SECTION F

PROCEDURES TO PREVENT HAZARDS

R 299.9504, R 299.9508 and 299.9606 and 40 CFR, Part 264.30 through 264.37 and 270.14(b)

PROCEDURES TO PREVENT HAZARDS
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TABLES

GENERAL INFORMATION: PREPAREDNESS AND PREVENTION

The Administrative Rules for Part 111, Hazardous Waste Management, of the Michigan Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, R 299.9504, R 299 9508 and 299.9606 and 40 CFR, Part 264.30 through 264.37, establish requirements for preparedness for and prevention of releases of hazardous wastes or constituents at hazardous waste management facilities.

This section addresses requirements for preparedness and prevention of releases of hazardous wastes or constituents EQD in Detroit, MI.

F-1 Required Equipment

(R 299.9606 and 40 CFR 264.32)

EQD Facility has been designed, constructed, maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil or surface water which could threaten human health or the environment. For each area on-site where hazardous waste is managed, the potential hazards have been identified, then minimized or controlled as shown in **Table F-1.** The actions to be taken in case of an emergency, regardless of cause (vehicle malfunction, airplane crash, tornado, etc.) are outlined in **Section G** the Contingency Plan.

F-1a Internal Communication System

(R299.9606 and 40 CFR 262.32(a))

EQD internal communications via two-way radio, cell phone, phone system, intercom system and manual fire/emergency evacuation alarm systems are capable of providing immediate emergency instruction to all facility personnel.

F-1b Emergency Response Communication System

(R299.9606 and 40 CFR 262.32(b))

EQD telephone system is capable of summoning emergency assistance from local police departments, fire departments, or state and local emergency response teams.

F-1c Fire, Spill and Decontamination Equipment

(R299.9606 and 40 CFR 262.32(c))

EQD emergency equipment includes spill control equipment and decontamination equipment, portable fire extinguishers, fire control equipment (including special extinguishing equipment such as foam, or dry chemicals, etc.) and basic extinguishing supplies such as sand. The location of this equipment at the EQD facility is shown on **Sheet R-1.**

F-1d Fire Suppression Systems

EQD fire suppression systems are shown on drawing **Sheets M-15 through M-24.**

F-1d(i) Chemical Fixation Building Dry Sprinkler System

The Chemical Fixation Building has a dry sprinkler system designed for a 0.20 gpm/ft² density for the most hydraulically remote 3,900 square feet. The system utilizes two risers that operate independently. System activation occurs when high heat causes a sprinkler head link to fail and release the compressed air within the sprinkler system. The loss of air pressure allows water to flow into the sprinkler system. A drop in water pressure will activate a 1000 gpm fire pump to ensure adequate water pressure. The UL, LLC© (UL) listed fire alarm panel will shutdown the Chemical Fixation Air Pollution Control System. The sprinkler system can also be manually activated at the riser assemblies located in the Fire Equipment Room. The sprinkler system meets applicable NFPA requirements for valve position and flow monitoring. The entire system is supervised by a UL listed fire alarm panel that can be remotely viewed from the Security office. The fire alarm panel notifies locally by audio/visual signals and remotely to a central alarm monitoring station. The fire alarm panel has battery back-up for continuous coverage during power outages.

F-1d(ii) North Container Storage Area AFFF Sprinkler System

The North Container Storage Area has an Aqueous Film Forming Foam (AFFF) sprinkler system designed for a 0.30 gpm/sq. ft. density for the most hydraulically remote 3,000 square feet. System activation is by a linear heat sensing cable mounted on the sprinkler system piping. Upon high heat, a solenoid valve releases the foam agent into the sprinkler system to flow to the sprinklers that have been activated. A drop in water pressure will activate a 1000 gpm fire pump to ensure adequate water pressure. The sprinkler system can also be manually activated at the UL listed fire alarm panel. The sprinkler system meets all current NFPA requirements for valve position and flow monitoring. It also uses compressed air in the sprinkler system to monitor for piping or sprinkler head damage. The entire system is supervised by a UL listed fire alarm panel that can be remotely viewed from the Security office. The fire alarm panel notifies locally by audio/visual signals and remotely to a central alarm monitoring station. The fire alarm panel has battery back-up for continuous coverage during power outages.

F-1d(iii) North Container Staging Area AFFF Sprinkler System

The North Container Staging Area has an AFFF sprinkler system designed for a 0.30 gpm/sq. ft. density for the most hydraulically remote 3,000 square feet. System activation is by a linear heat sensing cable mounted on the sprinkler system piping. Upon high heat, a solenoid valve releases the foam agent into the sprinkler system to flow to the sprinklers that have been activated. A drop in water pressure will activate a 1000 gpm fire pump to ensure adequate water pressure. The sprinkler system can also be manually activated at the UL listed fire alarm panel. The sprinkler system meets all current NFPA requirements for valve position and flow monitoring. It also uses compressed air in the sprinkler system to monitor for piping or sprinkler head damage.

The entire system is supervised by a UL listed fire alarm panel that can be remotely viewed from the Security office. The fire alarm panel notifies locally by audio/visual signals and remotely to a central alarm monitoring station. The fire alarm panel has battery back-up for continuous coverage during power outages.

F-1d(iv) Bulking Area AFFF Deluge System

The Bulking Area has an AFFF deluge system designed for a 0.30 gpm/ft² density. System activation is by manual activation of one of two pull stations. One pull station is located near the north end of the area and the other is located near the south end of the area. Upon activation, foam agent flows into the sprinkler system and discharges from the open sprinkler heads located on each side of the area. A drop in water pressure will activate a 1000 gpm fire pump to ensure adequate water pressure. The sprinkler system can also be manually activated at the UL listed fire alarm panel. The sprinkler system meets all current NFPA requirements for valve position and flow monitoring. The entire system is supervised by a UL listed fire alarm panel that can be remotely viewed from the Security office. The fire alarm panel notifies locally by audio/visual signals and remotely to a central alarm monitoring station. The fire alarm panel has battery back-up for continuous coverage during power outages.

F-1d(v) Chemical Fixation East Area AFFF Deluge System

The Chemical Fixation East Area has an AFFF deluge system designed for a 0.16 gpm/ft² density. System activation is by multi-spectrum flame detectors mounted over the tanks. Upon activation, foam agent flows into the sprinkler system and discharges from the open sprinkler heads located above the tanks. A drop in water pressure will activate a 1000 gpm fire pump to ensure adequate water pressure. The UL listed fire alarm panel will shutdown the Chemical Fixation Air Pollution Control System. The sprinkler system can also be manually activated at the UL listed fire alarm panel. The sprinkler system meets all current NFPA requirements for valve position and flow monitoring. The entire system is supervised by a UL listed fire alarm panel that can be remotely viewed from the Security office. The fire alarm panel notifies locally by audio/visual signals and remotely to a central alarm monitoring station. The fire alarm panel has battery back-up for continuous coverage during power outages.

F-1d(vi) Chemical Fixation West Area AFFF Deluge System

The Chemical Fixation West Area has an AFFF deluge system designed for a 0.16 gpm/ft² density. System activation is by multi-spectrum flame detectors mounted over the tanks. Upon activation, foam agent flows into the sprinkler system and discharges from the open sprinkler heads located above the tanks. A drop in water pressure will activate a 1000 gpm fire pump to ensure adequate water pressure. The UL listed fire alarm panel will shutdown the Chemical Fixation Air Pollution Control System. The sprinkler system can also be manually activated at the UL listed fire alarm panel. The sprinkler system meets all current NFPA requirements for valve position and flow monitoring. The entire system is supervised by a UL listed fire alarm panel that can be remotely viewed from the Security office. The fire alarm panel notifies locally by audio/visual signals and remotely to a central alarm monitoring station. The fire alarm panel has battery back-up for continuous coverage during power outages.

F-1d(vii) Fire Equipment Room Wet Sprinkler System

The Fire Equipment Room has a wet sprinkler system designed that is not hydraulically limited. System activation occurs when high heat causes a sprinkler head link to fail and release water. A drop in water pressure will activate a 1000 gpm fire pump to ensure adequate water pressure. The sprinkler system meets all current NFPA requirements for valve position and flow monitoring. The entire system is supervised by a UL listed fire alarm panel that can be remotely viewed from the Security office. The fire alarm panel notifies locally by audio/visual signals and remotely to a central alarm monitoring station. The fire alarm panel has battery back-up for continuous coverage during power outages.

F-1d(viii) T&P Wet Sprinkler System

The T&P Building has a wet sprinkler system designed for a 0.60 gpm/ft² density for the most hydraulically remote 2,833 square feet. System activation occurs when high heat causes a sprinkler head link to fail and release water. The sprinkler system meets all current NFPA requirements for flow monitoring and alarming. The system notifies locally by audio signals.

F-1d(ix) Lab Pack Dry Chemical System

The Lab Pack Pour-Up Area has an ABC-rated dry chemical fire suppression system. The system is composed of four independent systems, one of which discharges directly into the hood. System activation occurs when a link fails due to high heat and allows dry chemical to flow from the three 50 lb cylinders (25 lb cylinder for the hood). The system can also be manually activated. The system is supervised by a UL listed fire alarm panel that provides local audio/visual notification.

F-1d(x) Main Plant Wet Sprinkler System

The Main Plant Building has a wet sprinkler system that is not hydraulically limited. System activation occurs when high heat causes a sprinkler head link to fail and release water. The sprinkler system meets all current NFPA requirements for flow monitoring and alarming. The system notifies locally by audio signals.

F-1d(xi) Lab Hood Dry Chemical System

A selection of Lab Hoods have an ABC-rated dry chemical fire suppression system built into the hoods. System activation occurs when a link fails due to high heat and allows dry chemical to flow from the 21 lb cylinders. The system can also be manually activated.

F-1e Adequate Water Volume

(R299.9606 and 40 CFR 262.32(d))

EQD has water at adequate volume and pressure to supply water hose streams

F-2 Testing and Maintenance of Equipment

(R299.9606 and 40 CFR 262.33

All of the fire protection equipment, spill control equipment, decontamination equipment and the communications systems are tested and maintained as necessary to ensure its proper operation in time of emergency.

F-3 Access to Communications or Alarm System

(R299.9606 and 40 CFR 262.34)

F-3a Multiple Employees Present

(R 299. 9606 and 40 CFR 34(a))

Whenever hazardous waste is being processed, all personnel involved in the operation have immediate access to an emergency communication device, either through visual, voice contact or radio with another employee.

While the facility is operating, employees have immediate access to a telephone or a hand-held two-way radio for summoning external emergency assistance or the Emergency Coordinator. All of the facility phones have a listing of required emergency contact phone numbers which would be reviewed for assistance in the event of an emergency.

F-3b Single Employee Present

(R299.9606 and 40 CFR 262.34(b))

While the facility is operating, employees have immediate access to a telephone or a hand-held two-way radio for summoning external emergency assistance or the Emergency Coordinator. All of the facility phones have a listing of required emergency contact phone numbers which would be reviewed for assistance in the event of an emergency.

F-4 Required Aisle Space

(R299.9606 and 40 CFR 262.35)

Aisle space is maintained in such a way that allows unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment to any area of EQD operation in case of an emergency. Aisle space requirements are outlined in **Section D**.

F-5 Arrangements with State or Local Authorities

(R 299.9606 and 40 CFR 264.37)

F-5a Arrangements with State or Local Authorities

(R 299.9606 and 40 CFR 264.37(a)(1))

The arrangements with state or local authorities are outlined in the EQD Contingency Plan.

F-5b Refusal of State or Local Authorities to Enter into Response Agreements

(R 299.9606 and 40 CFR 264.37(b))

No state and/or local authorities have declined to enter into such arrangements; if such refusal occurs, it would be documented.

F-6 Preventative Procedures, Structures and Equipment

(R 299.9504(1)c and 40 CFR 270.14(b)(8)

The following sections describe the procedures, structures and equipment used at EQD to prevent hazards to human health and the environment.

F-6a Unloading/Loading Operations

(40 CFR 270.14(b)(8)(i))

Procedures for preventing hazards to human health and the environment in unloading operations are described in **Section J-6g(ii)**.

F-6b Procedures to Prevent Runoff

(40 CFR 270.14(b)(8)(ii))

Procedures to prevent run-off of hazardous waste handling areas to other areas of the facility or environment are found in **Section J-6g.**

F-6c Procedures to Prevent Contamination of Water Supplies

(40 CFR 270.14(b)(8)(iii))

Procedures to prevent contamination of water supplies is found in **Section J-6g(iv).**

F-6d Procedures to Mitigate Effects of Equipment Failure and Power Outages

(40 CFR 270.14(b)(8)(iv))

Procedures to mitigate the effects of equipment failure and power outages are found in **Section J-6g(v).**

F-6e Procedures to Protect Personnel

(40 CFR 270.14(b)(8)(v))

Procedures to prevent undue exposure of personnel to hazardous waste are found in **Section J-6g(vi).**

F-6f Procedures to Prevent Releases to the Atmosphere

(40 CFR 270.14(b)(8)(vi))

Procedures to prevent releases to the atmosphere are found in **Section J-6g((viii).**

F-6g Procedures to Prevent the Accidental Ignition or Reaction of Ignitable, Reactive or Incompatible Waste

(40 CFR 270.14(b)(9))

Procedures to prevent the potential reaction between ignitable, reactive and incompatible wastes are described in detail in **Section C-3h** of the WAP and **Section J-6g(i).** EQD also takes the following precautions to prevent waste from igniting or reacting:

- Open flame: there is no source of open flames in the tank and container storage areas
- Smoking is not permitted in the tank and storage areas. **"No Smoking"** sings are conspicuously placed in the storage areas.
- Cutting and welding operations: All ignitable waste will be removed from the work area before cutting or welding takes place. A Hot Work Permit must be issued by management prior to any cutting or welding is conducted in waste storage areas.
- There are no hot surfaces in the tank and container storage areas.
- There is no frictional heat generated in the tank and container storage areas.
- There is no source of electrical or mechanical sparks in the container or tank storage areas. Containers with ignitable waste will be grounded when transferring waste into a tank.
- There is no source of radiant heat in the tank and container storage areas.

F-6h Procedures for Odor Mitigation

(R 299.9504(1)(c), R 299.9508(1)(b), R 299.9606(1), 40 CFR 270.14(b)(8)(vi), 40 CFR 264.31)

Procedures/practices to prevent or reduce the potential for odors to impact the community.

- The baghouse stacks are equipped with an odor neutralizing system which sprays an odor neutralizer into the stack at a specified rate which can be adjusted based on the operating conditions.

- Waste approvals are reviewed with consideration of odors based on the composition and reactions that may occur.
- As waste streams arrive on site, samples are collected to conduct a fingerprint of the waste and, when deemed necessary, an odor evaluation will be done by the laboratory.

Table F- 1: Minimizing Potential Hazard