



**Control of Hazardous Energy Plan
(Lockout/Tagout)**

Chapter 296-803 WAC

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CBC CONTROL OF HAZARDOUS ENERGY PLAN (LOCKOUT/TAGOUT)

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**COLUMBIA BASIN COLLEGE
CONTROL OF HAZARDOUS ENERGY PLAN (LOCKOUT/TAGOUT)**

I. CONTROL OF HAZARDOUS ENERGY PLAN OVERVIEW

It is the practice of Columbia Basin College (“CBC” or the “College”) that machines or equipment shall be completely isolated from all energy sources and made inoperative during maintenance or service when unexpected energizing, start-up, or release of stored energy could occur and cause injury. This plan explains the lockout/tagout procedure and practices to be used by employees who perform maintenance or service on machinery and equipment in order to prevent the accidental release of hazardous energy. This plan also lists training requirements for employees and a method the College will use to ensure the plan and its practices are being used and are up-to-date. This plan was written to conform to the requirements of Chapter 296-803 WAC.

The unexpected release of energy from devices which may store energy (e.g., springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure, etc.) has the potential to cause harm to individuals working on the device. All such devices must be constrained from unexpected releases (locked out) and tagged with appropriate warnings (tagged out). This will be accomplished by attaching the appropriate lockout devices and information tags, to energy isolating devices and otherwise disabling the machine or equipment following specific written lockout/tagout procedures contained in this plan. No employee shall attempt to start or use any machine or equipment, which is locked out and tagged. Any employee who fails to follow the standard practices will be subject to the disciplinary procedures of the College and in accordance with applicable collective bargaining agreement, civil service, and other rules or regulations.

II. DEFINITIONS

Affected employee: An employee who is required to operate, use or be in the area where a machine or equipment could be locked or tagged out for service or maintenance.
Authorized employee: An employee who locks or tags out a machine or equipment to do service or maintenance.
Can be locked out: An energy-isolating device that can be locked in the “off” or “safe” position.
Energized: Connected to an energy source or containing residual or stored energy.
Energy-isolating device: A mechanical device that physically prevents transmitting or releasing energy. This includes, but is not limited to: manually operated electrical circuit breakers, disconnect switches, manually operated switches that disconnect the conductors of a circuit from all ungrounded supply conductors if no pole of the switch can be operated independently, line valves, blocks, and similar devices used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy-isolating devices.
Energy source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy, including gravity.
Hot tap: A procedure which involves welding on pressurized pipelines, vessels, or tanks to install connections or accessories. It is commonly used to replace or add sections of pipeline used in air, gas, water, steam, and petrochemical distribution systems without interrupting service.
Lockout: Placing a lockout device on an energy-isolating device using an established procedure to make sure the machine or equipment cannot be operated until the lockout device is removed.
Lockout device: A device that uses a positive means, such as a key or combination lock, to hold an energy-isolating device in the “safe” or “off” position. This includes blank flanges and bolted slip blinds.
Normal production operations: Using a machine or equipment for its intended production function.

<p>Primary authorized employee: An authorized employee who has overall responsibility for meeting the requirements of the lockout/tagout plan. The Director of Plant Operations is the College’s primary authorized employee for this plan.</p>
<p>Service and maintenance: Activities such as constructing, installing, setting-up, adjusting, inspecting, modifying, maintaining, and servicing machines or equipment. It also includes lubricating, cleaning, unjamming, and making tool changes.</p>
<p>Setting-up: Work done to prepare a machine or equipment for normal production operations.</p>
<p>Tagout device: A prominent warning device, such as a tag and a means of attachment. It can be securely fastened to an energy-isolating device to indicate that the energy-isolating device and the machine or equipment being controlled may not be operated until the tagout device is removed.</p>
<p>Tagout/Information tag: Tags must always be used to provide the required information at each lockout point on the machine or equipment. The tag is designed to withstand any conditions in this workplace that might cause it damage. The tag must be used with a non-reusable self-locking cable tie or equivalent method that will withstand 50 pounds before failing.</p>

III. AUTHORIZATION AND RESPONSIBILITY

See [Appendix 1 – Control of Hazardous Energy Plan Responsibility Matrix.](#)

A. Authorized Employees

Authorized employees are the only employees designated to perform lockout/tagout. A list of currently trained and authorized employees is maintained by the Plant Operations Office.

B. Supervisors

Supervisors of affected personnel shall be responsible for implementing and abiding by the Lockout/Tagout Plan for employees and work under their purview.

C. Employees

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. All employees shall comply with the restrictions and limitations imposed upon them during the use of lockout/tagout.

IV. LOCKOUT/TAGOUT APPLICATION (WAC 296-803-300)

Lockout and tagout device will be affixed to energy-isolating device by authorized employees. Figure 1 below is an example of the locks and tags used here at the College. Lockout/tagout mobile stations are carried by authorized employees. Other energy-isolating devices for specific types of equipment will be maintained by the Plant Operations Office.

Figure 1: Lockout/Tagout Station



The Plant Operations Office will ensure that all disconnects and valves are clearly labeled unless they are located and arranged so their purpose is evident. The labeling shall include equipment supplied, and energy type and magnitude.

The College will ensure energy-isolating devices designed to accept a lockout device are provided on machines and equipment that are newly installed, and have undergone major replacement, repair, renovation or modification after July 2, 1990.

V. MEANS TO CONTROL HAZARDOUS ENERGY (LOCKOUT VS. TAGOUT)

This section identifies situations in which a lockout and tagout must be used and possible exemptions.

A. Lockout

Lockout shall be used, as prescribed, whenever an energy-isolating device is capable of being locked out (unless it can be demonstrated that the utilization of a tagout system will ensure full employee protection).

There must be a single energy source that can be easily identified and isolated with a single lockout device that is controlled only by the authorized employee(s). For example, an electrical lockable disconnect switch adjacent to the machine or equipment represents such a case.

B. Tagout

If an energy-isolating device is not capable of being locked out, a tagout system is to be utilized, if the following items are applicable:

- Has no stored, leftover, or re-accumulated energy potential (such as flywheels, capacitors, springs, static electricity, or udder dies of press brakes);
- Does not create hazards for other employees when serviced; and
- Has not had an accident in connection with service or maintenance.

C. Exemptions

No lockout or tagout is required for the following:

Electric Cord and Plug-Connected Equipment: When the hazards of unexpected energization or startup are controlled by unplugging the equipment, and the authorized employee maintains exclusive control of the plug while performing the service or maintenance.

Direct-Wired Electric Equipment: When the hazard of unexpected energization is controlled by the operation of a switch or circuit breaker on the equipment itself, and the operation of the switch or circuit breaker is under the exclusive control of the employee performing the maintenance service.

Hot Tap Operations Involving Transmission/Distribution Systems: Gas, steam, air, or water provided continuity of service is essential, shutdown is impractical, documented procedures are followed, and protective equipment is used.

VI. GENERAL PROCEDURES

A. Lockout Procedure

Step 1 Prepare for Lockout

- The authorized employee will identify the type and magnitude of the energy that the machine or equipment uses, understand the hazards of the energy, and the methods to control the energy before using this procedure.
- This may require that a survey be made to locate and identify all isolating devices to be certain which switch(s), valve(s), or other energy-isolating devices apply to the equipment to be locked out or tagged out. (See [Appendix 2 – Equipment Lockout Work Plan](#))
- More than one energy source (electrical, mechanical, or others) may be involved. Or, if there are other conditions, such as different connecting means, or a particular sequence that must be followed to shut down the machine or equipment, then a separate, machine or equipment-specific, written energy control procedure must be developed.

Step 2 Notify all affected employees via appropriate method (i.e., direct contact, e-mail, memo, safety meeting, text message, etc.) that the machine or equipment is going to be shut down and locked out for service or maintenance.

Step 3 Shut down the machine or equipment by the normal stopping procedure (e.g., depressing a stop button, open switches).

Step 4 Deactivate the energy-isolating device so that the machine or equipment is isolated from the energy source.

Step 5 Each authorized employee working on the equipment shall apply his/her lock and information tag to the energy-isolating device.

Step 6 Dissipate or restrain stored and residual energy, such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure, using methods such as grounding, repositioning, blocking, or bleeding down.

Step 7 Authorized employee will verify that the machine or equipment is disconnected from the energy source by first checking that no employees are exposed, then operating the normal controls or otherwise testing to ensure that the machine or equipment will not operate.

[CAUTION: Return all operating controls to the safe, neutral or ‘off’ position after verifying the isolation of the equipment.]

Step 8 The equipment is now locked out. If it is necessary at any time to temporarily energize the equipment for testing or positioning purposes, then use the following steps:

- Clear the equipment of all tools, materials, and employees;
- Authorized employee removes lockout device(s);
- Energize and proceed with testing or positioning;
- De-energize the equipment and reapply the lockout device(s) using the procedure steps above immediately after testing or positioning.

B. Tagout Procedure

Lockout is the College's preferred procedure. The tagout procedure follows the same steps as above, but requires an extra step in de-energizing the machine or equipment to compensate for the lack of a lock on the energy source. Extra steps might include removing a component such as wiring connections, blocking a switch, opening an extra switch or removal of a valve handle to reduce the likelihood of accidental activation. These machines or equipment will be provided with lockable energy-isolating devices as the future need arises for major repair, replacement, modification, or relocation of the machine or equipment.

- Tags must be legible and understandable by all employees who may come across them in order to be effective.
- Tags and their means of attachment must be made of materials that will withstand the environmental conditions in which they are used.
- Tags must be securely attached to energy-isolating devices so that they cannot accidentally fall or be pulled off.
- Tags may evoke a feeling of false security. The authorized employee should periodically check that employees understand that a tag has been placed and that the tag is still properly attached and visible.

Employees are cautioned that:

- Tags are warning devices and do not provide the physical restraint that is provided by a lock.
- When a tag is attached to an energy-isolating device, it is not to be removed without permission of the authorized employee responsible for it, and it is never to be bypassed, ignored, or otherwise defeated.

C. Removing Lockout and Tagout Devices

The authorized employee will restore the machine or equipment to service after the service or maintenance is completed and the machine or equipment is ready to return to its normal operating condition by performing the following steps:

- Step 1** → Inspect the work area to make sure that all tools and materials have been removed and that all guards are in place.
- Step 2** → Check that all employees are safely out of the way.
- Step 3** → Verify that the normal operating controls are in the 'off' position.
- Step 4** → Each authorized employee removes his/her lockout device and information tag.

In the event the authorized employee who applied a lock and tag is not present to remove it, the following process shall be followed if the lock and tag must be removed:

- Contact the Director of Plant Operations who, as the primary authorized employee, will ensure that the authorized employee whose lock and tag must be removed is not on campus.
- The Director of Plant Operations will attempt to contact the authorized employee. If contact is made, the authorized employee will be asked to return to remove the lock and tag.
- The Director of Plant Operations shall remove the lock and tag only when all reasonable efforts have been made to contact the authorized employee.
- The Director of Plant Operations shall ensure that the authorized employee has been informed before resuming work at the workplace that the lock and tag was removed.

Step 5 → Re-energize the equipment.

Step 6 → Notify any affected employee that the servicing or maintenance is complete and that the equipment is ready for use.

These procedures are also outlined in [Appendix 3 – General Procedures Lockout/Tagout Checklist](#) for easy reference.

D. Group Lockout and Tagout

When servicing and maintenance is performed by a crew, craft, department or other group, they will utilize a procedure which affords each employee a level of protection equivalent to that provided by the implementation of a personal lockout and tagout device.

E. Shift or Personnel Changes

When the servicing or maintenance of a machine or equipment takes longer than a single shift, the appropriate control measure and thorough communication shall be used:

- If control does not need to be transferred to a new work crew, then the locks and tags of the authorized employee(s) shall remain on the energy isolating devices to protect against accidental activation of the machine or equipment by other employees while the authorized employees are away; and
- If control must be passed on to a crew on the following shift, then the incoming crew shall review the appropriate lockout/tagout procedure with the outgoing crew and at each point where a lock and tag must be placed, the outgoing crew will remove their locks/tags and the incoming crew will attach theirs.

F. Outside Contractors

Whenever an outside contractor does work at this workplace which requires the use of a lockout procedure, CBC and the contractor will exchange information about the lockout/tagout plans of each organization. The College will also inform its authorized and affected employees about any differences in the procedures of the two organizations that might cause confusion. It is the responsibility of the

outside contractor to ensure that its employees comply with the restrictions and prohibitions of the lockout/tagout procedures of the College.

VII. TRAINING

Training shall be provided to ensure that the purpose and function of the Lockout/Tagout Plan is understood by employees affected by the plan and that the knowledge and skills required for the safe application, usage, and removal of lockout/tagout devices are understood by these employees. This training will include the following elements:

- Each authorized employee will be trained to recognize the types and magnitudes of energy used at his/her workplace along with the methods of isolation and control as described in this Plan, the particular written lockout/tagout plan that the employee will use, and the requirements of Chapter 296-803 WAC.
- Each affected employee will be instructed in the purpose and use of the lockout/tagout procedure.
- All other employees whose work may take them into an area where lockout is in progress will be instructed about the procedure and prohibited from attempting to start or operate machinery or equipment that is locked or tagged out.

Retraining will be provided for all authorized and affected employees whenever there is a change in their job assignment, machines, equipment or processes that presents a new hazard, or when there is a change in lockout/tagout procedures.

Additional retraining shall also be conducted whenever a periodic inspection reveals, or whenever the College has reason to believe, that there are deviations from or inadequacies in the employee's knowledge or use of the lockout/tagout procedures. The retraining will re-establish employee proficiency and introduce new or revised control methods and procedures as necessary.

VIII. PERIODIC REVIEWS

The CBC ES&H Committee designee will conduct annual inspections of the written Lockout/Tagout Plan to ensure that each procedure is being followed and provides adequate protection for employees. Any changes to the Plan, or deviations or inadequacies observed during the use of the procedures, must be corrected in a reasonable time frame agreed upon by the ES&H Committee and the primary authorized employee.

IX. LIST OF APPENDICES

[Appendix 1 – Control of Hazardous Energy Plan Responsibility Matrix](#)

[Appendix 2 – Equipment Lockout Work Plan](#)

[Appendix 3 – General Procedures Lockout/Tagout Checklist](#)

**COLUMBIA BASIN COLLEGE
CONTROL OF HAZARDOUS ENERGY PLAN RESPONSIBILITY MATRIX**

Responsibility	Departments	ES&H Committee	HR ES&H Consultant	Employee
Control of Hazardous Energy Plan	Comply with the provisions of the plan and WAC/WISHA requirements.	Develop and implement a Control of Hazardous Energy Plan for the impacted college community. Comply with the provisions of the plan and WAC/WISHA requirements. Serve as custodian of the written plan.	Comply with the provisions of the plan and WAC/WISHA requirements.	Understand and comply with the provisions of the plan and the protection afforded by WISHA.
Lockout/Tagout (LOTO) Application	Ensure that standard precautions are understood and executed by authorized employees in the application of LOTO.	Promote practices, procedures, and methods for LOTO application that comply with the plan.	Advise campus community in proper LOTO application procedures.	Notify supervisor and ES&H if job tasks and responsibilities present occupational exposure concerns that have not been previously identified.
Training	Ensure employees receive training in proper tools, equipment and procedures.	Provide training recommendations to the HR ES&H Consultant.	Develop and implement training on proper LOTO procedures. Maintain training records for employees.	Participate in all required training.
Periodic Reviews	Evaluate reported hazards and suggest improvements in processes to reduce preventable hazards.	Conduct an annual review of the plan to ensure it is up to date with any changes in WAC requirements.	Provide necessary support to departments and ES&H Committee in conducting periodic reviews.	Regularly report hazards and suggest improvements in processes to reduce preventable hazards.

**COLUMBIA BASIN COLLEGE
EQUIPMENT LOCKOUT WORK PLAN**

Name/Identification of Machine or Equipment:
Location of Machine or Equipment:
Work Scope:
Contact Person:

ENERGY FLOW TO BE CONTROLLED (Check all that apply)			
<input type="checkbox"/> Steam	<input type="checkbox"/> Natural Gas	<input type="checkbox"/> Moving Parts	<input type="checkbox"/> Chemicals
<input type="checkbox"/> Electric Power	<input type="checkbox"/> Pressurized Gas	<input type="checkbox"/> Pneumatic	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Control Power	<input type="checkbox"/> Water	<input type="checkbox"/> Hydraulic	<input type="checkbox"/> Other: _____

LOCKOUT CHECKLIST
<input type="checkbox"/> Complete an Equipment Lockout Plan <input type="checkbox"/> Identify all energy sources <input type="checkbox"/> Notify affected employees <input type="checkbox"/> Shut down machine or equipment by normal stopping procedure <input type="checkbox"/> Isolate machine or equipment from the energy source <input type="checkbox"/> Apply lockout device(s) <input type="checkbox"/> Reduce equipment to a zero-energy state <input type="checkbox"/> Test and verify equipment isolation <input type="checkbox"/> Perform task <input type="checkbox"/> Notify Supervisor when equipment is available for service <input type="checkbox"/> Return all lockout devices to proper storage

LOCKOUT POINTS					
<u>Hazard</u>	<u>Action Required</u>	<u>Lock #</u>	<u>Name</u>	<u>Lock On</u>	<u>Lock Off</u>

**COLUMBIA BASIN COLLEGE
GENERAL PROCEDURES LOCKOUT/TAGOUT CHECKLIST**

STEPS TO APPLY LOCKOUT/TAGOUT	
STEP	ACTION
1.	<input type="checkbox"/> Prepare for shutdown. <input type="checkbox"/> Identify all energy sources. <input type="checkbox"/> Ensure all isolating devices will accept lockout/tagout devices. <input type="checkbox"/> Gather necessary tools, equipment. <input type="checkbox"/> Identify any supporting equipment or systems that must also be shutdown.
2.	<input type="checkbox"/> Notify all affected employees. Indicate source: _____ <i>(e.g., direct contact, e-mail, memo, safety meeting, text message, etc.)</i>
3.	<input type="checkbox"/> Shut down machine or equipment by normal stopping procedure. Note: Use an orderly shutdown to avoid additional hazards.
4.	<input type="checkbox"/> Deactivate the energy-isolating device so that the machine or equipment is isolated from the energy source.
5.	<input type="checkbox"/> Apply lockout locks and tags.
6.	<input type="checkbox"/> Dissipate or restrain stored and residual energy.
	<input type="checkbox"/> Release, restrain, block, disconnect, or otherwise render residual or stored energy safe.
	<input type="checkbox"/> Use energy drains (drain pressurized lines, free-wheeling shafts, active ground) whenever possible.
	<input type="checkbox"/> If energy can re-accumulate during shutdown, continually verify a safe energy level until lockout/tagout is removed.
7.	<input type="checkbox"/> Physically verify energy isolation by operating controls or measuring the energy state (use a meter to verify zero energy per NFPA 70E Article 120, operate the startup controls). Note: If the worksite has been left unattended, repeat Step 6 and verify the integrity of locks and tags (against tampering) before continuing work.
8.	<input type="checkbox"/> Perform work.
STEPS TO REMOVE LOCKOUT/TAGOUT	
STEP	ACTION
1.	<input type="checkbox"/> Inspect the work area to make sure that all tools and materials have been removed and that all guards are in place.

2.	<input type="checkbox"/>	Check that all employees are safely out of the way.
3.	<input type="checkbox"/>	Verify that the normal operating controls are in the ‘off’ position.
4.	<input type="checkbox"/>	Each authorized employee removes his/her lockout device and information tag. Note: In the event the authorized employee who applied a lock or tag is not present to remove it, please contact the Director of Plant Operations for direction on how to proceed.
5.	<input type="checkbox"/>	Re-energize the equipment.
6.	<input type="checkbox"/>	Notify all affected employees that the servicing or maintenance is complete and that the equipment is ready for use.

TAGOUT ONLY (NOT RECOMMENDED)

STEP	ACTION
1.	<input type="checkbox"/> Follow steps above for LO/TO but add the additional step (Step 2 below) in preparation.
2.	<input type="checkbox"/> De-energize machine or equipment to compensate for the lack of a lock on the energy source. Note: Use extreme caution, tags are warning devices and do not provide the physical restraint that is provided by a lock.

Authorized Employee’s Signature:	Date:
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