1. PURPOSE AND SCOPE

1.1. The purpose of this program is to establish procedures for the safe control of energy through locking and tagging of equipment and machinery.

1.2. This program establishes the minimum requirements for controlling hazardous energy whenever maintenance or repair is done on machinery. It is 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.

1.3. Hazards being guarded against include being caught in, being crushed by, being struck by, being thrown from mechanical systems; or contacting live electrical circuits/parts. This program supports compliance with the Occupational Safety and Health Administration Lockout/Tagout Standard.

1.4. The program herein established will ensure that machines and equipment are properly isolated from hazardous or potentially hazardous energy sources during servicing and maintenance, and properly protected against reenergization.

1.5. While any employee is exposed to contact with parts of fixed electrical equipment or circuits which have been deenergized, the circuits energizing the parts shall be locked out and tagged in accordance with the requirements of 29 CFR 1910.333(b)(2). See **Appendix A**.

1.6. Only when disconnecting means or other devices are incapable of being locked out, and until lockout capability is provided, will a tagout procedure (without lockout), be utilized. See **Appendix B**.

1.7. Copies of this written program may be obtained from the Safety Committee or Management Team.

2. ENFORCEMENT

2.1. Any employee who fails to follow these procedures will face disciplinary action in accordance with those listed in the Employee Handbook. The program is enforced by the Safety Manager and AirCorps Aviation Management Team.

3. DEFINITIONS

3.1. **Affected Employee:** An employee whose job requires him/her to operate or use a machine or equipment on which service or maintenance is being performed under lockout/tagout, or whose job requires him/her to work in an area in which such service or maintenance is being performed. Affected employees must be informed when lockout/tagout is being performed.

3.2. **Authorized Employee:** A person who locks and tags machines or equipment in order to perform service or maintenance on that machine or equipment. Each authorized employee will receive training in the recognition of applicable hazardous energy sources, the type and magnitude of the energy existing in the workplace, and the methods and means necessary for energy isolation and control.

3.3. **Energy:** A device is energized if it is connected to an energy source or if it contains any residual or stored energy. An energy source is any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, nuclear, or other energy.

3.4. **Energy Isolating Device:** A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker, a disconnect switch, a line valve, slip blind, slip gate, or a block and any similar device used to block or isolate energy.

3.4.1. The following are not considered to be energy isolating devices:

- Push Button
- Selector Switch

3.4.2. An energy isolating device will be considered to be capable of being locked out if:

- It is designated with a hasp or other attachment or integral part of which, or through which, a lock can be affixed.
- It has a locking device built into it.

3.4.3. For the purpose of this program, if a device is capable of being locked out, then it shall be locked out to provide maximum safety to employees. If an energy isolating device is not capable of being locked out, the tagout procedure shall be utilized.

3.5. **Lockout:** The process used to identify, cut off and secure all energy sources before beginning repairs, adjustments or maintenance. A lockout device is used to secure equipment or machinery in the off position, ensuring that the equipment or machinery cannot be operated.

3.6. **Lockout Device:** A lock (either key or combination type) that holds an energy isolating device in a safe position and prevents the machine or equipment from energizing.

3.7. **Group Lockout Device:** A group lockout device is a device to which more than one lockout device may be attached by more than one authorized employee to provide protection for a group of employees working on the same machinery or equipment.

3.8. **Servicing and/or Maintenance:** Workplace activities that require lockout/tagout on the equipment before beginning the activities because employees may be exposed to the unexpected energization or startup of the equipment or the release of hazardous energy. Servicing and/or maintenance includes constructing, installing, setting up, adjusting, inspecting, modifying, lubricating, cleaning or unjamming and making tool changes.

3.9. **Tagout Device:** A warning tag (weather & chemical resistant) standardized in size, color, with wording warning of hazardous energy.

3.10. **Zero Energy State:** All energy has been controlled in machinery or equipment.

REFERENCES – 29 CFR 1910.147 Control of Hazardous Energy and 29 CFR 1910.333Selection and use of Work Practices

4. RESPONSIBILITIES

4.1. The Program Administrators

4.1.1. Issuing and administering this program and making sure that the program satisfies the requirements of all applicable codes, regulations and standards.

4.1.2. Providing initial and annual training of employees on lockout/tagout procedures

4.1.3. Maintaining the training records of all employees included in the training sessions

4.1.4. Verifying through periodic audit that the energy control program effectively protects employees servicing powered equipment

4.2. Supervisors Whose Areas Contain Energized Equipment

4.2.1. Ensuring that all employees who are authorized to service equipment within the facility have received training on appropriate lockout/tagout procedures and energy control plans.

4.2.2. Completing energy control plans for each specific piece of equipment or process within the facility

4.2.3. Assuring that appropriate energy isolation devices are available for all equipment or processes within the facility

4.2.4. Assigning locks to authorized employees

4.2.5. Coordinating activities of contractors that may affect lockout/tagout and energy control procedures within the company

4.2.6. Ensuring that only authorized employees service the equipment and machinery in their department

4.3. Authorized Employees

4.3.1. Complying with the company's energy control program

4.3.2. Following all safe shutdown and startup procedures

4.3.3. Communicating activities to all affected employees and other authorized employees

4.3.4. Ensuring the security of their own lock and key

4.3.5. Ensuring that the appropriate procedures for Lockout/Tagout are in place when a group of employees works on the same equipment or machinery

4.4. Affected Employees – Laborers, Equipment Operators, Foremen

4.4.1. Advising the maintenance department when equipment needs servicing

4.4.2. Following the direction of the authorized employee as it affects the operation of their equipment

5. PROGRAM ACTIVITIES

5.1. General Energy Control Procedures

5.1.1. All machines/equipment that contain energy shall be locked out to protect against accidental or inadvertent operation or energization when such operation could cause injury to personnel. Lockout will also apply when working on or near exposed deenergized electrical circuits/parts.

5.1.2. Appropriate employees will be instructed in the safety significance of the lockout procedures. **Appendix C** is a list of job titles authorized to lockout.

5.1.3. All employees who are authorized to work on equipment or machinery in the company will follow appropriate company lockout/tagout procedures.

5.1.4. Contractors who perform work on company equipment will comply with company lockout/tagout procedures.

5.1.5. An energy control plan will be completed for all pieces of equipment requiring lockout. This plan will identify all energy isolation points to be locked and tagged, as well as any special information required to safely achieve a zero-energy state.

5.1.6. A Lockout checklist and a safe startup checklist will be used during all service and maintenance activities to ensure the safety of both authorized and affected employees.

5.1.7. Lockout devices shall be singularly identified. They shall be the only devices used for controlling energy and shall not be used for other purposes. Devices shall be durable, standardized, substantial, and identifiable.

5.1.8. The lockout devices shall indicate the identity of the employee applying the devices.

5.1.9. No employee shall attempt to operate any switch, valve, or other energy-isolating device which is locked out.

5.1.10. Each lockout device shall only be removed by the employee who applied the device. (exception; see Removal of Lockout Devices section of this program.)

5.1.11. All machines/equipment shall be locked out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Lockout will also apply when working on or near exposed deenergized electrical circuits/parts (See **Appendix A).**

5.2. Energy Control Procedures

5.2.1. **Preparation for Shutdown:**

a. In preparation for lockout, an initial survey must be made to locate and identify all energy isolating devices to be certain which switch, valve, or other energy isolating devices apply to the machine/equipment to be locked out. (See **Appendix D** for the Energy Source Evaluation). More than one energy source (electrical, hydraulic, pneumatic, chemical, thermal, or others) may be involved.

b. Before an authorized or affected employee turns off a machine or piece of equipment, the authorized employee must have knowledge of the type and magnitude of the energy to be controlled, and the methods or means to control the energy (See **Appendix B** for the specific Energy Control Procedures and **Appendix G** for Employee Hazard Evaluation).

c. Note: If work to be performed involves employees working on or near exposed deenergized electrical parts, see **Appendix A**.

5.2.2. **Machine or Equipment Shutdown:**

a. All affected employees shall be notified that a lockout system is going to be utilized and the reason for it, before the controls are applied.

b. If the machine or equipment is operating, shut it down by normal stopping procedure. (depress stop button, open toggle switch, etc.). Next, follow the procedures established for the machine or equipment (see **Appendix E**-Lockout/Tagout Procedures for Specific Equipment).

5.2.3. **Machine or Equipment Isolation**

a. Physically locate and operate the switch, valve, or other energy isolating devices so that the equipment is isolated from its energy sources and apply adequate hardware.

5.2.4. **Lockout Device Application**

a. Authorized employees shall lockout the energy isolating devices with identified assigned individual locks.
b. Lockout devices shall be applied so that they will hold the energy isolating devices in a " Neutral " or " Off " position.

5.2.5. **Tagout Device Application**

a. Only when disconnecting means or other devices are incapable of being locked out, and until lockout capability is provided, will a tagout procedure (without lockout), be utilized.
b. Tagout devices, where used, shall be affixed in such a manner as will clearly indicate the operation or movement of energy isolating devices from the safe or off position.
c. Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached.
d. Where a tag cannot be affixed directly to the energy isolating device, the tag shall 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.

5.2.6. **Stored Energy**

a. All stored or residual energy in rams, flywheels, springs, pneumatic, or hydraulic systems, etc. shall be blocked or dissipated. If there is a possibility of re-accumulation of stored energy, verification of isolation must be continued until servicing or maintenance is completed.

5.2.7. **Verification of Isolation**

a. Prior to starting work on machines or equipment that have been locked and after ensuring that no personnel are exposed, the authorized employee shall operate the push button or normal operating controls to verify that the appropriate equipment or machine has been deenergized and make certain it will not operate.
b. The machine/equipment is now locked out. Servicing or maintenance may now occur.
c. CAUTION: Return Operating Controls to the " Neutral " or " Off " position after the test.

5.2.8. **Removal of Lockout**

a. After the servicing and/or maintenance is completed and before the lockout devices are removed and energy is restored, the sequence of specific activities in **Appendix E** shall be completed by the authorized employee(s).
b. The general procedure to follow is:
    i. Clear away all tools
    ii. Remove employees from the area.
    iii. Remove the LO/TO device(s).
    iv. Energize and proceed. (If this is a temporary removal, reapply LO/TO devices).

c. If the authorized employee who applied the lock is not available, the supervisor shall take the following steps:
   i. Verify that the authorized employee who locked out the equipment is not on site.
   ii. Verify that the servicing and/or maintenance is complete.
   iii. Attempt to contact the authorized employee to inform him/her that his/her lock will be removed
   iv. Remove the lock.
   v. Make sure the employee is notified that his/her lock has been removed before he/she resumes work at the site.

d. In situations where lockout devices MUST be temporarily removed from the isolating device and the machine or equipment energized to test or position the machine, equipment, or component, the following sequence of actions will be followed:
   i. Clear the machine or equipment of tools and materials.
   ii. Remove employees from the machine or equipment.
   iii. Energize and proceed with testing or positioning.
   iv. De-energize all systems and reapply energy control measures in accordance with procedures set forth under Lockout Procedures & Techniques.

5.2.9. **Group Lockout**

a. In the preceding steps, if more than one individual is required to lockout machines/equipment (group lockout), the following procedures shall be implemented to provide protection to all employees.
   i. A primary authorized employee will be designated and responsible for the number of people working under the protection of the group lockout device. The primary authorized employee will ascertain the exposure status of the individual members participating in the group lockout to ensure continuity of protection for each individual. In addition, this primary authorized employee will be responsible for notifying affected employees before and after lockout procedures are performed.
   ii. Each authorized employee will place his/her own personal lockout device on the energy isolating device(s).
   iii. When an energy isolating device cannot accept multiple locks, a multiple lockout system must be used.

b. If lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will then use his/her own lock to secure the box or cabinet. When each person no longer needs to maintain his/her lockout protection, that person will remove his/her lock from the box or cabinet.

5.2.10. **Cord and Plug Connected**

a. Equipment - if servicing or maintenance is performed on cord and plug connected equipment the following procedures shall be performed to protect employees:
   i. Unplug equipment from its electrical socket.
   ii. Place a lockable cover over the plug and a lock on the plug cover during machine/equipment servicing or maintenance.

5.2.11. **Outside Contractors**

a. If outside contractors perform servicing or maintenance that requires lockout, a supervisor or designated employee shall take the following steps:
   i. Inform the outside contractors of our company's lockout procedures and provide a copy.
   ii. Obtain and review a copy of the outside contractor's lockout procedures.
   iii. Ensure that our employees understand and comply with the responsibilities and prohibitions of the outside contractor's lockout procedures.

5.2.12. **Training**

a. Training shall be provided by the company to ensure that the purpose and function of the energy control program are understood by employees and that the knowledge and skills required by such employees for the safe application, usage, and removal of energy controls shall be met. When tags are used, such employees will be trained as to the specific limitations of using the tagout system.
b. Authorized employees shall receive the following training:
   i. Recognition of hazardous energy sources.
   ii. Types and magnitude of hazardous energy in the workplace.
   iii. Methods, devices, and procedures used to lockout, verify lockout, and otherwise control hazardous energy on all pieces or types of equipment (including cord and plug connected equipment).
   iv. Procedures for removing locks and returning a machine or piece of equipment to operation.
   v. When tagout systems are used and the limitations of tags
   vi. Transfer of lockout responsibilities.
   vii. Group lockout procedures.
c. Affected and all "other" employees working at job sites shall receive training so that they are able to:
   i. Recognize when energy control procedures are being implemented, and;
   ii. Understand the purpose of the procedures and the importance of not attempting to start up or use the machine/equipment that has been locked.

iii. When tagout systems are used including the limitations of a tag and that a tag is not to be removed without authorization. The tag is never to be ignored or defeated in any way. All training will be certified (See **Appendix C**)

5.2.13. **Retraining**

a. Authorized and affected employees shall receive retraining in proper application of lockout procedures when there is a change in:
   i. Job assignments that expose an authorized employee to new hazards or lockout procedures.
   ii. Machines, equipment, or processes that present a new hazard or require modified lockout procedures.
   iii. Energy control procedures for a piece or type of equipment.
   iv. Or when an employee incorrectly performs lockout procedures.
b. Retraining will re-establish employee proficiency in lockout and ensure that employees are knowledgeable of new or revised procedures. All retraining will be documented and will include the employees' names and dates of training (See **Appendix C**). All training and retraining will be documented, signed & certified.

5.2.14. **Periodic Inspections**

a. An inspection of the energy control procedures will be conducted annually. It will be performed under the guidance of the Safety Manager.
b. Energy control procedures for each or type of machine must be inspected.
c. The inspection shall include a review of lockout responsibilities with each individual authorized to lockout the machine/equipment.
d. The person who performs the inspection must be authorized to perform the lockout procedures being inspected. The inspector cannot, however, review his/her own use of lockout procedures.
e. Any deviations or inadequacies identified shall be immediately addressed.

APPENDIX A
(Reference 29 CFR 1910.333)

(b) ***Working on or near exposed de-energized part.***

(1) ***Application.*** This paragraph applies to work on exposed de-energized parts or near enough to them to expose the employee to any electrical hazard they present. Conductors and parts of electric equipment that have been de-energized but have not been locked out or tagged in accordance with paragraph (b) of this section shall be treated as energized parts, and paragraph (c) of this section applies to work on or near them.

(2) ***Lockout and Tagging.*** Whenever any employee is exposed to contact with part of fixed electric equipment or circuits which have been de-energized, the circuits energizing the parts shall be locked out or tagged or both in accordance with the requirements of this paragraph. The requirements shall be followed in the order in which they are presented (i.e., paragraph (b) (2) (i) first, then paragraph (b) (2) (ii), etc.).

NOTE 1: As used in this section, fixed equipment refers to equipment fastened in place or connected by permanent wiring methods.

NOTE 2: Lockout and tagging procedures that comply with paragraphs (c) through (f) of 1910.147 will also be deemed to comply with paragraph (b) (2) of this section provided that:

(1) The procedures address the electrical safety hazards covered by this Subpart; and
(2) The procedures also incorporate the requirements of paragraphs (b)(2)(iii)(d) and (b)(2)(iv) (B) of this section.

(i) ***Procedures.*** The employer shall maintain a written copy of the procedures outlined in paragraph (b) (2) and shall make it available for inspection by employees and by the Assistant Secretary of Labor and his or her authorized representatives.

NOTE: The written procedures may be in the form of a copy of paragraph (b) of this section.

(ii) ***De-energizing Equipment.***

A. Safe procedures for de-energizing circuits and equipment shall be determined before circuits or equipment are de-energized.

B. The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures.

C. Stored electric energy which might endanger personnel shall be released. Capacitors shall be discharged and high capacitance elements shall be short-circuited and grounded, if the stored electric energy might endanger personnel.

NOTE: If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.

D. Stored non-electrical energy in devices that could reenergize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally energized by the device.

(iii) ***Application of Locks and Tags;***

A. A lock and a tag shall be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed, except as provided in paragraphs (b) (2) (iii) (C) and (b) (2) (iii) (E) of this section. The lock shall be attached so as to prevent persons from operating the disconnecting means unless they resort to undue force or the use of tools.

B. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means and removal of the tag.

C. If a lock cannot be applied, or if the employer can demonstrate that tagging procedures will provide a level of safety equivalent to that obtained by the use of a lock, a tag may be used without a lock.

D. A tag used without a lock, as permitted by paragraph (b) (2) (iii) (C) of this section, shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

E. A lock may be placed without a tag only under the following conditions;
(1) Only one circuit or piece of equipment is de-energized, and
(2) The lockout period does not extend beyond the work shift, and
(3) Employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure.

(iv) ***Verification of De-energized Condition.*** The requirements of this paragraph shall be met before any circuits or equipment can be considered and worked as de-energized.

A. A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted.

B. A qualified person shall use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are de-energized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been de-energized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment shall be checked for proper operation immediately before and immediately after this test.

(v) ***Reenergizing Equipment.*** These requirements shall be met, in the order given, before circuits or equipment are reenergized, even temporarily.

A. A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.

B. Employees exposed to the hazards associated with reenergizing the circuit or equipment shall be warned to stay clear of circuits and equipment.

C. Each lock and tag shall be removed by the employee who applied it or under his or her direct supervision. However, if this employee is absent, then the lock or tag may be removed by a qualified person designated to perform this task provided that:
(1) the employer ensures that the employee who applied the lock or tag is not available, and
(2) the employer ensures that the employee is aware that the lock or tag has been removed before he or she resumes work at the workplace.

D. There shall be a visual determination that all employees are clear of the circuits and equipment.

APPENDIX B

TAGOUT PROCEDURES

A. When a disconnecting means or other energy isolating device is incapable of being locked out, a tagout systems shall be utilized. A tag used without a lock, shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock such as opening an additional disconnecting device, removal of an isolating circuit element, blocking of a controlling switch or the removal of a valve handle to reduce the likelihood of inadvertent energization.

B. Only tags which meet the requirements of 1910.147 (c) (5) (ii) and (iii) shall be used.

C. **All** employees working at job sites shall be trained in the use and limitations of tags as described in 1910.147 (c) (7) (ii) and (d) (4) (iii).

D. **All** employees working at job sites must be able to understand the hazard warning written on the tags such as: DO NOT START; DO NOT OPEN; DO NOT CLOSE; DO NOT ENERGIZE; and DO NOT OPERATE.

E. On machines and equipment where tagout is used in lieu of lockout, the periodic inspection required by 1910.147 (c) (6) shall include the **affected** as well as the **authorized** employee(s). The periodic inspection shall be certified on **Appendix F.**

F. If tagout is used, all other lockout rules and procedures apply.

NOTE: Should the machine/equipment require upgrade or modification, it will have lockable switches, fittings, valves, etc. added so that it becomes possible to lockout.

APPENDIX C

LOCKOUT/TAGOUT TRAINING

The items listed below are the minimum training requirements for topic:

- **Explanation of the OSHA standard CFR 29 1910.147**
- **Authorized employees**
- **Affected employees**
- **UNDERSTANDING energy SOURCES:** Electrical, Pneumatic, Hydraulic, Fluid & Gases, Thermal, Water under pressure, Gravity, & Mechanical
- **SIX TYPES OF ENERGY:** Electric, Hydraulic, Kinetic, Pneumatic, Potential, Thermal
- **LOTO PROCEDURES:** Preparation and Notification, Shut down the Equipment, Isolate the Equipment, Attach the Lock & Tag, Release any Stored Energy, Verify that all energy has been Released or Controlled by Testing Equipment
- **START-UP PROCEDURES:** Prepare for startup, Remove Tags & Devices, Notify Affected Employees
- **SPECIAL SITUATIONS**
- **PERIODIC EVALUATION OF PROGRAM**

APPENDIX D

AIRCORPS AVIATION
- FORMS -

ENERGY SOURCE EVALUATION

Date: **Conducted By:**

In order to determine all energy sources for each piece or type of equipment, fill in the following table.

Location: **Work Center:**

Equipment Name:

Model: **Serial #**

Lockout Procedure Number:

Energy Source/*Magnitude	Location(s) of Isolating Device(s)	Means of Isolation
ELECTRICAL		
ENGINE		
SPRING		
COUNTER WEIGHT		
FLYWHEEL		
HYDRAULIC		
PNEUMATIC		
CHEMICAL		
THERMAL		
OTHER		

****MAGNITUDE Example - ELECTRICAL = 480V three phase - PNEUMATIC = 125 psi.***

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APPENDIX E

AIRCORPS AVIATION
- FORMS -

LOCKOUT TAGOUT PROCEDURE FORM

Equipment:	**File name:**
Location:	**Energy Sources: (1)** **(2)** **(3)** **(4)**
Failure to utilize the lockout procedure will result in disciplinary action. Unauthorized removal of a lock could result in discharge.	
LOCKOUT STEPS **1.** Know the types and magnitudes of hazardous energy. **2.** Shut down the equipment **3.** Isolate the equipment from hazardous energy. **4.** Apply the lockout tagout procedures. **5.** Relieve stored energy. **6.** Verify isolation, try to start the equipment	**RELEASE FROM LOCKOUT** **1.** Remove non-essential materials. **2.** Make sure all employees are safely positioned and notified. **3.** Remove locks. Locks may only be removed by their owners. **4.** If exceptions, your supervisor must be contacted.
Specific Lockout Steps	
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12	
13.	
14.	
15.	

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APPENDIX F

AIRCORPS AVIATION
- FORMS -

PERIODIC INSPECTION CERTIFICATION

Facility: **Date:**

Evaluator Name: **Title:**

Describe the job being evaluated:

Names of persons working on the job:	Check the persons being interviewed
1.	☐
2. .	☐
3.	☐
4.	☐
5.	☐
6.	☐
7.	☐
8.	☐

	Yes	No	Comments
Did authorized employees understand their responsibilities under the Lockout/tagout Program?	☐	☐	
Were locks and tags in place?	☐	☐	
Were affected employees notified?	☐	☐	
Was the Lockout/Tagout checklist completed?	☐	☐	
Were all company safety procedures being followed?	☐	☐	

APPENDIX G

AIRCORPS AVIATION
- FORMS -

EMPLOYEE HAZARD EVALUATION

Employee(s) Exposed to Hazard:				
Machine/Equipment on which the task is being performed:				
Servicing/Maintenance Task Being Performed:				
Frequency in which the employee performs the task	Times:		Per:	
Duration for which the employee has performed the task:	Amount:	☐ Hour	☐ Day	☐ Week
Hazard(s) to which the employee is exposed when performing this task:				
Caught in:			Crushed by:	
Struck by:			Thrown from:	
Contact With:			Other:	
Energy Source which exposes the employee to a hazard:				
☐ Electrical	☐ Engine		☐ Spring	☐ Counter Weight
☐ Flywheel	☐ Hydraulic		☐ Pneumatic	☐ Chemical
☐ Thermal	☐ Other (list):			
Magnitude of the Energy Source:				
☐ Volts	☐ Phase	☐ PSI	☐ Deg. F	☐ Tons
Potential Injury Associated With the Improper Isolation of Energy:				
☐ Crushing	☐ Fracture	☐ Amputation	☐ Laceration	☐ Puncture
☐ Burns	☐ Death	☐ Air Embolism	☐ Other	☐ Electric Shock
Means of Isolating the Energy Source (Procedures Used): If tagout is used see 1910.147(c)(3)(ii))				
Location:				
Methods:				
Hazards Discussed with the Exposed Employee(s) By:				
Supervisor:		Date:		

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APPENDIX H

AIRCORPS AVIATION
- FORMS -

LOCKOUT/TAGOUT RECORD SHEET

Person Performing Lockout/Tagout:		**Date/Time:**	
System or Component:		Log Serial No.	
Reason for Lockout/Tagout:			
Personnel/Equipment Hazards Involved:			
Work Necessary to Clear Locks/Tags (include tests, inspections, QA, etc.)			

INFORMATION SECTION

Tag-Lock Number	Location (Where tag/lock is attached)	Lock/Tag Position Instructions	Supervisor's Verification of Location and Position	Clearance Authorization		Date/Time Cleared	Cleared By:
				Supervisor's Verification of work Complete	Supervisor's Authorization to Clear Tag/Locks		

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APPENDIX I

AIRCORPS AVIATION
- FORMS -

LOCKOUT CHECKLIST

Step 1: Before Beginning to Service Equipment	Yes	No	N/A
Have the type and amount of energy source on the equipment been identified?	☐	☐	☐
Have the possible dangers related to the energy source being controlled been identified?	☐	☐	☐
Are the steps necessary to control the energy source understood?	☐	☐	☐
Have affected employees been notified when the equipment will be shut off for service?	☐	☐	☐
Step 2: Shut Down Equipment	**Yes**	**No**	**N/A**
Have the company's safety procedures been followed?	☐	☐	☐
Have the Manufacturer's instructions been referred to?	☐	☐	☐
Step 3: Isolate the Machine or Equipment	**Yes**	**No**	**N/A**
Has the main breaker or control switch been shut off?	☐	☐	☐
Have valves been closed?	☐	☐	☐
Have process lines been disconnected?	☐	☐	☐
Step 4: Attach Lock and Tag	**Yes**	**No**	**N/A**
Have the lock and tag been attached?	☐	☐	☐
Step 5: Control Stored Energy	**Yes**	**No**	**N/A**
Has the electrical capacitance been bled?	☐	☐	☐
Have pressure or hydraulic lines from the work area been vented or isolated?	☐	☐	☐
Are switches or levers that could be moved into the start position blocked, clamped or chained?	☐	☐	☐
Are lines containing process materials that are toxic, hot, cold, corrosive or asphyxiating cleared?	☐	☐	☐
Step 6: Verify That the Energy State is at Zero	**Yes**	**No**	**N/A**
Have the start switches on the equipment been tested?	☐	☐	☐
Have pressure gauges been checked to insure that lines are depressurized?	☐	☐	☐
Are blocks or cribs secured?	☐	☐	☐
Have electrical circuits been checked to verify that voltage is at zero energy?	☐	☐	☐
Are blanks, used to blockfeed chemicals, secure and not leaking?	☐	☐	☐
Step 7: If you have answered Yes to the above steps, begin working.			

AIRCORPS AVIATION
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SAFE START UP CHECKLIST

Step 1: Inspect the Area	Yes	No	N/A
Are all machine components operational?	☐	☐	☐
Are all safety guards in place?	☐	☐	☐
Have all tools been removed from the machine?	☐	☐	☐
Have all braces, pins, blocks and chins been removed?	☐	☐	☐
Are all pressure tubing, pipes, and hoses connected with valves closed?	☐	☐	☐
Is the work area clear for mechanical operation?	☐	☐	☐
Step 2: Remove Lockout Devices and Tags	☐	☐	☐
Step 3: Notify Affected Employees	**Yes**	**No**	**N/A**
Is the work area cleared before starting up the equipment?	☐	☐	☐
Has the servicing been completed and the locks and tags removed?	☐	☐	☐
Step 4: If you answered Yes to all the above, start up the equipment			
Comments:			

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