _____						
<b>DEVICE LOCATION</b>						
No.	ENERGY ISOLATING DEVICE	DEVICE LOCATION	INSTALLED Date	INSTALLED Time	REMOVED Date	REMOVED Time
Work Ready to Begin Authorized Employee: _____ Date: _____						
Work Complete Authorized Employee: _____ Date: _____						

Appendix F-3, Section 100

			<b>GROUP LOCKOUT/TAGOUT EMPLOYEES</b>					Page 1 of 1 Date:	
Organization:			Facility:		Location:				
EQUIPMENT/PROCESS/MACHINE/ETC.									
DESCRIPTION OF WORK									
EMPLOYEE (AUTHORIZED)									
NO.	NAME	ID NUMBER	DEPT OR CREW	TIME	DATE	TIME	DATE	COMMENTS	
Work Completed			Authorized Employee Signature:				Date:	Time:	
Date:		Time:							