I. INTENT

The intent of the Risk Management Program (RMP) regulation 40CFR68 "Accidental Release Prevention Requirements: Risk Management Programs Under Clean Air Act Section 112(r)(7)." is to prevent accidental releases to the air and mitigate the consequences of such releases by focusing on chemicals that pose the greatest risk to the public and the environment.

This document summarizes the RMP plan developed for the Quinnesec Mill that ensures compliance with 40CFR68, specifically with Section 68.15 - Management.

To assist in understanding the Quinnesec Mill Risk Management Program, a separate document exists for each of the key elements. In addition to this Overview, there are documents for:

- Hazard Assessment
- Prevention Program (also known as Process Safety)
- Emergency Response
- RMP Submittal and Updating

II. SCOPE

As a hardwood, bleached kraft pulp and paper mill, the Quinnesec Mill produces Chlorine Dioxide for use in the bleaching process. The scope of this RMP program is limited to the following processes and process equipment:

> **Chlorine Dioxide System:** Starting at the R10 generator loop, continuing through the indirect contact cooler, absorption tower and transfer pump to two solution storage tanks, each with a capacity of 110,200 gallons. From the storage tanks continuing through the transfer pumps, heat exchanger and terminating at the hi-shear mixers for the D-100, D-1 and D-2 bleaching stages.

The above processes are within the threshold quantity and process definitions of EPA, thereby incorporating them into the program. The following areas are not included within the mill RMP:

- Chlorine dioxide - Bleaching process. The bleaching process, starting at the towers and continuing through the washers, is not included in mill RMP, as Chlorine Dioxide is not present in a threshold concentration of greater than 1% by weight or in quantities exceeding the threshold value.

- Hydrogen Sulfide and Methyl Mercaptan are present in gaseous form in the CVG piping system. The threshold quantity for each of these substances is 10,000 lbs, neither compound is present in storage at a significant quantity.

III. DEFINITIONS

Covered Process: A process which is regulated under the Risk Management Program.

Threshold Quantity: The limit established by EPA to determine which chemical processes are required to be included in the Risk Management Program. The threshold quantities for regulated chemical processes at the Quinnesec Mill are as follows:

Process	Program Level	Regulated Substance/ Threshold	Maximum Process Quantity	Largest Single Vessel
Chlorine Dioxide System	3	Chlorine Dioxide 1000 lbs	20,000 lbs.	10,000 lbs.

Additionally, the requirements apply to solutions of toxic substances whenever the substance is present in a concentration of greater than 1% by weight, unless specifically named by the rule. Chlorine dioxide at the Quinnesec Mill is handled at a concentration of 1.2% by weight in the processes identified in the scope above.

Stationary Source: Buildings, structures, equipment or installations located on the same property, under common control, from which an accidental release may occur. The Quinnesec Mill, including the waste water treatment plant, is considered a single stationary source for regulatory purposes.

IV. PRACTICE

A. Philosophy

1. The Quinnesec Mill is committed to the protection of safety and health of mill employees, contractors, visitors, the surrounding community and the environment.
2. Elimination of chemical processes which pose the greatest risk has been completed to the extent practical.

3. Where elimination is not practical, the mill Process Safety program has been effective at preventing releases. The basis of the program is to continually improve the safety of chemical processes.

4. If a release were to occur, the mill Emergency Response teams are fully trained, staffed and equipped to ensure quick, effective response and control of an accidental release. Local emergency response officials are provided with details of potential chemical release scenarios to assist in their planning efforts.

5. To ensure the ongoing safe management of chemicals used at the Quinnesec Mill, various management systems are utilized including process design and control, operation,

maintenance, monitors and alarms, containment, and enclosures. These are all focused on prevention of significant releases.

6. With respect to the covered processes, the Quinnesec philosophy is to prevent releases from occurring, and be prepared to respond in the unlikely event a release occurs.

B. Management System

1. The Quinnesec Mill management system assures that responsibility for oversight of the Risk Management Program is incorporated into daily operations activities.

2. The EHS Department has the primary responsibility for coordinating the Risk Management Program elements. Depending on the aspect of the program, the specific responsibility resides with the "natural owner". For example, operating procedures are the responsibility of the operating departments, mechanical integrity is the responsibility of the maintenance department.

3. Tracking and management systems are also an integral part of the Program 3 prevention program, also known as Process Safety.

4. A diagram showing the general reporting structure for the RMP is found in Appendix A.

5. Responsibilities for specific areas are identified in the RMP support documents.

C. Hazard Assessment

1. The worst-case scenario was originally based on EPA lookup tables. Refined modeling was performed in 2001 by a third-party consulting firm to ensure more accurate assessment. Alternate release scenario analysis was conducted by a third-party consulting firm to ensure the objectivity and accuracy of the alternate release scenario modeling.

D. Prevention Program

1. The Quinnesec Mill prevention program is designed to meet the requirements of both EPA 40CFR68, Program 3 and MIOSHA Part 91, Process Safety Management. Program 3 is the most rigorous of the chemical release prevention programs.

2. The Quinnesec Mill does not have any chemical processes meeting the Program 1 or Program 2 criteria.

3. Future processes at the mill will be classified according 40CFR68 criteria to determine the appropriate prevention program level. The two primary codes for classification according to the NAICS system are 322121 for integrated paper mills and 22131 for water treatment facilities.

4. Only those processes that are directly connected to pulp production processes, or are regulated under the Process Safety Management standard must be managed under the Program 3 prevention program.

E. Emergency Response Program

1. The Quinnesec Mill has a fully equipped and trained Emergency Response Team to handle each of the following types of scenarios:
    - Hazardous Materials
    - Fire
    - Rescue
    - Medical

2. Mill personnel are notified of release via process air monitoring and alarm systems, which indicate type of event and directions for evacuation.

3. Response personnel would be alerted to potential for chemical release either by process monitoring, air monitoring systems, or an actual sighting of a chemical release.

4. Response is as defined in the Quinnesec Mill Emergency Response Plan. This includes communication to local emergency officials in the event the potential exists for a chemical release to move off-site.

5. Off-site consequence analysis results were reviewed with local emergency officials to ensure their understanding of potentials release scenarios, as well as response actions.

6. The mill has an off-site plan as required by the State Emergency Response Commission (SERC) and approved in 1994. The plan is periodically updated with the Local Emergency Planning Committee (LEPC)

7. The mill also has a Pollution Incident Prevention Plan (PIPP), which includes Emergency Release Reporting per EPA SARA and CERCLA regulations and Michigan DEQ standards.

F. RMP Submittal and Updating

1. Per regulatory requirements, the Quinnesec Mill submitted the RMP, information required by subpart G of the regulation, to the EPA.

2. The RMP Executive Summary describes the overall approach to RMP at the Quinnesec Mill and how the mill complies with various aspects of the regulation. It includes:
    - Accidental release prevention and emergency response policies
    - Stationary source and regulated substances handled

- Accidental release prevention program
- Five-year accident history
- Emergency response program
- Planned changes to improve safety

3. The RMP must be resubmitted at least every five years, or more frequently under these circumstances; (note this is a partial list – refer to EPA website for complete details)
   - Whenever a new chemical process is added that is covered by the regulation
   - Within 30 days of a change in emergency contact information
   - Within 6 months of an RMP accident occurring

G. Recordkeeping

1. Records supporting the implementation of the RMP are required to be maintained for a minimum of five years.

2. Recordkeeping requirements are not intended to supersede record retention requirements for other regulatory purposes (i.e. Process Safety). In all cases, the most restrictive requirement will apply.

H. Communication

1. The Quinnesec Mill reviewed the RMP data with mill employees and contractors to ensure they understood the intent of the RMP and their impact on the success of the program. This included a review of the chemical release scenarios, as well as the prevention and response aspects.

2. RMP data was reviewed with local emergency response officials to ensure their awareness and the potential impact it may have on their off-site planning efforts.

3. Quinnesec Mill RMP data is available by contacting the EHS Department at the mill.

V. RESPONSIBILITY

A. Operating department management is responsible for ensuring operational activities are performed in a manner consistent with the intent of the RMP regulation to minimize the potential for accidental release.

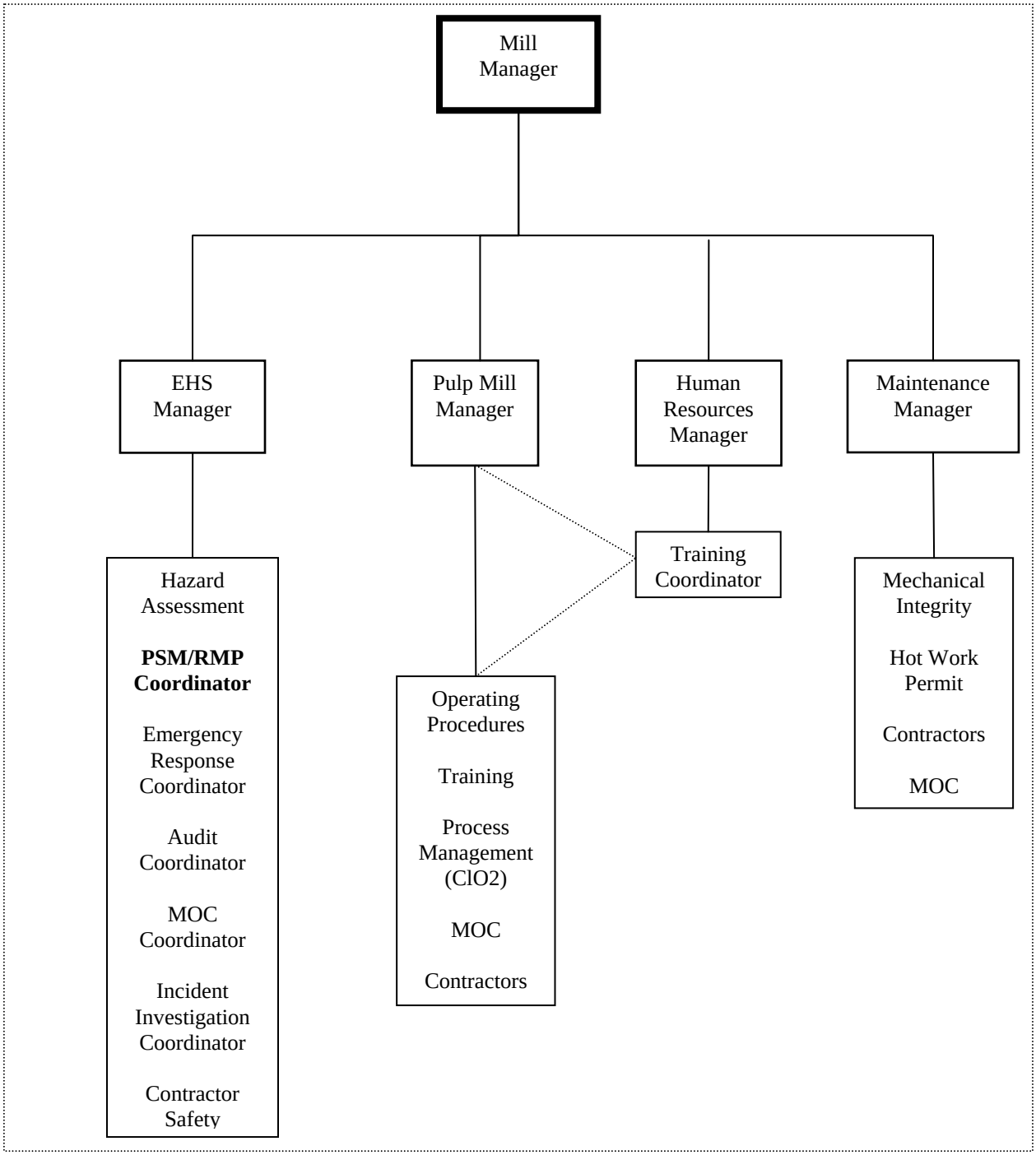
B. Maintenance department management is responsible for ensuring maintenance activities are performed in a manner consistent with the intent of the RMP regulation to minimize the potential for accidental release.

C. Support departments are responsible for ensuring their activities minimize the potential for accidental releases.

D. The EHS Manager is responsible for overall implementation of the RMP plan and is responsible for maintaining the RMP, hazard assessment, prevention program, RMP submittal and emergency response coordination.

E. All departments are responsible for identifying potential situations which may require changing or updating the RMP program.

APPENDIX A
ORGANIZATIONAL CHART/LINES OF AUTHORITY



End of Document

I. INTENT

The intent of the Hazard Assessment is to assess the extent of potential impact of an accidental chemical release on the surrounding community and the environment.

The purpose of this document is to identify the approach taken by the Quinnesec Mill to comply with the regulatory requirements of 40CFR68, Subpart B - Hazard Assessment

II. SCOPE

Hazard Assessment was performed on the covered processes only. Mill processes not meeting EPA definitions for threshold quantity or process were not included in the assessment.

III. DEFINTIONS

Alternate Release Scenario: A scenario based on potential release events which are considered more realistic than a worst case scenario, allowing passive and active mitigation controls to be considered. The alternate release scenario calculates the hypothetical distance to the toxic endpoint concentration.

Toxic Endpoint: The endpoint chemical concentration at which no noticeable health effects are expected as the result of a chemical release. Toxic endpoints are established by EPA for regulated chemicals.

Worst Case Scenario: A scenario based on the release of the largest quantity of a regulated substance from a vessel or process line failure that results in the greatest distance to an endpoint. Worst case scenarios also assume that all control systems fail, and are therefore not considered to be a realistic representation of what may actually occur.

III. PRACTICE

A. General Practice

1. The Quinnesec Mill performed analyses of the potential offsite consequence an accidental release of a regulated substance could have on the public or the environment

2. The RMP regulation requires that such an analysis include an evaluation of both worst-case release scenarios and alternative release scenarios, as follows:

    - one worst-case release scenario for each Program 1 process (the Quinnesec Mill does not have any processes meeting the Program 1 definition)

- one worst-case release scenario for the class of toxic substances in Program 3 processes (i.e., one scenario representing the Chlorine Dioxide process)
- one alternative release scenario for the Chlorine Dioxide process
- one worst-case and one alternative release scenario for the class of flammable substances in Program 2 and Program 3 processes (the Quinnesec Mill does not have any process chemicals meeting the flammable substance definition)

3. The main objective of performing the offsite consequence analysis is to determine the distance at which certain effects might occur to the public because of an accidental release (called the endpoint distance).

4. When considering the release of a toxic substance such as chlorine dioxide, most people at the endpoint distance would be able to walk away from the exposure without any long-term health consequences, although some short-term consequences (e.g., strong eye or throat irritation) are likely.

5. The endpoint distance concentration for chlorine dioxide (1 ppm) is based on a 30 minute exposure period with no health effects for an average person, per EPA definition.

B. Worst Case Scenario

1. The Quinnesec Mill does not expect a worst-case release scenario to ever occur. However in accordance with the RMP requirements, a worst case release analysis was conducted.

2. The Quinnesec Mill performed an initial offsite consequence analysis for the worst-case release scenario using the EPA RMP Offsite Consequence Analysis Guidance and look-up tables. However, in 2001, a revised assessment was performed using a DEGADIS modified modeling technique to more accurately represent the dynamics of the expected scenario for chlorine dioxide solution. Additionally, ALOHA modeling was used in 2001 for chlorine to ensure comparable assessment for selecting a single worst case scenario.

3. The worst-case scenario is based on the instantaneous release of the entire contents of a chlorine dioxide storage tank. The volume released would be 100,000 gallons of chlorine dioxide in water solution (1.2% by weight), or 10,000 lbs of pure chlorine dioxide. A portion of the release would be held by containment curbing, the remainder would spill into the surrounding surface area.

4. The toxic endpoint for chlorine dioxide, per EPA definition, is 1 ppm.

5. The input criteria to determine the worst case scenario (per 40CFR68.22) is:

- Wind Speed: 1.5 meters/second
- Stability: F
- Temperature: 25 deg. C.

6. The resulting spill of liquid is assumed to evaporate as a dense gas of chlorine dioxide, with a distance to endpoint of 5.8 miles.

C. Alternate Release Scenarios

1. While the Quinnesec Mill believes that such releases are unlikely to occur, nevertheless we have evaluated the offsite impact of the releases in accordance with the regulatory requirements.

2. The alternative release scenarios evaluated were intended to represent releases that might occur and were based on experience at Champion mills. Potential scenarios evaluated included:

   - Process piping release
   - Process vessel or pump release
   - Vessel overfilling and spill, or over pressurization

3. An alternative release scenario represents a release that (1) might occur at a facility like Quinnesec and (2) would result in the greatest potential offsite consequences if the release occurred. This was evaluated through past incident investigations, and during process hazard analysis (HAZOP) studies. No five year accident history was available.

4. To ensure the validity, accuracy and objectivity of alternate release scenario modeling, an outside consultant with expertise in modeling chemical releases was hired.

5. The Quinnesec Mill selected two models to evaluate off-site impacts: an EPA approved screening model known as SCREEN3 and TRACE.

6. SCREEN3 was used to simulate the release of chlorine dioxide due to a loss of the scrubber control system on the chlorine dioxide generator. TRACE was used to evaluate the release of chlorine dioxide due to a leak in a chlorine dioxide transfer pipe.

7. For the RMP modeling performed the following meteorological parameters were used for the alternate release scenarios:

   - Wind Speed: 3.0 meters/second
   - Stability: D
   - Temperature: 60 deg. F. (all processes located indoors - typical temperature)

8. The alternative release scenario for the Chlorine Dioxide System is a valve or flange leak from the piping system. Operators would be notified of a release by chlorine dioxide

monitors located throughout the process area. Local drains and sewers would limit the extent of spread of the water solution to no more than 1000 sq. ft., limiting the vaporization of chlorine dioxide. Approximately 300 lbs. of chlorine dioxide would be released from the time the incident began, until emergency responders would stop the leak 30 minutes later. The endpoint distance has been modeled at 1842 ft.

9. The scenario for chlorine dioxide is based on leaks of smaller magnitude that previously occurred, as well as estimating a large enough surface area to produce an off-site impact. All areas of the chlorine dioxide system are curbed, or drained to an enclosed sewer. No credit was taken for the process being located indoors.

D. Offsite Impact - Population

1. Population impact for the worst case scenario was estimated by census data as obtained from Census CD+Maps dated November 24, 1998. The total number contained in a radius of 25 miles is approximately 43,000 persons.

2. Population impact for the alternate release scenarios was based on actual count of residences located with the release radius distance. Two residences are located with the endpoint distance of chlorine - clearwell process. The estimated population is 10 persons.

3. The remaining alternate release scenarios did not impact any offsite populations.

E. Offsite Impact - Environmental

1. Environmental receptors identified on U.S.G.S. maps for the worst case scenario include state and national forests.

2. No environmental receptors were identified for the alternate release scenarios.

F. Five Year Accident History

1. Neither the chlorine dioxide or chlorine processes have any history meeting the EPA criteria for the five years previous to the submittal of the RMP plan.

2. An RMP accident is defined as an event resulting in a recordable medical case (i.e. administering oxygen more than one time per event for treatment of potential exposure), property damage exceeding $500,000, or offsite impact to public or environmental receptors.

IV. RESPONSIBILITY

A. The EHS department is responsible for the coordination and modeling for chemical releases for the purposes of RMP submittal, including confirmation and retention of support documentation.

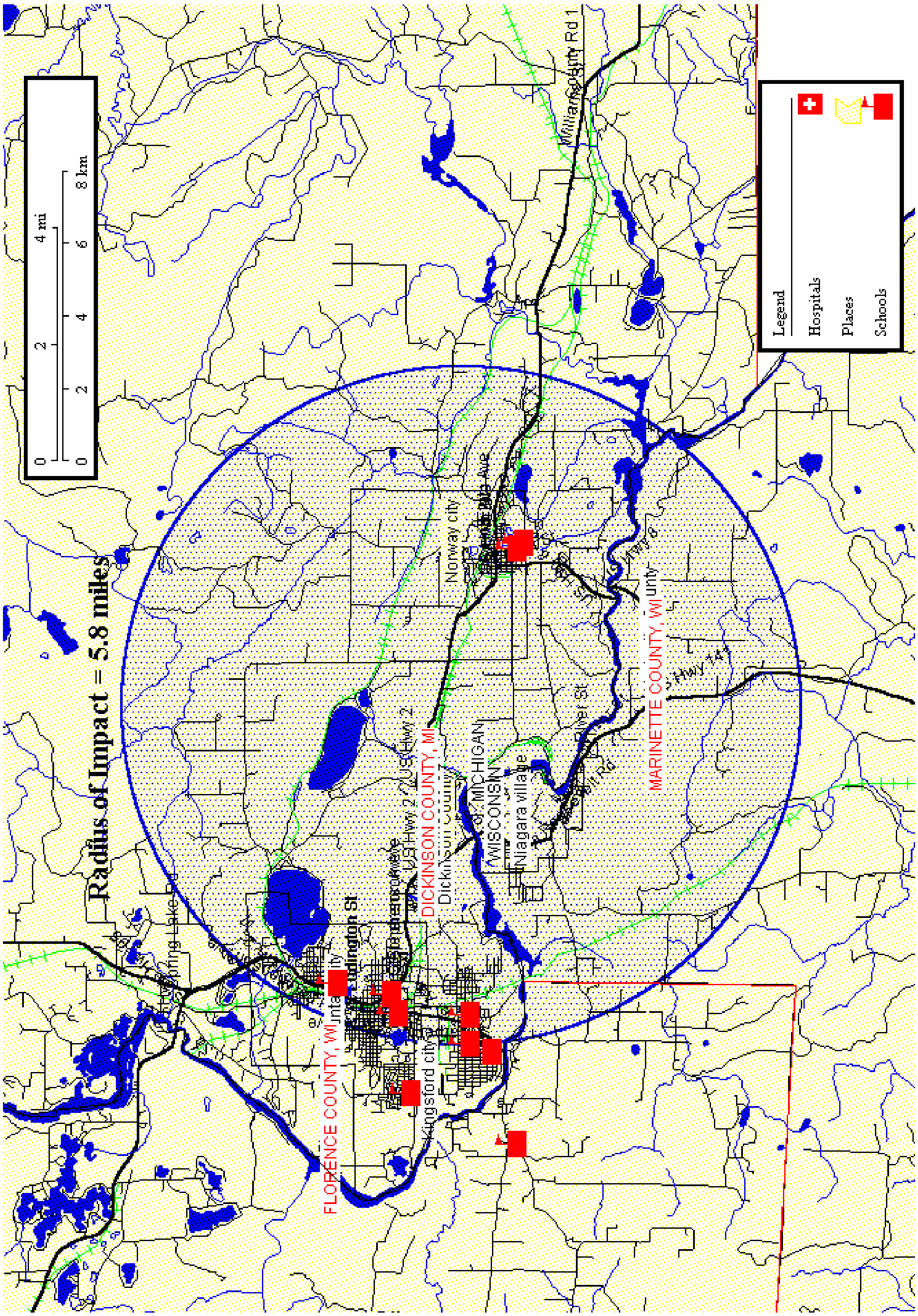
B. The Emergency Response Coordinator is responsible for communication of offsite consequence analysis to local emergency response officials.

C. The EHS department is responsible for conducting any revised modeling in the event that modifications change the potential for offsite impact.

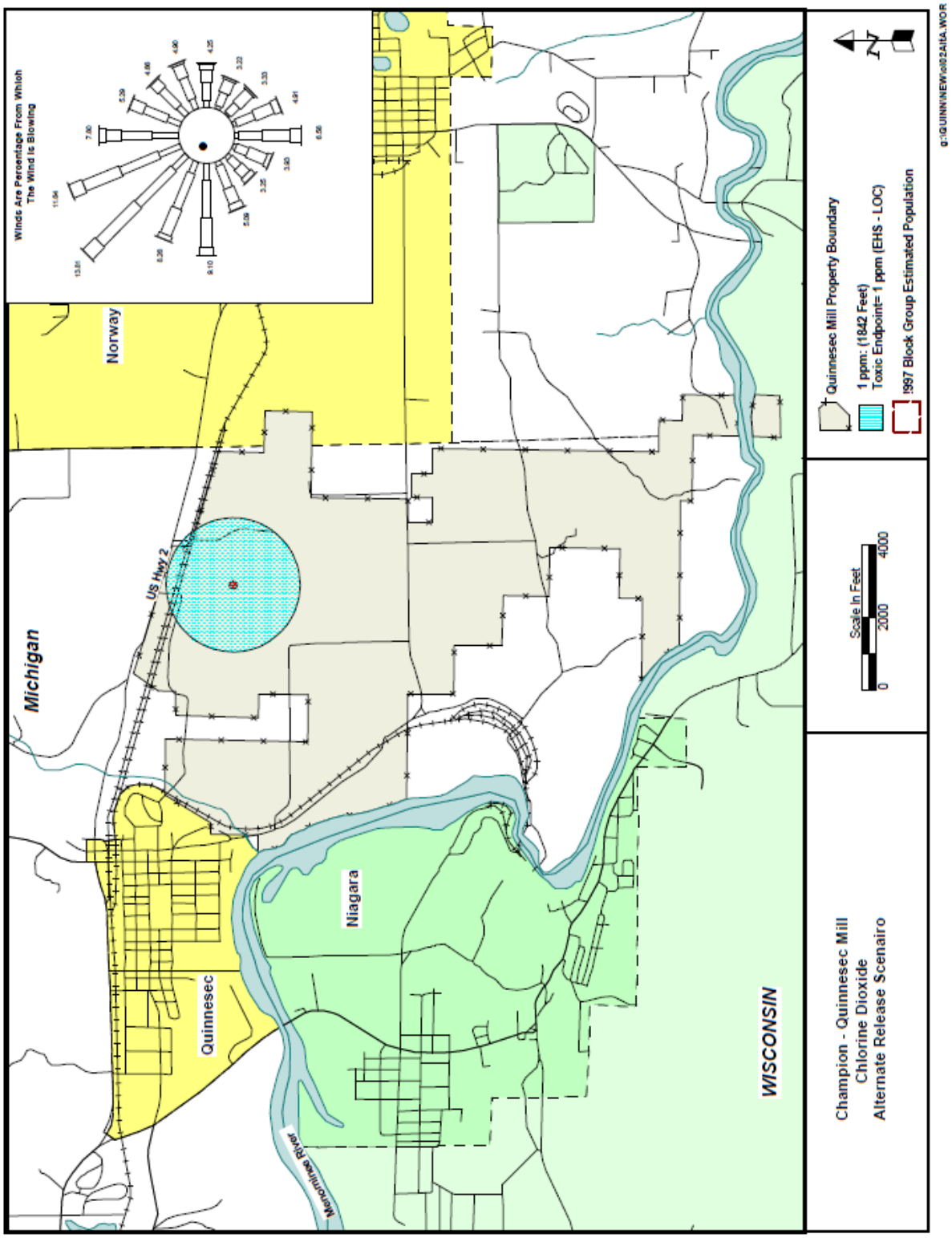
Summary of Modeling Results

	Scenario	**Impact Distance**
Chlorine Dioxide	**Worst Case:** Loss of 1 full tank 100,000 gallons 1.2% ClO2 10,013 # of ClO2 release, some to sewer, the rest forms a pool.	5.8 Miles
	Alternate Release Scenario: Flange or valve leak from system, 3000 # loss. (see p.4 above, No. 9)	0.35 mile (1842 ft.)

Chlorine Dioxide – Worst Case Scenario



Chlorine Dioxide – Alternate Release Scenario (0.35 mi)



I. INTENT

The intent of the Program 3 Prevention Program is to minimize the potential for release of a regulated substance through a comprehensive management program.

This document provides an overview of the Quinnesec Mill programs established for managing 40CFR68, Subpart D, Program 3 prevention program.

II. SCOPE

This overview applies to all management programs and systems developed to address the requirements of MIOSHA Part 91 (OSHA 29CFR 1910.119) Process Safety Management and EPA 40CFR68 - Risk Management Program, Subpart D, Program 3 prevention program. These programs all fall under the title of "**Process Safety**" at the Quinnesec Mill.

It does not address the other required sections of EPA 40CFR68, Risk Management Program. These are outlined in other Quinnesec Mill written programs.

The Quinnesec Mill utilizes and generates chemicals which are toxic as defined by EPA 40CFR68. The Process Safety program at the mill addresses processes handling the chemical above the threshold quantities identified in the rule.

Chlorine Dioxide System: Generator (R10) and Chlorine Dioxide Distribution

III. DEFINITIONS

Element: Sections of the Process Safety program based on the major categories of the Process Safety and Risk Management regulations.

Member: An employee of the Quinnesec Mill, including salaried and supervisory personnel.

MIOSHA/EPA Roadmap: A document which identifies how the Quinnesec Mill complies with the MIOSHA Part 91 and EPA 40CFR68 Subpart D regulations, including where support documentation is located.

Overview: A written document, provided for each of the Process Safety elements, which defines the practices at the Quinnesec Mill to ensure the requirements of the element are met (i.e. this document is the overview for the Program Management element).

IV. PRACTICE

A. Quinnesec Vision - Process Safety

1. The application of Process Safety organizational principles will result in both the prevention of accidental chemical releases and the optimization of our affected chemical processes.

2. Process Safety Management is an integral part of our daily operations due to management's commitment and active membership involvement. It is viewed as consistent with our Philosophy and our Continuous Improvement strategies.

3. Process Safety related information is current, readily accessible and understood by all affected parties. This is a result of our commitment to our Management of Change program, information management and training.

B. Program Elements

1. The Quinnesec Mill Process Safety program consists of 13 elements. The relationship of these elements with respect to the MIOSHA PSM standard and EPA RMP Program 3 rule is found in the document entitled **"MIOSHA/EPA Roadmap"**, included under the Program Management element.

2. The 13 elements, and the relationship to those elements in the regulations, are:

   1) **Program Management** (includes Employee Participation and Trade Secrets)
   2) **Engineering Detail** (includes Technology/Equipment aspects of Process Safety Information)
   3) **Hazard Analysis**
   4) **Operations Modules** (includes Hazards/Technology aspects of Process Safety Information)
   5) **Training**
   6) **Contractors**
   7) **Pre-Startup Safety Review**
   8) **Mechanical Integrity**
   9) **Safe Work Practices** (includes Hot Work and Operating Procedures aspects)
   10) **Management of Change, or MOC**
   11) **Emergency Response**
   12) **Incident Investigation**
   13) **Compliance Audits**

3. Appendix A identifies the key program components for each of these 13 elements. The manual entitled **"Process Safety - Written Programs and Guidelines"** is part of the Program Management element.

C. Management Structure

1. The Environmental, Health and Safety (EHS) Manager has responsibility for oversight of the Process Safety program.

2. The Process Safety Coordinator is responsible for coordinating the ongoing efforts of mill members involved in the compliance and continuous improvement of the program (this may not be a formal title in the mill organizational structure, but the roles/responsibilities are known by this name to the mill members).

3. The EHS Manager and Process Safety Coordinator, together with the operations manager and managers from each of the key departments involved in the program (i.e. Recovery/Utilities, Pulp Mill, Maintenance and Engineering, Process Control, Organizational Development) form the Process Safety Steering Committee. The committee meets on an as-needed basis.

4. The Process Safety Steering Committee is responsible for ensuring the necessary resources and commitment are provided to support the process safety effort, and to establish guidelines in the development and ongoing management of the program.

5. Each key department has personnel assigned to assist the department with managing Process Safety. These department coordinators provide a focal point for employee participation and provide feedback to the Process Safety Coordinator.

6. Appendix B identifies the organizational structure for Process Safety.

7. Departments or mill areas which do not have specific personnel assigned to the Process Safety program are involved on an as-needed basis.

8. Further description of employee involvement is found in the document entitled "**Employee Participation**", included in the Program Management element.

9. Appendix C identifies general department roles/responsibilities for all 13 of the Process Safety elements.

D. Documentation

1. Appendix D identifies all documents which make up the Process Safety written program. The written program consists of documents required by regulation (i.e. employee participation, management of change) and documents describing how the Process Safety elements function (i.e. engineering detail, operations modules). The written program was developed to supplement existing mill programs, such as mill safety policies and procedures.

2. The manual entitled **"Process Safety - Written Programs and Guidelines"** contains these materials.

3. Forms and checklists have also been developed to assist personnel in meeting PSM/RMP requirements. These include: pre-startup safety review checklist, compliance audit checklists, MOC permit, etc.

4. Written programs, guidelines, forms and checklists are found in the Quinnesec Mill LAN system Shared (S) drive or the Document Management System.

5. Process Safety documentation, other than written programs, is maintained in various locations throughout the Quinnesec Mill. Generally speaking, the documentation resides in the area which is the "natural owner" for the element of the program, or a particular section of the element. This is further identified in the document entitled "**MIOSHA/EPA Roadmap**" found under the Program Management element.

6. Process Safety documentation is available to all mill personnel, either directly or upon request. Further detail on documentation access is outlined in the documents entitled "**Employee Participation**" and "**Trade Secrets**", included in the Program Management element.

7. Further description of the document organization and structure can be found in the document entitled "**Document Structure**", of the Program Management element.

E. Key Concepts

1. Process Safety requirements were built into existing Quinnesec Mill systems (i.e. engineering files) to the extent possible. New systems were created to address requirements not previously addressed by mill programs.

2. Systems to address Process Safety need to be relatively simple and dynamic. This ensures they can be easily understood and updated as changes occur.

3. The following concepts are used to ensure successful management of Process Safety at the Quinnesec Mill:

a) **Member Involvement:** Employee participation and departmental ownership are key to improving the safety of the covered processes and the effectiveness of the Process Safety program.

b) **System Approach:** Written programs have been established to ensure consistent application of Process Safety principles.

c) **Mill Policy:** A written **Process Safety Management Policy,** signed by the mill manager, is included with the Quinnesec Mill Safety Policy and Procedure Manual to set clear expectations for the program.

d) **Process Boundaries:** Process boundaries are clearly identified to allow effective management of the program.

e) **Orange:** This is the color used for signs, files, manuals, tags, MOC permits etc. associated with Process Safety in the mill.

f) **Equipment Identification:** Equipment numbers are assigned to covered process equipment, including manual valves. Covered process equipment is tagged with orange tags to ensure awareness of Process Safety requirements. Equipment descriptions begin with a "PS-" in the 4300 system.

g) **Process Signs:** Covered processes are provided with area signs to alert personnel of Process Safety and Management of Change requirements.

h) **Process Safety Bulletins:** Bulletins are used to communicate important learnings in Process Safety, particularly from Hazop Studies, Incident Investigations and Compliance Audits.

i) **Document Banners:** P&ID's, Loop Sheets, Equipment Files, Microfiche cards, etc. are provided with Process Safety banners and either orange or pink color to alert personnel to requirements.

j) **Engineering Detail:** Process design follows established practices, and is documented to support future modifications of the process.

k) **Hazard Analysis:** Hazop studies are conducted on a priority basis, to ensure that risks are systematically evaluated according to the potential hazards.

l) **Operating Manuals:** Key information on the covered processes is included in operating manuals, found in the control rooms for the covered processes. This includes Standard Operating Procedures (SOP's).

m) **Mechanical Integrity:** Process equipment integrity is achieved through active application of predictive/preventive maintenance practices, routine inspection and testing, and control of our replacement equipment and materials.

n) **Management of Change:** Changes are permitted before they are made and documentation is updated in a timely manner. Cornerstone of the program.

o) **Training:** Members are introduced to Process Safety during their initial safety orientation. Members involved with operating or maintaining covered processes are required to understand Process Safety requirements as part of their certification. Refresher training is provided to ensure procedures and requirements are understood. Training documentation is easily retrievable.

p) **Contractors:** Contractors working on covered processes are trained in the hazards, safe work practices and emergency response requirements around covered processes prior to performing work. Their performance is regularly reviewed to ensure compliance.

q) **Pre-Startup Safety:** We ensure the safety of major process modifications through complete safety reviews using a team approach.

r) **Safe Work Practices:** All members working on covered processes are trained in and understand the critical need to follow established safety policies and procedures during all phases of process operation and maintenance.

s) **Emergency Response:** Our response teams are adequately trained to respond to emergency situations, following established practices.

t) **Incident Investigation:** Incidents and near misses are investigated to find the root cause, share learnings and take corrective actions to prevent recurrence.

u) **Compliance Audits:** Conducted every 3 years to ensure the program is evaluated for its effectiveness, with learnings shared and recommendations addressed.

V. RESPONSIBILITIES

A. The Process Safety Steering Committee is responsible for regular review of the Process Safety program to ensure its effectiveness, and for establishing the direction and strategy for the program. The committee is also responsible for ensuring resources are provided to facilitate management of the program across all affected departments.

B. Mill members are responsible for taking an active role in developing materials, resolving issues and supporting the Process Safety effort to ensure compliance with the intent of the employee participation section.

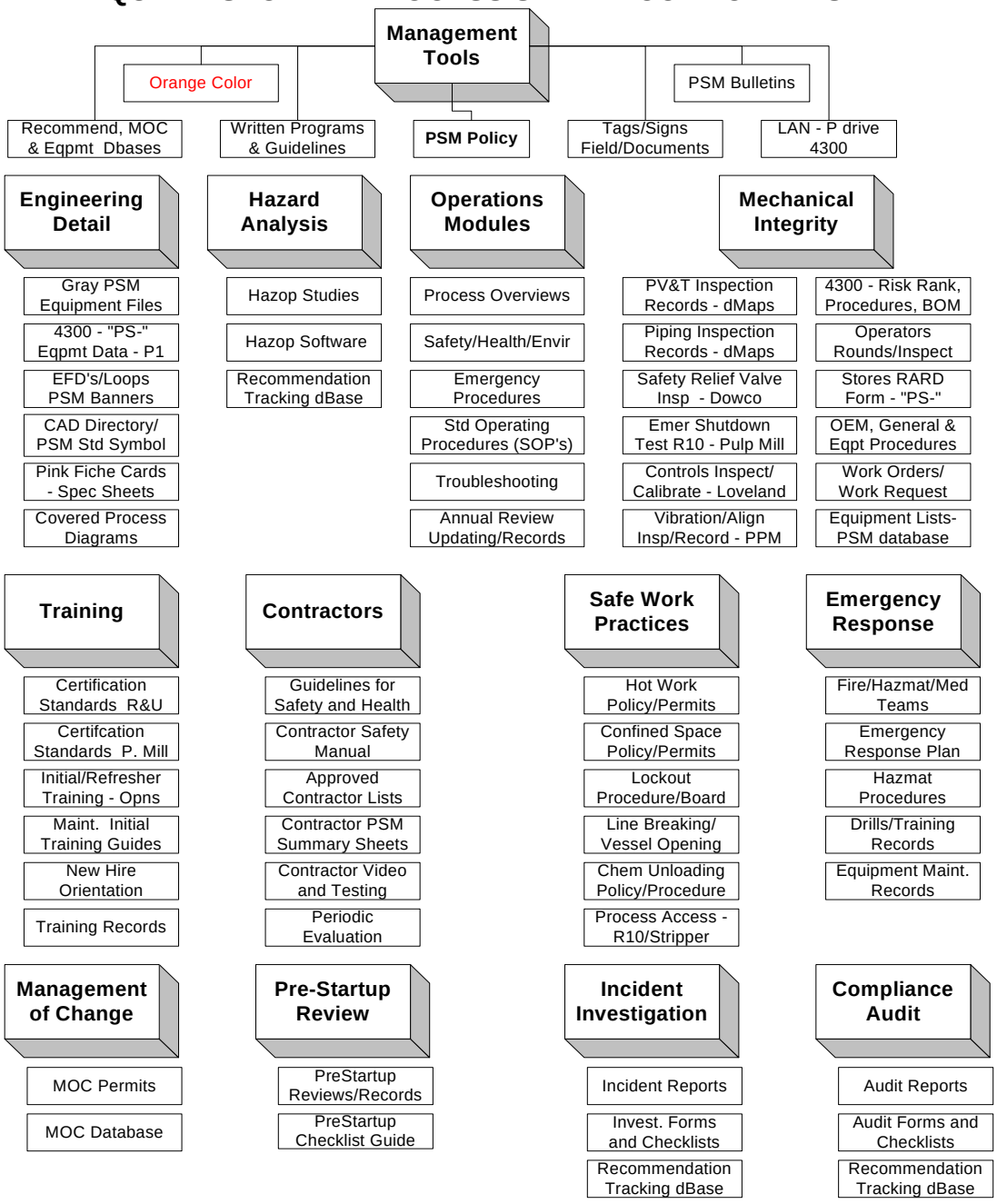
C. The EHS Manager, in conjunction with the Process Safety Coordinator, is responsible for overseeing the ongoing management of the Process Safety program and advising the affected department managers on issues which arise.

D. The Process Safety Coordinator and department lead personnel are responsible for the daily coordination of the program and supporting resolution of issues which arise in their respective departments.

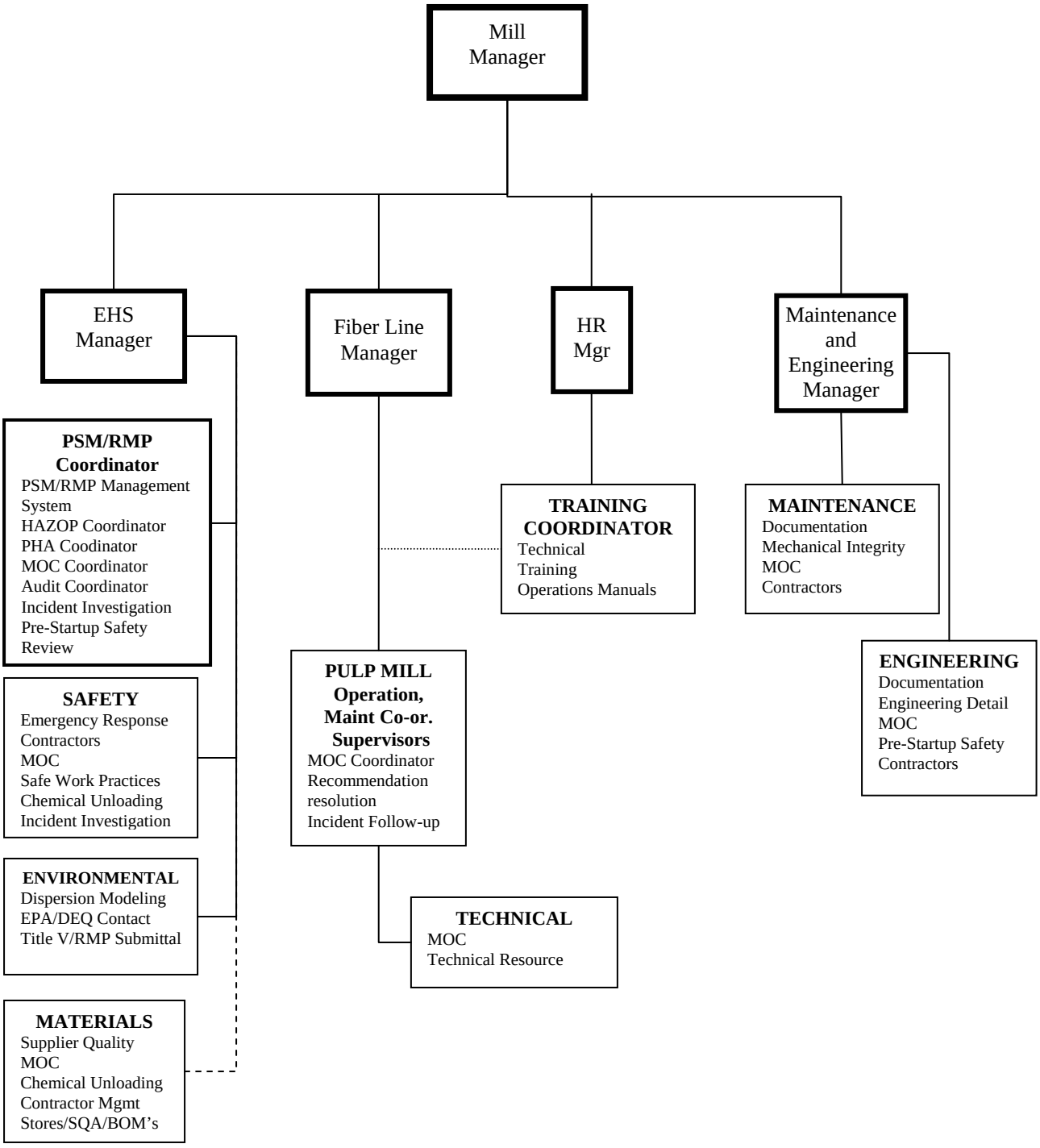
E. The Process Safety Coordinator is responsible for routinely advising mill management on the status of the program and the interactions of the involved departments with respect to Process Safety.

F. The Process Safety Coordinator has responsibility for ensuring this document, and documents in the Process Safety Management written program, reflect current practices.

APPENDIX A
QUINNESEC MILL PROCESS SAFETY COMPONENTS



APPENDIX B
QUINNESEC MILL PROCESS SAFETY ORGANIZATION



APPENDIX C
ROLES AND RESPONSIBILITIES

PSM AREA **MILL DEPT**	Engineering Detail	Hazard Analysis (Hazop, etc.)	Operations Modules	Mechanical Integrity
Engineering	- Technical Design - Eqpmt File/Design Criteria - Eqpmt Specs - 4300 - EngrDiagrams/Dwg - System Specifications	- Prestudy Hazop verification - Participate (ME/EE) - Resolve Issues	- Assist Operations	- NewEqpmt QA/QC - Following Specs - Start-Up Checklist
Operations	- Assist Engineering	- Prestudy verifcation - Participate - Resolve Issues	Develop/Maintain: - Operating Criteria - Process Overview - Safety/Health - Oper Procedure - Emer Procedure - Troubleshooting - Annual Review	- Routine Rounds - Emergency Shutdown Testing - RARD Input
Maintenance	- Build 4300 Information - Assist Engineering	- Pre-study Hazop verification - Participate (Mech/E&I) - Resolve Issues	- Assist Operations	- Risk Review - Inspection/Tests - Procedure(PPM & Repair) & Programs - Scheduling/Records - RARD/Spares/BOM's-Entry - QA/QC - Work Order
Process Technical Services	- Logic/ Control Diagrams - Material/Energy Balances - Support design changes, technical resource	- Participate in studies - Resolve Issues	- Assist Operations	
Materials			- Chemical Supplier SQA	- P.O. Identification - RARD /Symbol Mgmt. - QA/QC - Incoming Eqpmt
EHS	- Assist with regulatory design requirements (NFPA, OSHA, ANSI, etc)	- Participate as Needed - Resolve Issues	- Support safety matl development - Assist with job task reviews	- Safety equipment inspections - Fire system inspections
PSM Coordinator	- Design Resource	-Lead/Coordinate/Track - 5 yr minimum update	- Content/ Consistency -Initiate Annual Review	- Risk Assessment Resource

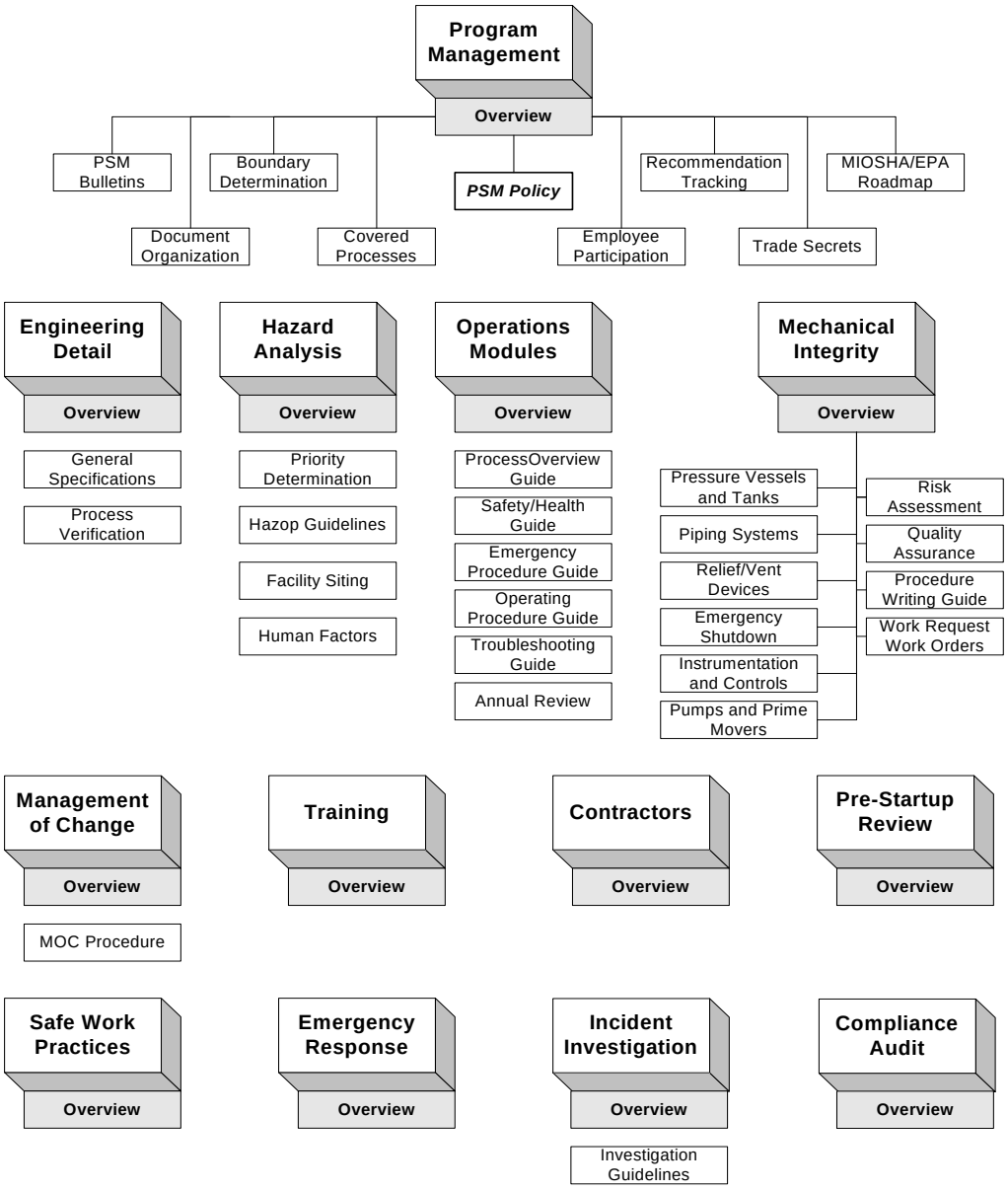
APPENDIX C – cont.
ROLES AND RESPONSIBILITIES

PSM AREA **MILL DEPT**	Management of Change (Impact/Updates)	**Training (Department Tng)**	Contractors	Pre-Start Up Safety Review
Engineering	- Equipment Change - Facility Change - Intlerlock/Logic Change - Technical Review of Changes Update Engr Documentation Assist other depts. w/updates	-PSM Overview -MOC System -Process Specific -New System Support Track	- Qualification Reviews - Bid Package Reqmts include PSM details -Pre-job checklist - Field audits	- Verify specs are followed - Participate on Punchlist - Performance Verification - Complete engr. details
Operations	- Procedure Change - Op. Range/Limits Change - Equipment Change - Chemical/Technology Change Update Oper Documentation Train as needed Update Engr. Doct.if needed	- PSM Overview - MOC System - New System Trng - New/TransferTrng (Cert.) - Refresher Trng - MOC Updates Verify/Track	- Pre-Job analysis - Process Access	- Participate on Punchlist - Complete Operating Modules - Train before startup
Maintenance	-Equipment Change -Procedure Change -Facility Change Update Maint Documentation Train as needed Update Engr. Doct - if needed	- PSM Overview - MOC System - New System Trng - New/Transfer Trng (Cert) - MOC Updates Verify/Track	- Bid Package Reqmts include PSM details - Pre-Job checklist - Qualified Contractors - Field audits	- Eqpmt Verification - Participate on Punchlist - Establish Maint Practices and Procedures - Train before startup
Process Technical Services	-Op Range/Limits Change -Interlock/Logic Changes -Procedure Change -Trials Update P.Ctrl. Documentation Train as needed Update Engr. Doct. - if needed	- PSM Overview - MOC System - Process Training Verify/Track		- Participate as Needed - Provide technical support for operations
Systems	- dBase for MOC tracking	- Mill Training Record database	- Access to Qualfied Ctr list to mill personnel	
Materials	- Chemical Supplier Changes Update Symbol/Order Detail	- PSM Overview - MOC System Verify/Track	- Contractor Evaluation - Qualified Ctr List	- Notify Contractors, Vendors of process and requirements
EHS	- Facility Change - Safety Eqpmt Change - Chem Hazard Change Update EHS Documentation	- PSM Overview - MOC System - Process Training Verify/Track	- Contractor Evaluation - Qualified Ctr List - Pre-Job Safety Review - Safety Orientation	- Update safety and emergency procedures for new system
PSM Coordinator	- MOC Coordinator/Tracking - Update Program	- ID Training Needs - Develop PSM package	- Support EHS	- Lead Prestart-Up Checklist - Resolve key issues

APPENDIX C – cont.
ROLES AND RESPONSIBILITIES

PSM AREA **MILL DEPT**	Safe Work Practices	Emergency Response	Incident Investigation	Compliance Audits
Engineering	- Ensure mill safety policies are followed	- Know safety equipment, evac routes and alarms for project areas - Provide technical support	- Provide technical support for investigations - Conduct investigations for project work	- Participate in reviews - Resolve recs.
Operations	- Ensure mill safety policies are followed - Department specific criteria (lockout, etc)	- Know emergency shutdown procedures, safety eqpmt, alarms, communication and response for releases	- Conduct investigations of incident and near misses (personnel and process) - Provide input to ensure root cause identification	- Participate in reviews - Resolve recs.
Maintenance	- Ensure mill safety policies are followed - Process specific criteria (hot work, lockout, line break, etc.)	- Know safety equipment, evac routes, alarms and communication for work areas	- Conduct investigations of incident and near misses (personnel and process) - Provide input to ensure root cause identification	- Participate in reviews - Resolve recs.
Process Technical Services	- Follow mill safety policies	- Know safety equipment, evacuation routes and alarms for work areas	- Provide technical support for process investigations	- Participate in reviews - Resolve recs.
Systems	- Provide network access to mill safety policies	- Provide network access to Emerg. Response Plan	- dbase for Inc. Invest tracking	
Materials	- Advise contractors, vendors of mill safety policies		- Provide support for Inc. Invest. involving contractors or vendors.	- Participate in reviews - Resolve recs.
EHS	-Review /recommend revisions, additions, deletions of policy language to reflect current mill status/regs.	- Emerg. Response Plan - Provide training - Coord. communication and alarm needs	- Provide technical support for incidents involving personnel	- Participate in reviews - Resolve recs.
PSM Coordinator	- Support EHS role	- Support EHS role	-Lead/Coord/Communicate - Track resolution	- Lead/coordinate/track - Initiate follow -up

APPENDIX D
PROCESS SAFETY WRITTEN PROGRAMS & GUIDELINES



Note: This document is the overview for the **Program Management** section. Other overviews and written programs describe how the specific elements are addressed.

I. INTENT

The intent of the Emergency Response requirement is to ensure that appropriate procedures, equipment, training and communication are in place to ensure timely and effective response in the event chemical release for protecting public health and the environment.

The purpose of this document is to identify the approach taken by the Quinnesec Mill to comply with 40CFR68, Subpart E - Emergency Response.

II. SCOPE

For the purposes of the RMP, the Quinnesec Mill emergency response programs are limited to those activities which ensure proper and effective response for releases of chlorine dioxide.

III. PRACTICE

A. General Practice

1. The Quinnesec Mill has an established Emergency Response Plan, in accordance with requirements of 1910.38, 1910.120 and 40CFR68 which is available to all employees, department managers and supervisors. The plan addresses responses to a chlorine dioxide release.

2. The Quinnesec Mill has an established Pollution Incident Prevention Plan (PIPP) in compliance with the requirements DEQ Water Resources Protection Rules, Part 5, R324.2001-2009. This plan works in conjunction with the Emergency Response Plan to provide response criteria for releases of hazardous substances, including notification of local and state agencies.

3. The Emergency Response Board, consisting of both hourly and salary personnel, provides input for administering the Emergency Response Plan. This subcommittee provides input to the mill Safety Review Board, a management advisory group.

4. Additionally, the Dickinson County Local Emergency Preparedness Committee (LEPC) retains a copy of the Quinnesec Mill off-site plan, which identifies the appropriate actions to take in the event of chemical release. This plan has been reviewed and approved by the State Emergency Response Commission (SERC).

B. Response Capabilities

1. The mill has four emergency response teams to respond to chemical releases:

    a) Fire
    b) Hazmat
    c) Rescue
    d) Medical

2. Emergency response teams consist of personnel from Plant Protection and mill department personnel. Coverage is for each of four operating shifts, 24 hours/day, and 7 days per week. Personnel can be contacted either by pager or radio in the event of emergency.

3. Ambulance, fire pumper truck, mini-pumper, Hazmat trailer and ancillary equipment are provided for response. Additionally, Self-Contained Breathing Apparatus and supporting personal protective equipment (PPE) is provided for response to chemical emergencies.

4. An incident command system (ICS) is used to ensure proper communication and lines of authority among response team members in the event of chemical release.

C. Required Items

1. Notification of public and local emergency response agencies occurs anytime the potential for a chemical release to go off-site is identified by emergency response personnel. This is identified by a Standard Operating Procedure (S.O.P.'s) in the Emergency Response Plan.

2. Proper first-aid and emergency medical treatment procedures for chlorine dioxide are documented in the Materials Safety Data Sheets (MSDS), which are retained in the Safety department and under the Emergency Response Plan.

3. Procedures for responding to small release of chlorine dioxide are identified in the operating manuals. Large releases are identified in the Emergency Response Plan.

4. Procedures for use, inspection, maintenance and testing of equipment for chemical release response are part of the Emergency Response Standard Operating Procedures (S.O.P.'s) retained by the Safety department.

5. Routine training is provided for all employees in relevant procedures for chemical release. This includes training on the emergency response plan and chemical alarm procedures for all employees, including appropriate evacuation. Emergency response team members receive regular training, commensurate with the level of response they are expected to provide in an emergency situation. Training requirements are identified in the Emergency Response Standard Operating Procedures (S.O.P.'s) retained by the Safety department

6. The Emergency Response Plan is coordinated with the mill offsite plan which is retained by the Dickinson County LEPC. Offsite consequence analysis results were communicated and reviewed with the LEPC director during the implementation of the RMP.

IV. RESPONSIBILITY

A. Safety has overall responsibility for managing the emergency response program, procedures, practices, maintenance, training, updating, documentation and other aspects of administering emergency response for the mill.

B. Environmental is responsible periodic review and updating of the PIPP.

C. The Emergency Response Board is responsible for providing guidance on emergency response plans

D. Responsibility for response duties and roles is as outlined in the Emergency Response Plan.

End of Document

I. INTENT

The intent of the RMP submittal is to ensure the local emergency response officials and the general public has access to information relating to the location management plan for risks associated with hazardous chemicals.

This document identifies the key requirements for submittal of the RMP, as outlined by 40CFR68, Subpart G - Risk Management Plan.

II. SCOPE

The RMP submittal is limited to those processes identified by the Quinnesec Mill as containing listed chemicals, meeting the process definition and threshold quantities as identified by 40CFR68.

III. PRACTICE

A. General Practice

1. The Quinnesec Mill originally submitted the RMP to the EPA prior to the June 21, 1999 deadline. The submittal covered the required items listed under 40CFR68.155 to 40CFR 68.190. The covered processes were chlorine - raw water, chlorine - clearwell and the chlorine dioxide system. In 2014, the RMP submittal was revised to only include chlorine dioxide.

2. The original submittal included the following elements:

    - Registration Information
    - Worst Case Scenario
    - Alternate Release Scenario
    - Level 3 Prevention Program
    - Executive Summary

3. The submittal did not include any data on accident history, as there was not an accident history (per EPA definition) for any of the covered processes for the five year proceeding the date of the submittal.

4. The submittal did not include any data for flammable gases, as no covered processes with flammable gases were identified.

5. The submittal did not include any Program Level 1 or 2 processes, as no processes meeting these requirements existed at the time of the original submittal.

B. Certification
   1. To ensure the completeness and accuracy of the submittal, the mill contracted an outside consultant to perform reviews and provide feedback.

   2. The original submittal was accompanied by a letter of certification, signed by the operations manager, identifying the accuracy and completeness of the submittal.

C. Updates to the Original RMP Submittal
   1. The RMP must be updated and submitted to EPA according to the following conditions:
      a) Within five years of its initial submission, or most recent update as required by items b) through g) below
      b) No later than three years after a newly regulated substance is first listed by EPA (and is identified by the mill)
      c) No later than the date on which a new regulated substance is first present in an already covered process at the mill
      d) No later than the date on which a regulated substance is first present in a new process at the mill.
      e) Within six months of a change that requires a revised HAZOP.
      f) Within six months of a change that requires a revised Off-Site Consequence Analysis
      g) Within six months of any change that modifies the Program level (1, 2 or 3) of a process

   2. If the Quinnesec Mill no longer is subject to 40CFR68, a revised RMP must be submitted to EPA with six months indicating the stationary source is no longer covered.

D. Status With Respect to Title V Permit Application
   1. For the purposes of the RMP submittal, the Title V facility number was obtained from the Michigan Department of Environmental Quality (MDEQ).

   2. Although the Title V permit was not issued at the time of the original submittal, the RMP will become part of the Title V permit once it is issued by the State of Michigan, per 40CFR68 requirements.

IV. RESPONSIBILITY

A. Environmental is responsible for the submission of the RMP to EPA, including any updates required for the plan.

B. The Mill Manager is responsible for certifying the RMP submittal.

Section 1. Registration Information

Reason for Resubmission	Process no longer covered (source has other processes that remain covered) (40 CFR 68.190(b)(7))
1.1 Source Identification	
1.1.a. Facility Name	Verso Paper Quinnesec Mill
1.1.b. Parent Company #1 Name	Verso Paper Corporation
1.1.c. Parent Company #2 Name	
1.2 EPA Facility Identifier	100000046835
1.3 Other EPA Systems Facility Identifier	49876CHMPNUSHIG
1.4 Dun and Bradstreet Numbers (DUNS)	
1.4.a. Facility DUNS	038771036
1.4.b. Parent Company #1 DUNS	826480902
1.4.c. Parent Company #2 DUNS	
1.5 Facility Location	
1.5.a. Street - Line 1	W6791 U.S. Highway 2
1.5.b. Street - Line 2	
1.5.c. City	Quinnesec
1.5.d. State	MI
1.5.e. Zip Code - Zip +4 Code	49876
1.5.f. County	DICKINSON
1.5.g. Facility Latitude (in decimal degrees)	45.795587
1.5.h. Facility Longitude (in decimal degrees)	-87.958358
1.5.i. Method for determining Lat/Long	Interpolation - Satellite
1.5.j. Description of location identified by Lat/Long	Storage Tank
1.5.k. Horizontal Accuracy Measure (meters)	1
1.5.l. Horizontal Reference Datum Code	North American Datum of 1983
1.5.m. Source Map Scale Number	
1.6 Owner or Operator	
1.6.a. Name	Verso Paper Corp.
1.6.b. Phone	(877) 837-7606
1.6.c. Street - Line 1	6775 Lenox Center Court
1.6.d. Street - Line 2	Suite 400
1.6.e. City	Memphis
1.6.f. State	TN
1.6.g. Zip Code - Zip +4 Code	38115
Foreign Country	
Foreign State/Province	
Foreign Zip/Postal Code	
1.7 Name, title and email address of person or position responsible for RMP (part 68) implementation	
1.7.a. Name of person	Jeff Maule
1.7.b. Title of person or position	EHS Manager
1.7.c. Email address of person or position	Jeff.Maule@VersoPaper.com

Section 1. Registration Information

1.8 Emergency Contact	
1.8.a. Name	Jeff Maule
1.8.b. Title of person or position	EHS Manager
1.8.c. Phone	(906) 779-3370
1.8.d. 24-Hour Phone	(906) 779-3299
1.8.e. 24-Hour Phone Extension/PIN #	
1.8.f. Email address for emergency contact	Jeff.Maule@VersoPaper.com
1.9 Other Points of Contact	
1.9.a. Facility or Parent Company E-mail Address	
1.9.b. Facility Public Contact Phone Number	(906) 779-3271
1.9.c. Facility or Parent Company WWW Homepage Address	www.VersoPaper.com
1.10 Local Emergency Planning Committee (LEPC)	Dickinson County LEPC
1.11 Number of fulltime equivalent (FTEs) employees on site	465
1.12 Covered by	
1.12.a. OSHA PSM	Y
1.12.b. EPCRA section 302	Y
1.12.c. CAA Title V Air Operating Permit Program	Y
1.12.d. Air Operating Permit ID #	199600345
1.13 OSHA Star or Merit Ranking	Y
1.14 Last Safety Inspection (by an External Agency) Date	06/09/2011
1.15 Last Safety Inspection Performed by an External Agency	State occupational safety agency
1.16 Will this RMP involve Predictive Filing?	
1.18 RMP Preparer Information	
1.18.a. Name	Carla Kramer
1.18.b. Phone	(906) 779-3576
1.18.c. Street - Line 1	PO Box 191
1.18.d. Street - Line 2	
1.18.e. City	Norway
1.18.f. State	MI
1.18.g. Zip	49870
Foreign Country	
Foreign State/Province	
Foreign Zip Code	

Section 1. Registration Information

Section 1.17 Process Specific Information

Process 1

Process ID #	1000056759		
Process Description	Chlorine Dioxide System		
1.17.a. Program Level	3		
1.17.b. NAICS Code(s)			
322121 (Paper (except Newsprint) Mills)			
1.17.c. Chemical(s)			
	Chemical Name	CAS Number	Quantity
	Chlorine dioxide [Chlorine oxide (ClO2)]	10049-04-4	20000

Section 2. Toxics: Worst Case

Scenario 1

Process Name	Chlorine Dioxide System
2.1 Chemical	
2.1.a. Name	Chlorine dioxide [Chlorine oxide (ClO2)]
2.1.b. Percent Weight of Chemical	1.2
2.2 Physical State	Liquid
2.3 Model Used	Degadis
2.4 Scenario	Liquid spill and vaporization
2.5 Quantity Released (lbs)	10000
2.6 Release Rate (lbs/min)	200
2.7 Release Duration (mins)	60
2.8 Wind Speed (meters/sec)	1.5
2.9 Atmospheric stability class	F
2.10 Topography	Rural
2.11 Distance to endpoint (miles)	5.8
2.12 Estimated residential population within distance to endpoint (numbers)	15000
2.13 Public receptors within distance to endpoint	
2.13.a. Schools	Y
2.13.b. Residences	Y
2.13.c. Hospitals	Y
2.13.d. Prison/Correctional Facilities	Y
2.13.e. Recreational Areas	Y
2.13.f. Major commercial, office or industrial areas	Y
2.13.g. Other	
2.14 Environmental receptors within distance to endpoint	
2.14.a. National or State Parks, Forests or Monuments	
2.14.b. Officially Designated Wildlife Sanctuaries, Preserves or Refuges	
2.14.c. Federal Wilderness Area	
2.14.d. Other	
2.15 Passive mitigation considered	
2.15.a. Dikes	Y
2.15.b. Enclosures	
2.15.c. Berms	
2.15.d. Drains	Y
2.15.e. Sumps	Y
2.15.f. Other	
2.16 Graphic file	

Section 3. Toxics: Alternative Release

Scenario 1

Process Name	Chlorine Dioxide System
3.1 Chemical	
3.1.a. Name	Chlorine dioxide [Chlorine oxide (ClO2)]
3.1.b. Percent Weight of Chemical	1.2
3.2 Physical State	Liquid
3.3 Model Used	Safer Trace
3.4 Scenario	Pipe leak
3.5 Quantity Released (lbs)	300
3.6 Release Rate (lbs/min)	10
3.7 Release Duration (mins)	30
3.8 Wind Speed (meters/sec)	3
3.9 Atmospheric stability class	D
3.10 Topography	Rural
3.11 Distance to endpoint (miles)	0.35
3.12 Estimated residential population within distance to endpoint (numbers)	0
3.13 Public receptors within distance to endpoint	
3.13.a. Schools	
3.13.b. Residences	
3.13.c. Hospitals	
3.13.d. Prison/Correctional Facilities	
3.13.e. Recreational Areas	
3.13.f. Major commercial, office or industrial areas	
3.13.g. Other	Adjacent landowners
3.14 Environmental receptors within distance to endpoint	
3.14.a. National or State Parks, Forests or Monuments	
3.14.b. Officially Designated Wildlife Sanctuaries, Preserves or Refuges	
3.14.c. Federal Wilderness Area	
3.14.d. Other	
3.15 Passive mitigation considered	
3.15.a. Dikes	
3.15.b. Enclosures	
3.15.c. Berms	
3.15.d. Drains	Y
3.15.e. Sumps	
3.15.f. Other	Containment Curbs
3.16 Active mitigation considered	
3.16.a. Sprinkler systems	
3.16.b. Deluge systems	
3.16.c. Water curtain	
3.16.d. Neutralization	
3.16.e. Excess flow valve	
3.16.f. Flares	

Section 3. Toxics: Alternative Release

3.16.g. Scrubbers	Y
3.16.h. Emergency shutdown systems	Y
3.16.i. Other	Area monitors, automatic relief systems
3.17 Graphic file	

Section 7. Prevention Program: Program Level 3

Program 1

Prevention Program Description: Chlorine Dioxide System	
7.1 NAICS Code for process	
7.1.a. Process Name	1000056759 (Chlorine Dioxide System)
7.1.b. NAICS	322121 (Paper (except Newsprint) Mills)
7.2 Chemicals	
Chlorine dioxide [Chlorine oxide (ClO2)]	
7.3 Date on which the safety information was last reviewed or revised	12/18/2012
7.4 Process Hazard Analysis (PHA)	
7.4.a. Date of last PHA or PHA update	01/30/2013
7.4.b. Technique used	
7.4.b.1. What if	
7.4.b.2. Checklist	Y
7.4.b.3. What if/Checklist Combined	
7.4.b.4. HAZOP	Y
7.4.b.5. Failure mode & effects analysis	
7.4.b.6. Fault tree analysis	
7.4.b.7. Other	
7.4.c. Expected or actual date of completion of all changes resulting from last PHA or PHA update	03/08/2013
7.4.d. Major hazards identified	
7.4.d.1. Toxic release	Y
7.4.d.2. Fire	Y
7.4.d.3. Explosion	
7.4.d.4. Runaway reaction	Y
7.4.d.5. Polymerization	
7.4.d.6. Overpressurization	Y
7.4.d.7. Corrosion	Y
7.4.d.8. Overfilling	Y
7.4.d.9. Contamination	Y
7.4.d.10. Equipment failure	Y
7.4.d.11. Loss of cooling, heating, electricity, instrument air	Y
7.4.d.12. Earthquake	
7.4.d.13. Floods	
7.4.d.14. Tornado	Y
7.4.d.15. Hurricanes	
7.4.d.16. Other	
7.4.e. Process controls in use	
7.4.e.1. Vents	Y
7.4.e.2. Relief valves	Y
7.4.e.3. Check valves	Y
7.4.e.4. Scrubbers	Y
7.4.e.5. Flares	
7.4.e.6. Manual shutoffs	Y

Section 7. Prevention Program: Program Level 3

7.4.e.7. Automatic shutoffs	Y
7.4.e.8. Interlocks	Y
7.4.e.9. Alarms and procedures	Y
7.4.e.10. Keyed bypass	
7.4.e.11. Emergency air supply	
7.4.e.12. Emergency power	Y
7.4.e.13. Backup pump	Y
7.4.e.14. Grounding equipment	Y
7.4.e.15. Inhibitor additions	
7.4.e.16. Rupture disks	Y
7.4.e.17. Excess flow device	
7.4.e.18. Quench system	Y
7.4.e.19. Purge system	Y
7.4.e.20. None	
7.4.e.21. Other	
7.4.f. Mitigation systems in use	
7.4.f.1. Sprinkler system	Y
7.4.f.2. Dikes	Y
7.4.f.3. Fire walls	
7.4.f.4. Blast walls	
7.4.f.5. Deluge system	Y
7.4.f.6. Water curtain	
7.4.f.7. Enclosure	Y
7.4.f.8. Neutralization	
7.4.f.9. None	
7.4.f.10. Other	Curbing and Sewers
7.4.g. Monitoring/detection systems in use	
7.4.g.1. Process area detectors	Y
7.4.g.2. Perimeter monitors	
7.4.g.3. None	
7.4.g.4. Other	Personal Monitors
7.4.h. Changes since last PHA update	
7.4.h.1. Reduction in chemical inventory	
7.4.h.2. Increase in chemical inventory	
7.4.h.3. Change in process parameters	Y
7.4.h.4. Installation of process controls	Y
7.4.h.5. Installation of process detection systems	
7.4.h.6. Installation of perimeter monitoring systems	
7.4.h.7. Installation of mitigation systems	
7.4.h.8. None recommended	
7.4.h.9. None	
7.4.h.10. Other	
7.5 Date of most recent review or revision of operating procedures	04/14/2014
7.6 Training	

Section 7. Prevention Program: Program Level 3

7.6.a. Date of most recent review or revision of training programs	01/30/2013
7.6.b. Type of training provided	
7.6.b.1. Classroom	
7.6.b.2. On the job	Y
7.6.b.3. Other	Certification standards and operating manual review.
7.6.c. Type of competency testing used	
7.6.c.1. Written test	
7.6.c.2. Oral test	Y
7.6.c.3. Demonstration	Y
7.6.c.4. Observation	Y
7.6.c.5. Other	Certification boards, computer based training.
7.7 Maintenance	
7.7.a. Date of most recent review or revision of maintenance procedures	02/02/2012
7.7.b. Date of most recent equipment inspection or test	06/27/2014
7.7.c. Equipment most recently inspected or tested (equipment list)	Chlorine Dioxide Sensor
7.8 Management of change	
7.8.a. Date of most recent changes that triggered management of change procedures	02/21/2014
7.8.b. Date of most recent review or revision of management of change procedures	11/26/2012
7.9 Date of most recent pre-startup review	02/14/2014
7.10 Compliance audits	
7.10.a. Date of most recent compliance audits	02/02/2012
7.10.b. Expected or actual date of completion of all changes resulting from the most recent compliance audits	12/18/2012
7.11 Incident investigation	
7.11.a. Date of most recent incident investigation	05/03/2013
7.11.b. Expected or actual date of completion of all changes resulting from the incident investigation	06/01/2013
7.12 Date of most recent review or revision of employee participation plans	11/21/2012
7.13 Date of most recent review or revision of hot work permit procedures	11/19/2012
7.14 Date of most recent review or revision of contractor safety procedures	11/26/2012
7.15 Date of most recent evaluation of contractor safety performance	03/19/2014

Section 9. Emergency Response

9.1 Written emergency response (ER) plan	
9.1.a. Is your facility included in the written community emergency response plan?	Y
9.1.b. Does your facility have its own written emergency response plan?	Y
9.2 Does your facility's ER plan include specific actions to be taken in response to accidental releases of regulated substances?	Y
9.3 Does your facility's ER plan include procedures for informing the public and local agencies responding to accidental releases?	Y
9.4 Does your facility's ER plan include information on emergency health care?	Y
9.5 Date of most recent review or update of your facility's ER plan	04/22/2014
9.6 Date of most recent ER training for your facility's employees	05/21/2014
9.7 Local agency with which your facility's ER plan or response activities are coordinated	
9.7.a. Name of agency	Dickinson County LEPC
9.7.b. Phone number	(906) 779-1731
9.8 Subject to	
9.8.a. OSHA Regulations at 29 CFR 1910.38	Y
9.8.b. OSHA Regulations at 29 CFR 1910.120	Y
9.8.c. Clean Water Act Regulations at 40 CFR 112	Y
9.8.d. RCRA Regulations at 40 CFR 264, 265, 279.52	Y
9.8.e. OPA-90 Regulations at 40 CFR 112, 33 CFR 154, 49 CFR 194, 30 CFR 254	
9.8.f. State EPCRA Rules of Laws	Y
9.8.g. Other	MIOSHA Part 91-Process Safety

Executive Summary

RISK MANAGEMENT PLAN
VERSO PAPER
QUINNESEC, MICHIGAN
SEPTEMBER 2006 updated 2011, 2014
EPA Facility Identifier: 1000 0004 6835

1. Executive Summary

Verso Paper owns and operates the Quinnesec Mill, an integrated pulp and paper facility located approximately 2 miles east of Quinnesec, Michigan. The Quinnesec Mill is committed to operating in a manner that is safe for employees, the public, and the environment. As a demonstration of that commitment, Verso Paper has developed and implemented Environmental, Health and Safety Policies to serve as guiding principles for all of it's employees and operations. Following these policies is the responsibility of every employee.

As part of this commitment, a system has been established to help ensure safe operation of the processes at this facility. One component of this system is a risk management program (RMP) that helps manage the risks at the Quinnesec Mill and that complies with the requirements of the Environmental Protection Agency's (EPA's) regulation 40 CFR part 68, "Accidental Release Prevention Requirements: Risk Management Programs" (the RMP rule). One of the requirements of the RMP rule is to submit a risk management plan (RMPlan) describing the risk management program. This document is intended to satisfy the RMPlan requirement of the RMP rule and to provide the public with a description of the risk management program at the Quinnesec Mill.

The risk management program consists of three elements;
- A hazard assessment to help understand the potential offsite consequences of hypothetical accidental releases including a history of accidents that have occurred during the last five years associated with the use of substances regulated by the RMP rule;
- A prevention program to help maintain and safely operate the processes containing more than a threshold quantity of a regulated substance; and
- An emergency response program to guide response to an accidental release of a regulated substance.

Information further describing these elements is provided in this RMPlan.

Although the risk management program helps provide assurance that the facility is maintained and operated in a safe manner, it is only one component of the safety program at the Quinnesec Mill. In fact, a comprehensive safety program is in place establishing many levels of safeguards against release of a hazardous substance and injuries and damage from a release of a hazardous substance.

Hazardous substance uses are limited at the Quinnesec Mill. Before using a hazardous substance, less hazardous alternatives are considered. Part of the RMP compliance philosophy has been the reduction of the use of hazardous substances covered under this regulation. When a hazardous substance is used, considerations are made for the potential for this substance to adversely affect mill employees, the public, and the environment and steps are taken to prevent any such effects.

1.1 Accidental Release Prevention and Emergency Response Policies

The Quinnesec Mill is committed to the safety of employees and the public, and the preservation of the environment through the prevention of accidental releases of hazardous substances. The mill implements reasonable controls to prevent foreseeable releases of hazardous substances. These controls include training programs for personnel; programs to help ensure safety in the design, installation, operation, and maintenance of processes, and programs to evaluate hazards.

In the event of an accidental release emergency procedures are enacted to control and contain the release in a manner that will minimize potential injury to employees, the public or the environment. The mill provides response training to employees, designates an emergency response coordinator to oversee response activities, and coordinates response efforts with the local fire department. The Quinnesec Mill maintains a Hazardous Materials Response team that is trained and equipped to respond to on-site chemical releases. Response activities have also been discussed with the LEPC.

1.2 Regulated Substances

The Quinnesec Mill is an integrated pulp and paper mill primarily involved in the manufacture of bleached pulp and related finished paper products. As part of this manufacturing process, regulated substances are handled in sufficient quantities to be covered by the RMP rule. The RMP-covered substance is Chlorine Dioxide.

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1.3 Accidental Release Prevention Program and Chemical-specific Prevention

The Quinnesec Mill has always focused on ways to prevent accidental releases of hazardous substances. Beginning in 1992, the mill formally implemented the 14 elements of OSHA's Process Safety Management (PSM) prevention program. In 1996 the EPA RMP rule established Program 3 prevention requirements which were subsequently implemented by the mill.

Program 3 is essentially the same as OSHA PSM, except that the program also focuses on protecting the public and the environment. Program 3 requires 12 of the 14 elements of the OSHA PSM regulation and is the most rigorous prevention program.

The following sections briefly describe the elements of the prevention program that address the EPA RMP rule prevention program requirements.

1.3.1 Program 3 Prevention Program
The Quinnesec Mill Program 3 prevention program consists of the following 12 elements:

1. Process Safety Information: The mill maintains a variety of technical documents that are used to help ensure safe operation of the covered processes. These documents address the physical properties of hazardous substances handled in these processes, the operating parameters of the equipment/process and the design basis and configuration of process equipment.

Material safety data sheets (MSDSs) document the properties of hazardous substances handled at the mill including regulated substances in covered processes. Information on the technology and engineering design aspects include the operating parameters and the design basis and configuration of the process equipment.

Many of the operating parameters are included in the operating procedures to help with the safe operation of the process. These documents are used to train employees, to perform process hazards analyses, and to help maintain the equipment.

2. Process Hazard Analysis: The Quinnesec Mill performs and periodically updates process hazard analyses (PHAs) of the covered processes to help identify process hazards and generate recommendations that might improve the safe operation of the process. A team composed of personnel with engineering and process operating experience and a leader with process hazard analyses experience is assembled to analyze the hazards of the process. The hazard and operability (HAZOP) technique is used primarily, supplemented with checklists, to perform this analysis. The PHA team prepares a written report describing the results of the analysis, including a list of recommendations. Responsibility to resolve the recommendations is assigned to area personnel and, when appropriate, changes to enhance the safety of the process are implemented.

3. Operating Procedures: Mill operators, process engineers and supervisors work together to develop and maintain operating procedures to define how tasks related to process operations should be safely performed. The operating procedures are used to train employees and serve as reference guides for appropriate actions to take during both normal operations and process upsets.

Operating procedures have been developed and are maintained. The procedures cover all phases of operations, including initial startup, normal operations, normal shutdown, emergency shutdown, and startup following a shutdown. The operating procedures are used both to help in operating the covered processes and as a training guide for both new and experienced operators. Operating procedures are reviewed at least annually to ensure they reflect current operating conditions.

4. Training: The mill trains workers to perform their assigned tasks safely and effectively. The training program includes both initial and refresher training that covers a general overview of the process, the properties and hazards of the substances in the process, and a detailed review of the process operating procedures and safe work practices. Oral reviews and written tests are used to verify that an employee understands the process operation prior to job assignment.

The operators are consulted annually during operating procedure reviews to evaluate the effectiveness and need for additional training. Recommendations from the operators are reviewed, and changes to the training program are implemented, as appropriate.

5. Mechanical Integrity: Mechanical integrity of process equipment is maintained to help prevent equipment failures that could endanger employees, the public, or the environment. This is accomplished by an inspection and testing program to help identify equipment deterioration and damage before the equipment fails, a quality assurance program to help ensure that new and replacement equipment meet the design standards required for service in the covered processes, and utilizing personnel who are specially trained to

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maintain process equipment.

6. Management of Change: The management of change program requires evaluation and approval of all proposed changes to chemicals, equipment, and procedures for a covered process to help ensure that the change does not negatively affect safe operations. Process changes that are determined to be a replacement in kind (e.g., replacing a valve with an identical valve) are allowed without completing a management of change form. All other changes must be reviewed through the management of change program. This ensures that inadvertent consequences of process changes are prevented, safety consequences of changes are addressed, affected process safety information and procedures are updated, and affected employees are notified of the changes.

7. Pre-startup Review: A safety review of a new or modified process is performed before the process is placed into service to help ensure that the process is safe to operate. This review confirms that an employee has completed the requisite training. The review also confirms that adequate safety, operating, maintenance, and emergency procedures are in place and that construction and equipment are in accordance with design specifications. A pre-startup review checklist is completed to document the review and to ensure that appropriate issues have been addressed.

8. Compliance Audit: Covered processes are audited to be certain that the prevention program is effectively addressing the safety issues for the covered processes. An audit team is assembled that includes personnel knowledgeable in the RMP rule and in the process. This team evaluates whether the prevention program satisfies the requirements of the RMP rule and whether the prevention program is sufficient to help ensure safe operation of the process. The results of the audit are documented, recommendations are resolved, and appropriate improvements to the prevention program are implemented.

9. Incident Investigation: An investigation is performed on incidents that could reasonably have resulted in a serious injury to personnel, the public, or the environment so that similar incidents can be prevented. Employees are trained to identify and report any incident requiring investigation. An investigation team is assembled, and the investigation is initiated within 48 hours of the incident. The results of the investigation are documented, recommendations are resolved, and appropriate process improvements are implemented.

10. Employee Participation: The Quinnesec Mill developed a written employee participation program for covered processes. This program helps ensure that employees participate in the development and continuous improvement of these prevention program elements. Employees are consulted on and informed about various aspects of the RMP rule prevention program, including PHAs and operating procedures, as well as access to information on the covered processes.

11. Hot Work Permits: The Quinnesec Mill uses a hot work permit program to control spark or flame producing activities that could result in fires or explosions in covered processes. The Hot Work Permit Form complies with OSHA's fire prevention and protection requirements in 29 CFR 1910.252(a). Personnel performing hot work are required to have an approved permit prior to beginning their work. Training in the use of the Hot Work Permit Form is included in the employee safe work practices orientation and refresher training is taken through computer based training periodically thereafter.

12. Contractors: Contractor Guidelines for Safety and Health outline expectations related to contractor work at the Quinnesec Mill including work on the covered processes. The program reviews the safety record of all contractors to help ensure that only contractors who can safely perform the desired job tasks are hired. Contract supervisors and employees are informed of the hazards of the process on which they work, safe work practices, emergency response procedures, and utilizing a contractor work permit system. Contractors' training documents and work performance are periodically reviewed to help ensure that safe practices are followed.

1.3.2 Program 2 Prevention Program
The Quinnesec Mill has no processes which qualify for the Program 2 Prevention Program.

1.3.3 Chemical-specific Prevention Steps
In addition to the required prevention program elements, additional safety features specific to Chlorine Dioxide are described here;

Chlorine Dioxide gas is produced on-site in the generator and piped to a water absorption column, where a 1.2-1.3 wt % chlorine dioxide solution is generated. Chlorine dioxide is stored as a dilute water solution to minimize the potential for serious incident or off-site impact. The process is located almost entirely indoors, which further reduces the hazard. Storage tanks are engineered specifically for chlorine dioxide service. The process uses an advanced control system, with emergency shutdowns, to ensure safe operation. Containment sewers and curbing are provided to minimize the extent of potential leaks. Detectors and alarms provide continuous monitoring for chlorine dioxide in the event of a release, providing early detection

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and helping to ensure quick response if an incident were to occur.

1.4 Five-Year Accident History

During the five year period prior to July 2014 there were no reportable incidents. The Quinnesec Mill is committed to maintaining a high level of safety performance.

1.5 Emergency Response Programs

A written emergency response program has been established to help safely respond to accidental releases of hazardous substances. The emergency response plan includes procedures for:

- Clear identification of communication, roles and responsibilities during an emergency event.
- Informing the LEPC about accidental releases that could reasonably result in offsite consequences.
- Providing proper first aid and emergency medical treatment to treat accidental human exposure to hazardous substances.
- Controlling and containing accidental releases of hazardous substances, including the use of specially trained Hazardous Material Response Teams and emergency response equipment.
- Inspecting and maintaining emergency response equipment.
- Reviewing and updating the emergency response plan.

The Quinnesec Mill maintains an emergency response team trained in these emergency response procedures. All personnel are trained in evacuation procedures. Emergency response drills are conducted periodically. The written emergency response plan complies with other federal contingency plan regulations (e.g., the OSHA regulations 29 CFR 1910.38(a), 29 CFR 1910.120(a)) and has been communicated to local emergency response officials and local fire departments. The Quinnesec Mill maintains a regular dialogue with the local fire officials and provides response information, as appropriate.

1.6 Planned Changes to Improve Safety

The Quinnesec Mill constantly strives to improve the safety of the regulated processes by following recommended safe practices, soliciting safety suggestions from employees, conducting hazard analysis studies and investigating process incidents. Two efforts that are continually underway include evaluation to find a cost-effective and technically feasible alternative to chlorine gas for water treatment and periodic internal audits to identify changes that enhance reliability through engineering and/or administrative controls.

1.7 RMP Data Reporting to EPA

The Chlorine Dioxide system includes the generator, storage tanks, and distribution piping.