APPENDIX B:
EQUIPMENT SPECIFIC LOTO PROCEDURE DEVELOPMENT FORM

UNC Department: Facilities Services
Equipment: Air Handlers Equipment Location: Campus Wide
Task: Performance Maintenance (Changing and replacing filters and fan belts)
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Date:08/28/2009

Purpose

This procedure establishes the minimum requirements for the lockout of energy isolating devices whenever maintenance or servicing is done on machines or equipment.

Compliance with This Procedure

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout.

Lockout Tagout Sequence

1. Identify all energy sources.

Energy Source	Magnitude	Location	Control Method
Electrical	120 to 180 Volts	Electrical panel for fan motor or VFD control panel	Lockout/Tagout
Thermal	>120 °F	Fan coils, direct steam humidification	Lockout/Tagout
Pneumatic	psi		
Hydraulic	psi		
Mechanical	Varies rpm, hp	Fan blades	Mechanical block
Chemical			
Gravity			
Radiation			

2. List the personnel who must be notified prior to equipment shutdown.

(1) Other employees working in the mechanical room or vicinity of lockout activity.
(2)
(3)
(4)
(5)

3. Shut down the equipment by the normal stopping procedure (list below).

(1) Turn off the control circuit power to the variable frequency drive (VFD) or the electrical panel using one the following methods:
a. Local computer to remotely turn off;
b. Call Energy Management Controls System (EMCS) to remotely turn off; or
c. Manually turn off by:
i. Pressing the "Off/Stop" button on the VFD; or
ii. Turn the control switch on the electrical panel to the "Off" position.
(2) Shut off the hot water valves and drain residual water, if there is potential for contact with fan coils where the inlet water temperature is greater than 120°F. Also, shut off the hot water valves if the air temperature is greater than 100°F in the fan section.
(3)
(4)
(5)

4. List the procedures for disconnecting each energy source.

(1) Throw the disconnect or turn the disconnect switch to the "Off" position to isolate the main power source.
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)

5. Lockout and tagout the energy isolating device with an assigned individual lock and tag.

6. List the procedures for dissipating or restraining residual or stored energy.

(1) Use a block to restrain the fan blades to prevent movement caused by pressure changes in the ductwork.
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)

7. List the procedures for verifying the isolation by attempting to restart the equipment.

(1) Press the "Hand/Start" button on the VFD, turn the control switch to the "Hand" position, or press the local "Start/Stop" button.
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
(10)

8. The equipment is now locked out. Perform the work.

Restoring Equipment to Service

9. Ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.

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

11. Verify that the control circuit is in the "Off" position.

12. Remove the lockout devices and reenergize the machine or equipment by switching the main power disconnect to the "On" position.

13. Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

14. Activate the control circuit.