

FESHM 8030: CHEMICAL RELEASES, SPILL PREVENTION AND RESPONSE

Revision History

Author	Description of Change	Revision Date
Eric Korzeniowski	<ul style="list-style-type: none">• minor edits• added a reference to FESHM 8031 Oil Pollution Prevention in Sections 1 and 2• added a definition for Secondary Containment in Section 2• updated Section 3 to reflect the current ESH&Q organization• added references to FESHM 8026 Surface Water Protection and 8025 Wastewater Discharge to Sanitary Sewers in Section 4• added a statement requiring proper storage of chemicals and a prohibition of releasing unauthorized chemicals into the Fermilab water systems in Section 4• updated language in Section 5.1 to be consistent with the Fermilab Comprehensive Emergency Response Plan and Local Area Plan procedures	August 2016
Amber Kenney	Revision 1, Added FESHM Chapter formatting template and editorial changes.	September 2012
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1.0 INTRODUCTION

Chemical spills into the environment are preventable and should be avoided. Releases of various substances may be subject to reporting requirements under Federal statutes including the Clean Water Act (CWA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Emergency Planning and Community Right to Know Act (EPCRA)/Superfund Amendments and Reauthorization Act (SARA) Title III, the corresponding state regulation contained in the Illinois Administrative Code, as well as DOE's Occurrence Reporting and Processing System (ORPS).

Elimination of chemicals of concern is the easiest method to reduce the vulnerability to spills. FESHM [8010](#) contains methodologies to assess processes in order to identify pollution prevention opportunities. In the event that a chemical of concern cannot be replaced with a less hazardous one, plans shall be in place to eliminate or minimize the impacts of such releases to the environment (such as the use of secondary containment).

There are specific regulations pertaining to oil and oil-filled equipment. FESHM 8031 Oil Pollution Prevention implements those requirements.

2.0 DEFINITIONS

Credible Spill – a spill that has the potential to release quantities of regulated chemicals that have the potential to impact the environment and warrant emergency response.

Extremely Hazardous Substances – Chemicals listed in [40 CFR Part 355, Appendix A](#). This list is a subset of Hazardous Substances.

Harmful Discharge of Oil – The CWA prohibits discharges of oil into or upon navigable waters or adjoining shorelines in such quantities that would violate applicable water quality standards or cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines. Violations of this prohibition must be immediately reported to the National Response Center. See FESHM 8031 Oil Pollution Prevention.

Hazardous Materials – Chemicals listed in 40 CFR 172.101.

Hazardous Substances – Chemicals listed in 40 CFR 302.4.

Release - Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment.

Reportable Quantity (RQ) - A designated amount of a *hazardous substance* or *extremely hazardous substance* released or spilled into the environment or a *hazardous material* released as a result of an incident or accident, requires immediate notification to the National Response Center, Illinois

Emergency Management Agency, and Local Emergency Planning Committee. Laboratory management and the Department of Energy have additional requirements for notification of events that can have an adverse effect on the environment. These can be found in FESHM Chapter [3010](#).

Secondary Containment - a means of surrounding one or more primary storage containers to collect any hazardous material spillage in the event of loss of integrity or container failure.

3.0 RESPONSIBILITIES

3.1 Chief Safety Officer

The Chief Safety Officer is responsible for:

- Determining whether an incident must be reported to the National Response Center, IMEA (Illinois Emergency Management Agency), and Local Emergency Planning Committee.
- Performing reporting under FESHM [3010](#), if necessary.
- Notifying the DOE Fermi Site Manager and the Fermilab Directorate of spills that threaten the environment.

3.2 Division/Section/Project Heads

Division/Section/Project Heads are responsible for:

- Preventing the release of chemicals to the environment by ensuring good housekeeping practices for chemical use and storage; minimizing the inventory of hazardous chemicals; and most importantly, utilizing less hazardous materials whenever possible.
- Assessing processes in their areas for vulnerabilities from chemical hazards and identifying opportunities for removal of these chemicals.
- Developing local area plans that include a response to chemical releases from equipment in their areas.
- Ensuring that the appropriate data from their facilities or processes is entered into the [Drain Identification/Characterization database](#).
- Cleaning up and disposing properly of waste associated with spills occurring in their areas.
- Making the decision to employ a remediation contractor and procurement of contractor services for events where their D/S/P is the responsible party. The plan for remediation must include consultation with Fermilab's Chief Safety Officer, EPG/Hazard Control Technology Team and the landlord in cases where the landlord is not the responsible party.
- Conforming to requirements contained in FESHM [3010](#) for an incident occurring within their organization.

3.3 ESH&Q Environmental Protection Group

The EPG is responsible for:

- Helping D/S/Ps develop local area plans that include a response to chemical releases from equipment in their spaces.
- Providing guidance and assisting D/S/Ps with clean-up of spilled materials.

3.4 Fermilab Fire Department

The Fermilab Fire Department is responsible for:

- Acting as “first responder” by responding to emergency calls to spill emergencies and stabilizing the situation as necessary.
- Conferring (Incident Commander) with responsible Division/Section/Project management for release of authority after initial response.

3.5 All Fermilab Employees

All employees are responsible for:

- Evaluating the chemicals purchased for less hazardous alternatives, smaller quantities, etc.
- Being familiar with the local area plan for the areas and the hazards posed by the chemicals with which they work.

4.0 PROGRAM DESCRIPTION

Chemicals of concern shall be stored and used in compatible containers that are kept in good condition. The release or of unauthorized chemicals to Fermilab water systems is prohibited (see FESHM 8026 Surface Water Protection and FESHM 8025 Wastewater Discharge to Sanitary Sewers). Spill sources that may be a threat to the environment should utilize secondary containment (e.g. chemical use adjacent to ponds or creeks or in proximity to drains).

Local Area Plans shall identify potential sources of credible spills, address material handling and spill prevention training commensurate with the hazards that are present in the area. These plans shall include:

- appropriate site-specific procedures
- response equipment necessary for dealing with plausible incidents
- the nature (SDS) and quantity of the materials present
- proximity to surface water or conveyances to surface waters (eg., drains) and other pathways for contaminant migration,
- A method for containing (such as secondary containment) and cleaning up spills.
- emergency procedures
- Necessary internal notifications.
- Potential disposal options.

The complexity and detail of the plans will depend upon the physical characteristics and volume of materials being handled, their toxicity, and the potential for release to the environment.

5.0 PROCEDURES

In the event of a spill or release, the first task is to determine whether an emergency situation exists. If there is any indication of imminent danger to personnel or the environment, call **3131** immediately. Otherwise, the decision about how to respond should be made by considering the type and quantity of material released, location of the spill, potential release to the environment, medium involved, extenuating circumstances (e.g., fire, injury) and whether the spill can be effectively contained.

5.1 General Guidelines for Local Area Plans, Chemical Releases

HAZARDOUS MATERIALS RELEASE (Event which is beyond the skills and capabilities of facility personnel to handle).

1. Person discovering the situation: a. Evacuate the immediate area, call 3131 state: “This is (your name) at (fill in with facility name/address). There has been a (describe situation, product name involved and amount released). Provide additional details as requested by the Communication/Dispatch Center.
2. Release Site Action Item(s):
 - Secure the area from entry by other employees
 - Contact the Emergency Warden.
 - Eliminate sources of ignition if the product is flammable.
 - Provide the Incident Commander (responder with orange vest with letters (IC) with Safety Data Sheets (SDS) for the product, location and size of spill, or whatever information that may be requested.
3. Upon receipt from the Communication/Dispatch Center via the Site-wide Emergency Warning System that a Hazardous Materials Release has occurred. Senior management personnel, Building Manager and Emergency Warden will ensure the instructions provided by the Communication/Dispatch Center are implemented in a timely manner.
4. Instructions may include the following requirements:
 - Turn off HVAC and other air handling devices.
 - Close all doors and windows in refuge area with duct tape, wetted towels and remain in place until released by the IC.

5.2 Additional Elements of a Local Spill Plan

Local spill response plans must include:

- Names and phone numbers of individuals to be contacted in the event of a spill. These individuals must be able to answer questions about the area and the process,
- Instructions for cleanup and decontamination of area,
- A list of potential release routes to the environment, if applicable, and methods for containing any spilled materials to prevent releases to the environment (e.g., protect floor drains),
- A recommended spill cleanup method.

Spill response plans should be discussed in advance with employees working in the area and appropriate training should be provided. **This training should be documented by conducting a tabletop drill and completing a drill critique (see FESHM 2040).**

5.3 Remediation Contractors

After the initial response and containment of a hazardous material spill, Fermilab may require the services of a local remediation contractor and/or OSHA trained personnel to assist in the completion of the cleanup. The primary considerations for hiring a qualified contractor for a hazardous material spill cleanup can be found in the OSHA requirements at [29 CFR 1910.120\(q\)\(1\)](#) and [29 CFR 1910.120\(q\)\(6\)](#). The ES&H Section maintains a file that includes the name, address, telephone number, and a contact person for qualified contractors. This list is available in the ES&H Section Document Database (#2824).