

LOCKOUT PROCEDURE

**CEM Machine & Carpentry Shops
College of Engineering & Mines
Duckering 109-110**

PURPOSE:

This procedure establishes the minimum requirement 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 when the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

COMPLIANCE:

- ❑ **All employees and students** are required to comply with the restrictions and limitations imposed upon them during the use of lockout. Lockout procedures are only to be conducted by authorized employees.
- ❑ **All employees and students**, 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.***

Per University Regulation R05.09.040E, the disregard of legal or risk management and environmental health and safety requirements can result in disciplinary action.

LOCKOUT SEQUENCE:

- 1) The CEM Machine and Carpentry Shop authorized employees* will verbally notify all affected employees and students that the equipment/machine requires servicing or maintenance and that the equipment/machine must be shut down, isolated from electrical service, or locked out before the servicing or maintenance can begin.
- 2) The CEM Machine and Carpentry Shop authorized employees shall refer to this procedure and Appendix 1 to identify the type and magnitude of the energy that the machine/equipment utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy. The type(s) and magnitude(s) of energy, its hazards and the method(s) to control the energy are identified in Appendix 1 to this procedure
- 3) If the equipment or machine is operating, shut it down by its normal stopping procedure. The type(s) and location(s) of machine/equipment operating controls are identified in Appendix 1 to this procedure.
- 4) Deactivate the energy isolating device(s) to isolate energy source(s) from the equipment or machine. The type(s) and location(s) of energy isolating devices are identified in Appendix 1 to this procedure. For cord and plug equipment located in Duckering 109 or 110, the CEM Machine and Carpentry Shop authorized employees will unplug equipment from electrical outlets prior to servicing and maintain exclusive control of the plug. During circumstances in

which the exclusive control of the plug cannot be maintained, the CEM Machine and Carpentry Shop Authorized Employees will utilize lock out devices to isolate the device. For the isolation of hard-wired equipment served by breakers maintained by UAF Facilities Services, the Machine Shop Supervisor will notify the Facilities Services Electric Shop to request lockout by authorized employees.

5) Stored or residual energy (i.e. capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam, or water pressure, etc.) must be relieved, dissipated, or restrained by appropriate methods such as grounding, bleeding down, blocking, repositioning, etc. The type(s) of stored energy and the method(s) to dissipate or restrain are identified in Appendix 1 to this procedure.

6) Ensure that the equipment/ machine is disconnected from the energy source(s) by first, checking that no personnel are exposed, then verify the isolation of the equipment/machine by operating the normal operating control(s), or by testing to make certain the equipment will not operate.

CAUTION: Return operating control(s) to the neutral or “off” position after verifying the isolation of the equipment or machine.

THE EQUIPMENT OR MACHINE IS NOW LOCKED OUT!

SEQUENCE FOR RESTORING EQUIPMENT OR MACHINE TO SERVICE:

After servicing or maintenance to equipment or machinery is completed, the following steps shall be taken to return it back to its normal operating condition.

1) Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.

2) Check the surrounding work area to ensure that all employees have been safely positioned or removed from the area.

3) Verify that the controls are in the neutral or “off” position.

4) Remove the lockout devices.

NOTE: Removing some types of blocking may require re-energization of the machine before the lockout devices can be safely removed.

5) Notify all affected employees and students that the servicing or maintenance is completed and the equipment or machine is ready for operation.

6) Reenergize the equipment or machine.

CEM Machine and Carpentry Shop Authorized Employees:

Eric Johansen, Shop Supervisor
Joe Michalski, Asst. Shop Supervisor

Cord and Plug Connected Electrical Equipment:

1910.147(a)(2)(iii)(A) Work on cord and plug connected electrical equipment for which exposure to the hazards of unexpected energization or start up of the equipment is controlled by unplugging the equipment from the energy source and by the plug being in the exclusive control of the employee performing the service or maintenance. The machines/equipment that are unplugged prior to servicing or maintenance are identified in Appendix 1 to this procedure.

Periodic Inspection:

1910.147(c)(6) Periodic Inspection. The employer shall conduct a periodic inspection of the energy control procedure at least annually to ensure that the procedure and the requirements of this standard are being followed. 1910.147(c)(6)(i)(A) The periodic inspection shall be performed by an authorized employee other than the one(s) utilizing the control procedure being inspected.