

EHS SAFETY POLICY

Subject: Initial Line Breakage & Equipment Opening Policy	Doc ID: #34494	Page 1 of 11
Effective: 08/02/19	Document Owner: Safety Manager	Approved By:

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I. POLICY & SCOPE

It is the policy of the Quinnesec Mill that, as a condition of employment, all individuals involved in initial line breakage and equipment opening, for any reason, shall comply with the Initial Line Breakage Policy. This policy will be applied throughout the mill by all vendors, contractors, and members.

When lines, pumps, vessels, tanks, or any other equipment are opened and/or disassembled for the first time after use or at any time thereafter when the potential exists for injury due to the possible contents of the line or equipment, the Initial Line Breakage & Equipment Opening Policy shall apply. If the closed system is a vessel or tank opened for the purpose of entry, the Confined Space Policy shall also apply.

II. INTENT/PURPOSE

It is the purpose of this policy to prevent personal injuries to mill members and others when disassembling lines, pumps, or any other equipment which contains or may contain hazardous materials and/or hazardous conditions.

III. DEFINITIONS

Automated Isolation Valves - Any valve designed for the purpose of isolation and actuated by any means other than a hand wheel or handle.

Confined Space - Any space which meets all of the following criteria: 1) is large enough and so configured that a human can bodily enter and perform assigned work; and 2) has limited or restricted means for entry or exit; and 3) is not designed for continuous human occupancy. In addition to the above three items, a confined space also contains recognized serious safety or health hazards.

Control Valve - Any valve used in the process for control that may be actuated automatically in response to process changes.

Hazardous Material - Any substance or mixture of substances having properties capable of producing hazardous effects on the health or safety of a human. Typical materials considered hazardous: (list is not all inclusive) acids, caustics, hydrogen peroxide, green/white liquors, weak wash, biocides, chlorine dioxide, methanol, foul methanol, gasoline, natural gas, sodium chlorate, concentrated vent gases, aqua ammonia and sodium hypochlorite.

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Lockout - The term "lockout" shall mean the locking of equipment, electrical or mechanical, in such a manner that it cannot be energized without the lock being removed. See Lockout Policy.

Safety Data Sheet (SDS) - Contains detailed information about a chemical beyond that which is on the label.

NIOSH - National Institute of Occupational Safety and Health, a federal agency.

Participant - Any person performing, assisting, or observing the initial line breaking procedure.

Personal Protective Equipment (PPE) - Devices or clothing worn to protect an individual from direct exposure to hazardous materials and/or hazardous conditions.

Physical Hazard – A condition where temperatures > 120°F or pressures > 90 PSI.

Purging - Cleaning, clearing, or emptying of material.

Tank - Container for holding, storing, or transporting a liquid, gas, or solid.

Thermal Burn - Burn caused by contact with hot material or exposure to intense radiant heat.

Vessel - A container or structural envelope in which materials are processed, treated, or stored.

IV. PROCEDURES AND PRACTICES

A. The operating department shall:

1. Prepare the line or equipment for opening by draining, flushing, cleaning, and/or isolating, and by performing any necessary lockouts.
2. **IMPORTANT: By-pass lines, dead legs, etc. must be treated as if they're coming out of active service with respect to draining, flushing, purging, etc.**
3. Have information available regarding potential hazards, including SDS's.

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4. Complete the appropriate sections of the Initial Line Breakage Permit when required. See Appendix A & B.
 - a. Jointly identify needed safety equipment with the person performing the initial line breakage.
 - b. Complete hazard checklist with the person performing the line breakage. This review is to be completed in the field at the job location to ensure accuracy.
 - c. Sign the permit.
 - d. Tag the line breakage location with the permit whenever possible.

NOTE: Operations may initiate a permit for planning purposes in anticipation of an outage to minimize outage time. The permit can only be completed at the jobsite with the person breaking the line.

B. Participants shall:

1. Make contact with the operating department to review the work to be completed, and identify the correct line or equipment.
2. Determine if an Initial Line Breakage Permit is needed. See Appendix A.

Important: Opening a drain valve is not considered opening a line or system. Line Breakage procedures must still be followed until an opening occurs somewhere else in that system and hazards have been eliminated.

3. Initiate an Initial Line Breakage Permit when required. See Appendix B.
4. Review the hazards that might be encountered during the opening of lines, vessels, or equipment including, but not limited to, chemical burns, chemical irritation, thermal burns, pressures, toxic substances, gases/vapors, flammable gases, and/or other materials.
5. Where hazardous gases may be released, air monitoring must take place during the line breakage or equipment opening procedure and continue until there is no longer a potential for the release of gas. If a potential hazardous gas cannot be monitored with existing mill equipment, alternate procedures utilizing PPE, exhaust fans, etc. must be implemented. Consult with plant

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protection and/or the Safety Department on proper procedures and precautions.

6. Confirm with the operating department that the line, pump, vessel or equipment has been cleared, purged, drained, and/or isolated as necessary and that any necessary lockouts are complete (including personal locks).

Control valves, in general, are not designed, and should not be used, for isolation purposes in lockout (line breakage).

When considering the use of automated isolation valves (or certain control valves designed for isolation) as part of the lockout process, a member knowledgeable in the actuation characteristics of a specific valve application must be involved when evaluating the potential hazards and acceptable isolation steps taken.

7. Decide what protective gear to wear based on the nature of the original line contents.

IMPORTANT; If (for example) a chemical suit, rubber boots, neoprene gloves, hardhat, chemical goggles, respirator and a face-shield are required to work with and/or unload a product, these same PPE requirements would apply to a line breaking situation. The PPE must be worn until the line break is complete and it has been confirmed that no hazards remain.

8. Know the location of the nearest safety shower and eye wash station.
9. Ensure that the area is clear of unnecessary personnel prior to and during the initial opening (i.e. barricading, standby watch, etc.).
10. Complete the initial line breakage permit.

C. Issuing of Initial Line Breaking Permits

1. The participant performing the line breakage will initiate and complete the top portion of the permit form (See Permit Section A) and prior to beginning work will inform operations of their work plans.
2. Prior to beginning work, the participant and the operations member knowledgeable of the area and job will complete the permit identifying

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specific requirements (See Permit Section B, PPE and Hazard Checklist) that must be maintained throughout the duration of the job, prior to beginning work

3. The operations member and the participant will verify that the equipment or area is safe to start work and will then sign and issue the permit at the job site (See Permit Section C). **A job site visit is required.** The permit remains at the job site until the line breakage is completed. The completed permit is returned to the permit box in the control rooms.

D. Training

1. All personnel who engage in activities covered by this policy must receive initial training. Refresher training shall be conducted annually.
2. Training records must be maintained by the Safety Department for the current year plus two previous years.

V. **RESPONSIBILITIES**

A. Safety Department

1. Responsible for initial new member instruction.
2. Maintain records of member training.
3. Responsible for training contractors on the Initial Line Breakage and Equipment Opening Policy.

B. Members

1. All members have the responsibility to fulfill the intent and purpose of the Initial Line Breakage and Equipment Opening Policy.
2. Each member involved in initial opening or disassembly of lines, pumps, vessels or any other equipment shall be annually instructed on provisions and requirements of this Initial Line Breakage and Equipment Opening Policy. This is the responsibility of each team.

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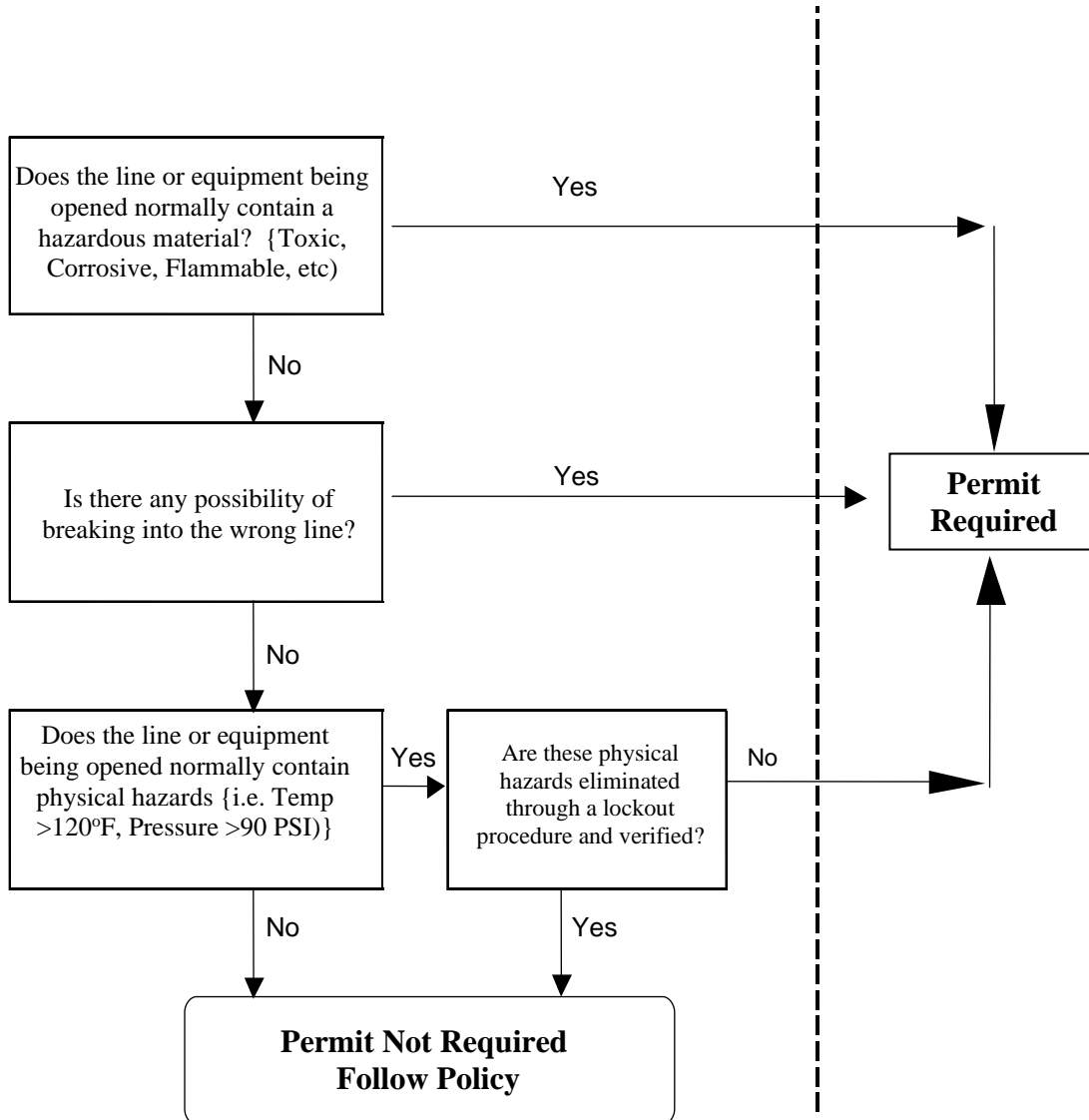
3. All Quinnesec Mill members are responsible for contractor's compliance with this policy.

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APPENDIX A
Is an Initial Line Breaking Permit Required?



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APPENDIX B

Section A.
Member performing job

INITIAL LINE BREAKING PERMIT	
DATE: _____	DEPT: _____
Job Description & Location: _____	
Material In Line: _____	Nearest Emergency Access Point & Phone: _____

Section B. Operations Knowledgeable Member & Person Performing The Job

PERSONAL PROTECTIVE EQUIPMENT REQUIRED			
<input type="checkbox"/> RUBBER GLOVES	<input type="checkbox"/> GOGGLES	<input type="checkbox"/> CHEMICAL SUIT	
<input type="checkbox"/> RUBBER SHOES	<input type="checkbox"/> FACE SHIELD	<input type="checkbox"/> OTHER: _____	
<input type="checkbox"/> DISPOSABLE COVERALLS	<input type="checkbox"/> RESPIRATORY PROTECTION _____		
HAZARD CHECKLIST			
(complete at the job site)			
YES	NO	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is line/system contents identified, drained, cleaned, and purged?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is line/system isolated, locked out, and secured?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is Drain valve open (in case line fills)?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has the line been tagged or marked?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Has closest safety shower been located and tested?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Escape route identified?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Area barricaded and tagged as necessary?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Personnel assigned to job instructed in proper safe work practices?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Scaffolds installed or other safe access to equipment provided?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	"Hot Work Permit" provided as needed?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PSM contract on permit?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	List special precautions necessary to complete job safely: _____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reasons for "NO": _____

Section C.
Authorized Signatures

*A review of any specific job hazards or procedures must be performed prior to signing this document.
Signing this permit gives approval for the described work to be performed.*

We CERTIFY that the below signatures have verified at the job site that the precautions checked and/or written above, have been taken and will be followed for the duration of the job.

Signed _____ Operations Member _____ Permit Recipient _____

DATE ISSUED _____ TIME ISSUED _____

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APPENDIX C Recommended Personal Protective Equipment

CAUTION: This appendix illustrates types of basic personal protective equipment and procedures to be used through selected examples only and **DOES NOT COVER ALL MATERIALS ENCOUNTERED OR PROCEDURES REQUIRED WHEN PERFORMING INITIAL LINE BREAKAGE, THE OPENING OF VESSELS, OR THE DISASSEMBLY OF PUMPS OR ANY OTHER EQUIPMENT.**

A. Acids and Caustic Materials:

1. When opening systems that contain (or contained) caustics or acids, the following examples of personal protective equipment would be worn:
 - chemical suit
 - chemical gloves
 - rubber boots
 - chemical goggles
 - face shield
2. If pipe sections are to be removed and flanges opened, loosen the bolts on the opposite side first.
3. Special care should be taken in case any liquid may still drip from the line or equipment; consider floor openings, gratings, etc.

B. Chlorine Dioxide:

1. All persons handling chlorine dioxide **must** be trained to work with it safely.
2. When breaking into lines or equipment that contain (or contained) chlorine dioxide, the following types of personal protective equipment would be suitable:
 - a. NIOSH approved airline respirator or self-contained breathing apparatus (SCBA).
 - b. Clothing such as chemical gloves, boots, and chemical protective clothing (slicker suit) shall be worn for jobs involving chlorine dioxide.

NOTE: All clothing that is contaminated with chlorine dioxide

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must be washed with water and soap and dried before re-use.

3. All lines or equipment containing chlorine dioxide **must** be thoroughly purged.
4. If pipe sections are to be removed and flanges opened, loosen the bolts on the opposite side first.
5. Special care should be taken in case any liquid may still drip from the line or equipment.

C. Sodium Chlorate:

1. All persons handling sodium chlorate **must** be trained in its use.
2. The following protective clothing shall be worn by all personnel when breaking into process equipment which contain(ed) sodium chlorate:
 - Special orange chemical suit (impermeable surface sheds materials and liquids)
 - rubber boots (no laces) must be worn at all times
 - chemical gloves and chemical goggles
 - full face shield

NOTE: When sodium chlorate comes in contact with clothing, wash off immediately. Do not allow sodium chlorate to dry on clothing. When work is complete, wash off all equipment, clothing, and surrounding area. (Dry sodium chlorate can ignite combustibles by friction or impact.)

3. Breaking into sodium chlorate lines, equipment, or systems:
 - a. The entire surrounding area should be wet down including the flange or equipment to be broken into.
 - b. If the line or equipment is to be cut or welded the entire area should be wet down and a second person standing by with a water hose. See Hot Work Policy.

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D. Steam and Condensate:

When initially breaking into lines or equipment that contain steam or hot condensate, the following examples of personal protective equipment would be worn:

- heat resistant gloves
- chemical goggles and face shield
- clothing to protect against thermal burns

E. Concentrated Vent Gases (CVG)

When breaking into lines or equipment that contain (or contained) concentrated vent gases, the following types of personal protective equipment would be suitable:

- NIOSH approved air-line respirator or self-contained breathing apparatus (SCBA).

F. Repacking Valves (or adding a ring)

Where chemical, pressure, or temperature hazards exist, PPE designed to protect against those hazards must be worn for the duration of the initial line breakage.