

SAFETY

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Effective:09/12/23	Document Owner: Safety Manager	Approved By:	

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I. POLICY/SCOPE

It is the policy of the Quinnesec Mill that when work is being performed which involves electric or gas welding, cutting, brazing, soldering, grinding, open burning, or similar flame or spark producing operations, proper precautions are taken prior to, during, and after the job to eliminate the threat of fire caused by any ignition source.

II. PURPOSE

- A. To establish a uniform hot work procedure, to prevent personal injuries and/or damage to property or equipment from the spread of fire due to the hazardous nature of hot work operations.
- B. To establish guidelines for hot tap procedures.
- C. To comply with the intent of MIOSHA Part 91, Process Safety Management of Highly Hazardous Chemicals, and the Quinnesec Mill – Property Conservation Manual.

III. DEFINITIONS

- A. AUTHORIZATION - is the legible name of the proprietor, the maintenance technician, the fire watch and Plant Protection on the hot work contract. This must be completed prior to starting any hot work.
- B. DESIGNATED HOT WORK AREAS - areas designed and maintained in a manner to safely conduct hot work. An outside yard area is NOT considered a designated hot work area unless listed in Appendix B. (Appendix B contains a list of Designated Hot Work Areas.) An area may also be identified as a Temporary Hot Work Area after receiving approval from the Safety Department.
- C. FIELD AUDIT – An inspection of the hot work area during and/or after the work has been completed. Field audits are recommended every few hours during hot work activity. In high hazard areas, field audits are required once per hour for 3 hours after completion of hot work. Audits may be completed by the maintenance tech, fire watch, area operators, or anyone conducting a FOCUS observation or KSPA audit.

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- D. FIRE WATCH - is a person whose responsibility is to watch the hot work area for fire.
- E. HIGH HAZARD AREA – areas such as warehouses/ buildings/ areas with combustible construction or any area which because of surrounding materials a fire could be expected to rapidly become a large, disastrous fire. (Appendix A contains a list of High Hazard Areas.)
- F. HOT TAP – a procedure used in the repair, maintenance and services activities which involves welding on a piece of equipment (pipelines, vessels, or tanks) under pressure to install connections without the interruption of service. – See appendix C
- G. HOT WORK AREA - The area within a 35 foot radius from the origin of the hot work, both on the same and differing levels of elevation dependent on the location of the work.
- H. HOT WORK CONTRACT - is a two-part form, which identifies that a work agreement is in effect between the operating department and the maintenance technician performing the hot work. It establishes that the area has been properly secured against the threat of fire, explosion and personal injury.
- I. HOT WORK - work involving electric or gas welding, cutting, brazing, soldering (using flame), grinding, open burning, or similar flame or spark producing operations.
- J. PROPRIETOR - the designated department member such as Team Leader, OMC, Engineer, Project Manager or Operator who is responsible for the equipment process system, or area where the hot work will take place.
- K. RELEASE - is the legible name of the proprietor, maintenance technician, and fire watch required on the hot work contract once the hot work has been completed.
- L. MAINTENANCE TECHNICIAN - is the authorized person(s) performing the actual hot work. (For the purposes of this policy, the term Maintenance Technician includes: any mill member, contractor, vendor, etc).
- M. RESPONSIBLE QUINNESEC MILL MEMBER – is the Quinnesec Mill Member responsible for bringing the contractor on site.

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IV. PRACTICE

A. Hot Work Contract (Hot Tap procedure is located in Appendix C)

1. **Before** hot work is started, the maintenance technician assigned to this task is responsible for obtaining a hot work contract. Hot work contracts can be obtained in each department maintenance work area, control rooms, or Stores. A hot work contract will be required for all hot work operations outside of designated hot work areas.

2. Hot work contracts are NOT needed in the DESIGNATED HOT WORK AREAS. Although Hot Work Contracts may not be required in these cases, all other aspects of the Hot Work Policy apply. Hot work must cease in DESIGNATED HOT WORK AREAS upon notification from Plant Protection of fire system impairment in those areas.

3. Any hot work involving a hot tap procedure also requires the completion of the **Quinnesec Mill Hot Tap Checklist/Permit** (see Appendix C)

B. Authorization of Hot Work

Prior to conducting hot work, the proprietor or designee of the equipment, the maintenance technician, the fire watch and Plant Protection (if needed) are responsible for going to the work site to ensure proper precautions have been taken, then authorizing the hot work contract on that equipment, system, etc. This pre-work inspection must be conducted within one hour of hot work beginning. On pre-planned maintenance outages, the pre-work inspection must be conducted within the previous 24 hours. When this is the case, the maintenance technician and fire watch must re-inspect the area immediately prior to beginning hot work to ensure hazards have not been introduced since the previous inspection. All pre-work inspection must be for the purpose of evaluating any potential fire and/or safety hazards associated with the hot work. Routine operational tours of the area will not be considered pre-work inspection. Hot work contract authorization must be denied if fire protection systems are impaired. Operations must 'Verify' that

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fire protections systems are operable by calling Plant Protection prior to hot work taking place. Plant Protection will confirm fire systems are operable and provide a number to the maintenance tech. This number must be documented on the Hot Work Permit. Where necessary, the mill Safety Department can authorize hot work when a fire system is down.

IMPORTANT: Any type of hot work on the **outside** of tanks, vessels, or lines which may contain, combustible or flammable materials, whitewater/stock/broke or other organic materials that could develop a head space of hydrogen or methane gas from bacterial action, the headspace MUST first be tested to assure that the levels of gas are at 0% before any hot work takes place.

Authorization of the hot work contract is the legible printed name of the proprietor, the maintenance technician(s), the fire watch and Plant Protection (if needed). If more than one maintenance technician will be performing the hot work on the same job, each maintenance technician, shall sign the hot work contract. This signifies that the hot work contract has been properly filled out and all necessary area preparations have been made. These preparations include, but are not limited to the following:

1. Area housekeeping of combustible materials.
2. Wetting or covering combustible materials.
3. Covering cable trays, plastic piping and grating.
4. Requesting the appropriate atmospheric testing and observation of test methods and results.
5. Purging and cleaning hazardous systems.
6. Supplying a fire extinguisher and/or water hose.
7. Setting up shields and barriers on all elevations.
8. Availability of proper personal protective equipment (face shield, helmet, welding gloves, etc.)

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C. **High hazard area Requirements:** for a list of high hazard areas, see Appendix A at the end of this policy).

1. Must have portable fire extinguisher present at the job site.
2. Must have fire hose available. Outdoor high hazard areas and in PSD, two additional fire extinguishers (for a total of 3) may be used in lieu of a fire hose where none is available or not readily accessible.
3. If hot work is taking place in a high hazard area that involves multiple floors where sparks can drop to a lower level, then an extra fire watch is required (example – hot work on paper machine dryer section operating floor and other areas with open grating between floor levels).
4. Fire watch must stay at job site for 60 minutes after job is complete.
5. Operations must complete and document (on back of permit) field audits once per hour for an additional three hours after the fire watch leaves the hot work site.

D. Implementing the Hot Work Contract

1. It will be the responsibility of all involved parties to ensure that the hot work contract has been filled out completely. The proprietor will retain the top copy of the hot work contract and the maintenance technician will then post the bottom copy of the hot work contract in the immediate area and may start the job.
2. It is the responsibility of both the maintenance technician and fire watch to assure that the hot work area remains properly prepared to protect against fire, explosion and personal injury. The proprietor is responsible to maintain an awareness of hot work being conducted in their area.
3. Upon completion of the hot work, the maintenance technician and the fire watch are responsible for clean-up of the hot work area, which also includes checking for hidden fires.

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E. Releasing the Hot Work Contract

Release of the hot work contract is the responsibility of, and requires the legible **names** of the maintenance technician, fire watch and the proprietor. **It is the responsibility of the fire watch, (or the maintenance technician) to ensure the proprietor or designee has signed the release.** They are to assure that the hot work area has been cleared and left in a clean, safe condition. The proprietor, by signing last, signifies that the area has been inspected and left in a clean, safe condition.

1. All released contracts must be turned in to the appropriate control room or the Plant Protection office. Drop boxes, for use by the proprietor, will be provided for the released hot work contracts.
2. Plant Protection personnel will pick up the released contract on their scheduled rounds. The contracts will be reviewed by safety staff and placed on file.
3. At any shift change, it is the responsibility of the off-going proprietor to inform his/her relief that the hot work is going on in the area. The on-coming relief then assumes all responsibilities of the hot work contract.

F. Fire Watch

For Contractors: Fire watch personnel will be provided by the contractor.

For Quinnesec Mill: Unless hot work is taking place in a designated hot work area, a fire watch is needed

1. Fire watch responsibilities:
 - a. The maintenance technician must make arrangements to have a fire watch present.

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- b. The fire watch must also sign the hot work contract.
- c. The fire watch must remain in the hot work area during extended breaks and lunch periods.
- d. The fire watch must remain in the hot work area at least 30 minutes after completion of the hot work or for at least 60 minutes for work in High Hazard areas before signing the release and return it to the proprietor.
- e. When the fire watch has assured that the threat of fire no longer exists, he/she will return the fire extinguisher or water hose to their proper location **and sign the release portion of the contract and obtain the signature of the proprietor.**

NOTE: A fire extinguisher and/or water hose must be always on the job site.

G. Length of Contract

An authorized contract is valid for as long as the maintenance technician and his/her crew are performing the hot work. **If personal changes at shift change, a new contract must be issued.**

H. Air Monitoring

- 1. It is the responsibility of both the maintenance technician and the proprietor to assure that appropriate air monitoring is done, when necessary, prior to authorizing the hot work contract. This is to protect against fire, explosion or personal injury from performing hot work in potentially hazardous environments.
- 2. Air monitoring is required for all hot work in confined spaces and on or near tanks, vessels, or pipelines that may contain flammable or combustible materials.
- 3. If air monitoring is required, it will be the maintenance technician's responsibility to contact Plant Protection. Plant Protection must be given the location and will bring the appropriate equipment for conducting the test(s).

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NOTE 1: See confined Space Entry Policy for additional test requirements if performing hot work in confined spaces. (Example: Continuous monitoring is required for hot work in a confined space. Contractors are to supply their own monitoring equipment). Extreme caution must be exercised when performing Hot Work on the outside of tanks, vessels, and pipelines. Any potential fire or explosion hazard must be fully evaluated prior to authorizing Hot Work.

4. Both the proprietor and maintenance technician should witness the air monitoring. Plant Protection will then record the results and authorize the hot work contract if within acceptable limits. (Lower Explosive Limit, LEL, must be at 0% to perform hot work in a confined space).
5. It is the responsibility of any participating individual to stop the hot work when changes in operations result in unsafe conditions or when additional air monitoring must be conducted for explosive content as is necessary in their judgment.

I. Contractors

Contractors working at the Quinnesec Mill will be required to comply with the Mill Hot Work Policy. It shall be the responsibility of the Responsible Quinnesec Mill Member to assure that the policy is complied with by all contractors doing work within the mill and acting as liaison to the proprietor. Contractors are required to provide their own portable fire extinguishers.

V. **RESPONSIBILITIES**

A. Safety Department

1. In conjunction with department leaders, will conduct the initial member training program.
2. To train Plant Protection personnel for gathering up contracts, providing additional fire watch rounds in completed work areas, and air monitoring of hazardous work areas.

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3. To review hot work contracts turned in.
4. To maintain records and retain hot work contracts for FM Global and Michigan Occupational Safety and Health Administration audits.
5. To conduct a review of the hot work program and all completed permits every six months.
6. To inform proprietor of fire protection system impairments.
7. Any exceptions to this policy must have prior approval from the Safety Department.

B. Proprietor or Designee Responsibilities

1. Ensure compliance to the hot work policy.
2. Ensure that all proper precautions have been taken and are maintained throughout the length of the contract.
3. Ensure the hot work scene prior to work beginning is safe
4. Authorize and release the hot work contract.
5. Retain the top copy of the hot work permit for the duration of the contract.
6. Ensure a follow up in areas where hot work was conducted to ensure that the area has been cleaned up and that there are no smoldering fires and that all emergency equipment has been restored to operation. In high hazard areas, the fire watch remains at the site for 60 minutes. After this, the proprietor is responsible for ensuring field audits are conducted once per hour for the next three hours. These audits are to be documented on the back side of the hot work permit.
7. Deny authorization of hot work contracts when fire systems are impaired.

C. Member's Responsibilities

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1. Each member shall annually be instructed on the provisions and requirements of this hot work policy. This is the responsibility of each team.
2. Each member shall effectively enforce compliance of this hot work policy. Team involvement is important.
3. Members shall consult with their supervisor or other appropriate knowledgeable team members whenever there are any questions regarding safe hot work procedures.

D. Responsible Quinnesec Mill Member

1. To ensure contractors at the Quinnesec Mill are trained on the hot work policy.
2. To assure compliance to the mill hot work **policy** by contractors.
3. To be a liaison between the proprietor and contractor.

E. Materials Department

To assure that all contractors bidding projects at the Quinnesec Mill are aware of our hot work policy.

F. Maintenance Technician/Fire Watch

1. To ensure compliance with the hot work policy.
2. To take all proper precautions and maintain them throughout the length of the contract.
3. To utilize screens or other effective means of shielding when welding, grinding or cutting near walkways.
4. To retain and post the bottom copy of the hot work permit for the duration of the contract.
5. To assure that the proprietor is notified and has released the hot work permit at the completion of the job.

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APPENDIX A

**Hot Work
High Hazard Areas**

Hot work in these areas below requires additional precautions during hot work and continued monitoring upon completion beyond that required in other areas of the mill.

<u>Area/Dept.</u>	<u>Location</u>
Woodyard	119, 162, 212, 220, 221 Bldgs. Chip Reclaims Hog Fuel Reclaim
Pulp Mill	Fuel oil tank and fuel oil unloading area
40 Machine	301 Warehouse
41 Machine	Within All Dryer Sections – Operating Floor and Basement
Product Services	415 Building
R&U	Waste Fuel Boiler 3rd Floor, within 30 feet of the feed bin hydraulic oil system Waste Fuel Boiler 8th Floor, Head Pulley Bark to Bin.
Mill-wide	If risk related to cable trays cannot be mitigated, hot work is now considered high hazard. Outside areas near railroad tracks

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APPENDIX B

Designated Hot Work Areas

The following is a list of Designated Hot Work Areas. These are areas which are intended for hot work and by design should be free of exposure hazards. They must be maintained in a manner that does not introduce fire hazards and all normal precautions associated with hot work are expected to be followed.

<u>Area/Dept</u>	<u>Location</u>
Woodyard	Maintenance shop in 228 building
Woodyard	MER Bldg
Woodyard	PSI Shop in Fire School Bldg.
R&U	Maintenance Shop on Ground Floor 103 Bldg.
Pulp Mill	Maintenance Shop operating Floor behind elevator
Pulp Mill	Hose building station (operating Floor, south side)
40 Machine	Main Maintenance Shop
40 Machine	Maintenance Shop west of Dry End Lab
40 Machine	Lift Truck Maintenance Area
41 Machine	Maintenance Shop on Ground Floor 410 Bldg by dry end elevator
41 Machine	Wet End E&I Shop on E end of operating floor.
41 Machine	Roll repair area directly west of Roll Grind Shop, ground floor
41 Machine	Maintenance Shop area located on dry end, ground floor, below #2 Winder
41 Machine	Machine part repair area located on dry end, ground floor, Column F 39 – F 40
Product Services Building 011	Lift Truck Maintenance Shop area
	Shop locations in the Contractor building when;
	a. They are maintained as a concrete & steel construction location; and
	b. Combustible materials are not present within 35 feet of the hot work area.
Building 011	The outside area southwest of the building may be used for hot work as long as there are no combustible materials present within 35 feet of the hot work area.

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APPENDIX C

Hot Tap Procedure

I. General

A hot tap can only be completed when a Quinnesec Mill member has been identified as the Job Owner. The Job Owner is responsible for the safe completion of the task. The Job Owner must ensure the completion of: 1) the Quinnesec Mill Hot Tap checklist & Hot Tap Permit (Checklist/Permit both on one document - available in DMS); and 2) must ensure the adequate capability of the person performing the work. Hot tapping operations shall be performed only by those individuals specifically trained in this type of work.

II. Practice

A. Participant shall

1. Obtain a Hot Tap Checklist/Permit. These checklists/Permit can be located in the Safety Policies -available in DMS
2. Complete a Hot Work Contract
3. Verify the equipment being worked on
4. Review API 2201 checklist
5. Review Hot Tap Procedures (job specific) & Complete the Hot Tap Checklist
6. Complete an Initial Line Breakage Permit, if required
7. Complete a Process Safety Review, if required
8. Sign the Hot Tap Permit at the end of the Hot Tap Checklist
9. Sign the permit when the job is completed and return it with the Hot Work Contract

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B. The Operating Department shall

1. Ensure the proper location for the hot tap is identified
2. Complete the required Hot Work Contract
3. Complete the required Initial Line Breakage Permit, if needed
4. Review PSM requirements, if needed
5. Sign the Hot Tap Permit before work begins (only after all the previous steps are completed, i.e. signatures are on the permit)
6. Sign the permit when work is completed

C. Job Owner/Maintenance/Engineering Department shall

1. Ensure contractors and maintenance techs are trained on the hot tap procedure before beginning the work
2. Ensure contractors or techs performing the work review & comply with **Quinnesec Mill Hot Tap** checklist
3. Sign the Hot Tap Permit before work begins