

**SECTION 8**

**PERSONNEL TRAINING**

**MIXED WASTE FACILITY  
RCRA/TSCA PERMIT APPLICATION**

**PERMA-FIX NORTHWEST RICHLAND, INC.**

**RICHLAND, WASHINGTON**

# Mixed Waste Facility

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## **8.0 PERSONNEL TRAINING REGULATORY REQUIREMENTS [H]**

*[WAC 173-303-806(4)(a)(xii), WAC 173-303-330, 40 CFR 270.14(b)(12), 40 CFR 264.14]*

Perma-Fix Northwest Richland, Inc. (PFNW-R) operates a Mixed Waste Facility (MWF) in Richland, Washington. This training program is utilized for personnel who work with dangerous waste and mixed waste (radioactive and dangerous waste) at the MWF. These personnel are referred to as "MWF personnel" in this training document. The training program will teach MWF personnel to perform their duties in a manner that ensures compliance with the Washington Administration Code (WAC) 173-303-330 Personnel Training and 40 CFR 264.16. The training program consists of both initial and continuing training for the MWF personnel and an annual review of the training. This program will train personnel in dangerous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed so they can perform their duties in a manner that ensures compliance with the dangerous waste regulations. The training will also ensure MWF personnel are familiar with emergency procedures and equipment and can respond effectively to emergencies.

Training records, including a course attendance record, and any certification received, are kept in each employee's training file. The training file for each employee is maintained throughout the employee's tenure and for a minimum of three years from the date the employee last worked at the facility. A review of the training program will be conducted annually and documentation of this review will be retained with other training records.

### **8.1 Job Titles and Job Descriptions of MWF Personnel [H-1]**

The Industrial Hygiene/Training Coordinator is designated as the Training Director. That person is qualified by way of training and experience to serve in this function. (The typical job qualification for this candidate are a bachelor's degree in science, engineering, industrial hygiene or other environmental discipline, and related experience.) This person is knowledgeable in dangerous waste procedures and has the responsibility of scheduling the required training and maintaining all required documentation. The Training Director is assisted by outside consultants and individuals at the MWF with the knowledge and experience concerning particular areas of mixed waste management.

The job titles and descriptions for MWF Personnel are listed in Table 8-1. The names of personnel with these job titles and job descriptions will be kept as part of the facility operating record. The job description will include requisite skills, education, other qualifications, and duties for each position.

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**Table 8-1 Job Titles and Job Descriptions for MWF Personnel**

<b>Job Title</b>	<b>Job Description Related to Mixed Waste</b>
Compliance/QC Inspector	Performs MWF facility and equipment inspections Ensures compliance with inspection requirements
EHS & QA Manager / Radiation Safety Officer	Reviews and directs radiological controls program Reviews and directs safety program Oversees operating recordkeeping
Electrical Maintenance Tech	Performs maintenance and repair of MWF electrical systems
Plant Engineer	Provides engineering and maintenance support Design and construction oversight
General Manager/Vice President	Manages overall operation of MWF Ensures implementation of training program Enforces job safety practices
Health Physics Manager/Assistant RSO	Reviews and directs health physics program Reviews and directs radiological controls program Reviews and directs safety program
Health Physics Supervisor	Supervise health physics technicians Coordinate radiation surveys and inspections
Health Physics Tech Lead	Conduct radiation surveys and inspections
Health Physics Tech	Conduct radiation surveys and inspections
Industrial Hygiene/Training Coordinator	Develops and implements hygiene program Develops and implements training program Tracks employee training
Maintenance Supervisor	Supervises maintenance technicians Coordinates maintenance activities
Maintenance Tech	Performs maintenance and repair of MWF facilities and equipment
Maintenance Tech, Lead	Performs maintenance and repair of MWF facilities and equipment
MW Materials Control Tech	Coordinates waste tracking activities
MW Operations Supervisor	Coordinates MWF treatment activities Supervises operations technicians
MW Ops Specialist/Special Projects Lead	Coordinates MWF treatment operations Supervises MW technicians
MW Process Tech	Performs waste treatment operations
MW Shipper	Prepares waste for shipment
MW Thermal Supervisor	Coordinates MWF treatment activities Supervises thermal operations technicians
Plant Operations Manager	Coordinates MWF storage and operations activities including waste acceptance/rejection, waste handling/preparation/treatment
Regulatory Compliance Officer	Ensures MWF compliance with permit conditions Oversees recordkeeping requirements of the permit
Waste Acceptance Specialist	Supervises sampling and laboratory activities Coordinates waste shipment activities

The job duties for MWF personnel typically include the following:

- Sample/inspect incoming mixed waste shipment;

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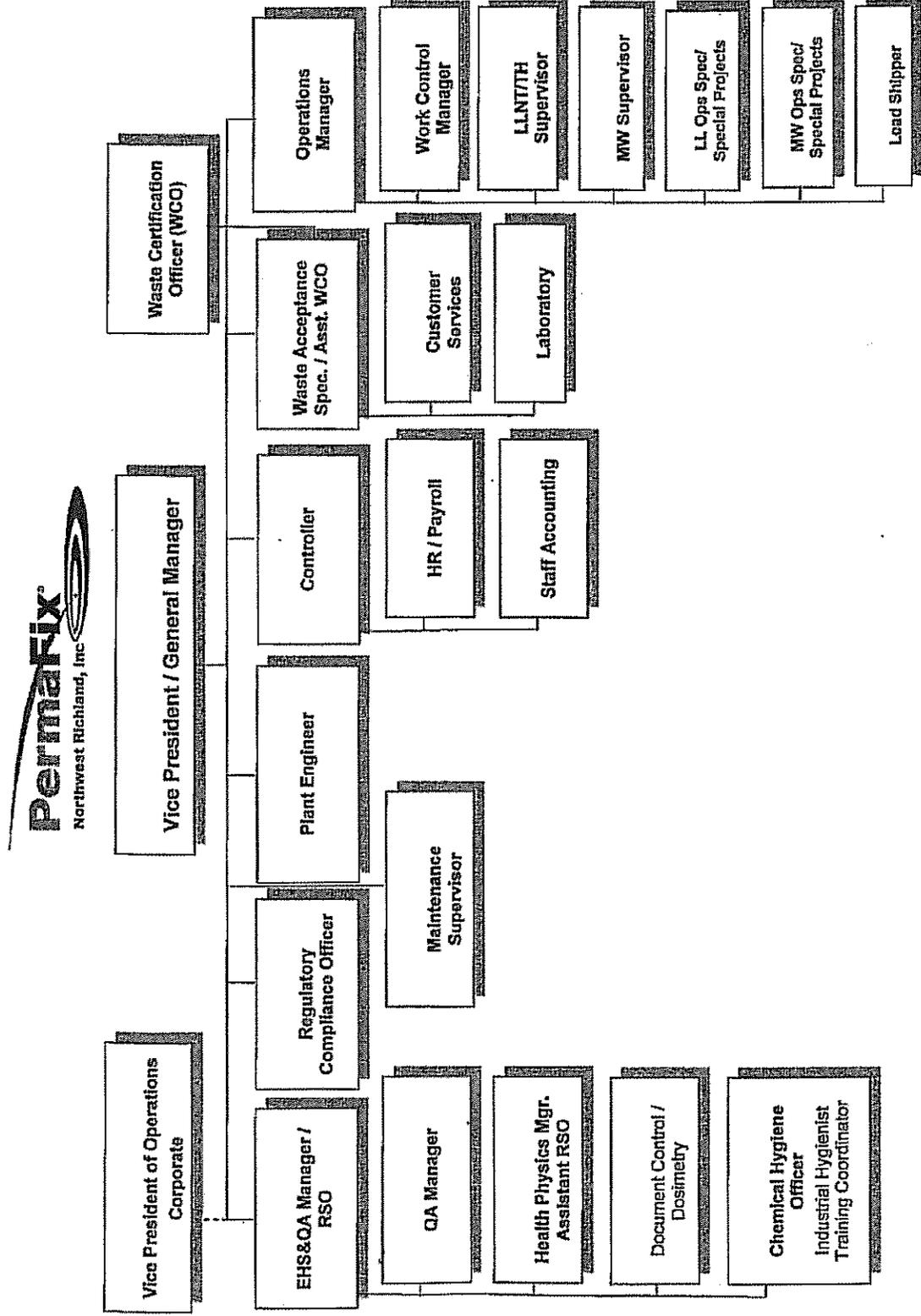
- Unload or transfer mixed waste to or from containers or tanks for storage or treatment;
- Handling mixed waste for treatment;
- Conducting inspections;
- Decontamination activities;
- Operation of treatment equipment;
- Shipping mixed waste or other waste; and
- Emergency response activities

Certain individuals such as engineers, managers, or other administrative personnel, who are not involved in handling mixed waste, are not mandated to complete the MWF training. However, some of these individuals may be trained as part of the Permittee's policy. These individuals may perform administration/business roles for the MWF and typically enter the MWF occasionally or for routine review, orientation, support, or guidance purposes.

A typical organizational chart is shown in Figure 1.

# Mixed Waste Facility

Figure 1. Typical Organizational Chart



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## **8.2 Outline of Training Program [H-2]**

The training plan includes classroom instruction and on-the-job training and may include web-based instruction. The goal of the training program for mixed waste personnel is to prepare employees to operate and maintain the MWF in a safe, effective, efficient, and environmentally sound manner. To meet these objectives, the training program covers:

- the chemical characteristics of the waste to be managed, such as reactivity, toxicity, ignitability, and corrosivity;
- basic personnel safety, respirators, protective clothing, and equipment;
- procedures for locating, using, inspecting, repairing and replacing MWF emergency and monitoring equipment;
- decontamination procedures;
- normal mixed waste management operations and maintenance;
- activation of the Contingency Plan;
- responses to spills, fires, explosions, or other releases;
- communication and alarm systems;
- shutdown of operations and evacuation; and
- response to ground water contamination incidents.

The training program for mixed waste is in place and has been fully implemented. Written training records are kept by the facility. This plan describes the type and amount of training required for each MWF employee. PFNW-R may include training elements that are not specified in this RCRA permit application, but are critical to the facility's safe operation. This may include radiation monitoring requirements, radiation safety and OSHA requirements such as HAZCOM, confined space procedures, hot work permits, and lockout-tagout procedures.

All personnel associated with mixed waste management at the MWF must complete the training program within six months after the date of their employment, assignment to MWF, or transfer to a new position within the MWF. Personnel are not allowed to work unsupervised until they have completed the training program. Annual refresher training is provided to all mixed waste personnel. Table 8-2 lists the training provided to MWF personnel.

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**Table 8-2. Training Matrix by Job Title**

	101 MGOA	102 HAZWOPER-I & 202 HAZWOPER-R	103 CEE-I & 203 CEE-R	104 PSP-I & 204 PSP-R	105 TSD-I	106 MWMFG-I	107 ICS-I & 207 ICS-R
<b>MWF PERSONNEL</b>							
Compliance/QC Inspector	X	X		X	X	X	
Compliance/QC Inspector (Temporary)	X	X		X	X	X	
EHS & QA Manager / R S O (EC)	X	X	X	X	X	X	X
Electrical Maintenance Tech	X	X		X			
Plant Engineer	X	X	X	X	X		
Health Physics Manager/Assistant RSO	X	X	X	X	X	X	X
Health Physics Supervisor	X	X	X	X	X	X	
Health Physics Tech Lead, EHS&QA	X	X		X	X	X	
Health Physics Tech, EHS&QA	X	X		X	X	X	
Industrial Hygiene/Training Coordinator	X	X	X	X	X	X	X
Maintenance Supervisor	X	X		X	X		
Maintenance Tech	X	X		X			
Maintenance Tech, Lead	X	X		X			
MW Materials Control Tech	X	X		X	X	X	
MW Operations Supervisor	X	X	X	X	X	X	
MW Ops Specialist/Special Projects Lead	X	X		X	X	X	
MW Shipper	X	X		X	X	X	
MW Thermal Shift Supervisor	X	X	X	X	X	X	
Plant Operations Manager (EC)	X	X	X	X	X	X	X
Process Tech (MW)	X	X		X	X	X	
Typical Initial Training Hours	2	24/8	4	2	4	24	8
<b>EC &amp; ERG PERSONNEL</b>							
ERG Team Members	X	X	X	X			X

### 8.2.1 Training Topics

A brief description of the training courses related to mixed waste management is provided in the following sections.

#### Mixed Waste General Orientation and Awareness Training

Course number: 101 MWGOA (initial training only)

##### **Course Description**

This course provides a general orientation of the MWF policies and procedures.

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## **Course Objectives**

The objective of this course is to familiarize personnel with the MWF policies and procedures, facility operations, hazards in the workplace, and the appropriate response to emergency signals.

## **Course Content**

### General Orientation

- Overview of MWF policies and procedures
- MWF layout
- Emergency signals and responses
- Housekeeping and restrictions regarding eating, smoking, and chewing areas

### Mixed Waste Awareness

- Overview of state and federal dangerous waste regulations
- Overview of state and federal radiation protection regulations
- Overview of MWF operations
- Overview of MWF hazards communication program

## **HAZWOPER –Initial and 8-Hour Annual Refresher**

Course number: 102 HAZWOPER-I (initial) and 202 HAZWOPER-R (refresher)

The HAZWOPER Training refers to OSHA's Hazardous Waste Operations and Emergency Response Training. The objective of this course is to familiarize students with the hazards associated with hazardous (dangerous) waste operations. Some of the information in this course is covered in more detail in two other classes, "Contingencies and Emergency Equipment," 103 CEE and "Personal Safety and Preparedness," 104 PSP. The HAZWOPER class covers the following:

### **Legislation and Regulations:**

- Mixed waste and dangerous waste regulations
- Recent changes in the regulations

### **Health and Toxicology:**

- Material Safety Data Sheets
- Hazardous materials handling

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## **Medical Programs:**

- Annual physical
- Respiratory protection
- Bloodborne pathogens
- Work place monitoring

## **Hazard Recognition and Evaluation:**

- HAZCOM
- Job hazard analysis/checklists
- Work place violence
- Use of Material Safety Data Sheets

## **Site Specific Hazards and Controls:**

- Fire hazards
- Radiation
- Organic Vapors and Particulate contaminants
- Oxygen deficient atmospheres
- Electrical hazards
- Welding and Cutting
- Slip/Trip/Fall
- Heat stress/cold stress
- Power trucks, Power tools/machine guards

## **Personal Protective Equipment:**

- Level A, B, C and D protective equipment
- Respiratory protection and respirator limitations

## **Work Permits and Procedures**

- OSHA procedures
- Hot work permit requirements
- Lock-out/Tag-out procedure
- Confined space procedures
- Operation procedures
- Radiation work permits

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## **Emergency Response:**

- Communication and alarm systems;
- General response procedures for spills, fires, explosions, or other releases;
- Shutdown of operations and evacuation;
- Key parameters for automatic waste feed cut-off systems;
- Response to ground-water contamination incidents;
- Management of damaged incoming waste shipments
- Personnel who should be notified in the event of an emergency.
- Emergency paper work with shipments
- Overview of the Incident Command System

The 8-Hour Annual Refresher class will cover selected topics from the above list of topics and may include selected site-specific topics from courses 103 CEE-I and 104 PSP-I described below.

## **Contingencies and Emergency Equipment – Initial and Refresher**

Course numbers: 103 CEE-I and 203 CEE-R

### **Course Description**

This course introduces emergency equipment and the MWF contingency plan. This course is intended for ECs, ERG members and personnel who may be requested to assist in an emergency situation. This course covers these topics in more detail than 102 HAZWOPER.

### **Course Objective**

The objectives of this course are to ensure the ability to respond effectively to emergencies and familiarity with MWF emergency equipment and procedures.

### **Course Content**

#### Contingencies

- Introduction to the Contingency and Emergency Plans
- Contingency implementation procedures
- Hazard Assessment
- Use of air monitoring equipment and establishment of zones
- Emergency Response Group organization and responsibilities

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- Agreements with outside agencies/Telephone numbers and contact names
- Shutdown of operations
- Site evacuation procedures and other company policies

### Emergency Equipment

- Decontamination equipment
- Monitoring equipment
- Spill response and control equipment
- Continuous air monitors
- Inspecting, repairing, and replacing facility emergency and monitoring equipment

### **Personal Safety and Preparedness**

Course numbers: 104 PSP-I and 204 PSP-R

#### **Course Description**

This course discusses personal safety and preparedness programs and policies of the MWF in more detail than 102 HAZWOPER. This course is intended for all MWF Personnel.

#### **Course Objective**

The objectives of this course are to ensure familiarity with:

- Safety policies and procedures, and
- MWF procedures to prevent hazards.

#### **Course Content**

##### Personal Safety

- Radiation safety
- Properties of typical MWF dangerous waste
- Use of protective clothing and respiratory equipment
- Care in handling waste
- Exposure routes
- PFNW-R Lock-out and tag-out program
- Fall protection program

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## Preparedness

- Locations of emergency equipment at PFNW-R
- Access and use of internal communication and alarm system
- Review of procedures to prevent hazards
- Precautions for ignitable, reactive, and incompatible materials
- Safety precautions during management of waste
- Portable fire extinguishers at PFNW-R
- Sparks and sources of ignition
- Site security

## **Treatment Storage and Disposal (TSD) Training**

Course number: 105 TSD (initial training only)

### **Course Description**

This course is designed to provide an overview of the various aspects of managing mixed waste at a treatment and storage facility.

### **Course Objective**

The objective of this course is to provide skills and knowledge to carry out tasks in a way that ensures the MWF treatment and storage operations are performed in compliance with the facility permit and applicable state and federal requirements.

### **Course Content**

#### General Course Content

- Waste handling
- Waste compatibility
- Waste segregation in storage
- Waste segregation during treatment
- Storage areas operations
- Waste treatment selection
- Process data sheets
- Radiological control during treatment operations

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## Specific Course Content

- Treatment formula development for stabilization
- Automatic waste feed cut-offs (AWFCOs)
- Individual Treatment Process operation, startup, and shut down
- Unloading treatment units
- Cleaning out treatment units
- Secondary waste generation
- Responses to ground water contamination

## Mixed Waste Management for Generators

Course number: 106 MWMFG (initial training only)

### **Course Description**

This course reviews the state and federal regulations for managing mixed waste. It also covers the activities associated with receiving, storing, and shipping waste at the MWF.

### **Course Objective**

The objective of this course is to provide employees the skills and knowledge to carry out their duties in a way that ensures the MWF personnel receive, store, and ship waste in compliance with the facility permit and applicable state and federal requirements.

### **Course Content**

#### General Course Content

- Definition of hazardous waste and dangerous waste
- Definition of radioactive material
- Overview of the Land Disposal Ban requirements (both state and federal)
- DOT Classifications
- DOT Labels/Markings/Placards
- State regulation requirements for generators
- Federal regulation requirements for generators
- Overview of MWF generated waste
- State regulation for treatment facilities
- Federal regulation for treatment facilities

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## Specific Course Content

- Applicable permit conditions
- Approval of incoming shipments
- Incoming waste analysis
- Waste tracking system
- Manifest generation
- Manifest review and discrepancy reporting
- On-site laboratory operations
- Records
- Sampling
- Waste profile sheets
- Waste pre-acceptance
- Waste acceptance
- Waste discrepancy and rejection

## **Incident Command System for Emergency Coordinators**

Course numbers: 107 ICS-I and 207 ICS-R

### **Course Description and Objective**

This course is provided for the Emergency Coordinator and Alternates to prepare them to perform the duties of the Incident Commander in the event of an emergency.

### **Course Content**

#### General Course Content

- Overview of the Incident Command System
- Hazard Assessment
- Standard procedures for Emergency Response
- Procedures to involve outside authorities during implementation of the Contingency Plan
- Requirements for notification and reporting
- Procedures to store or dispose of recovered waste, contaminated soil or surface water, or any other material that resulted from a release, fire, or explosion at the facility.

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### **8.3 Implementation of Training Program [H-3]**

#### **8.3.1 Initial Training**

The initial training is completed within six months of the hiring date. Employees who are assigned to a new position inside the MWF must meet the training requirements of that position before working unsupervised in that position, and within six months of the new assignment.

MWF personnel are not allowed to work unsupervised in the MWF until they have taken and successfully completed the initial training courses. For the purposes of this plan, working under supervision includes having work tracked or reviewed by an experienced lead or supervisor. Supervision does not mean that the employees will never leave the sight of the assigned overseer, but it does mean that the employee shall not be assigned to complete waste management tasks without sufficient guidance to complete the task safely.

Training at the MWF may be followed by written tests, hands-on demonstrations, or verbal discussions to determine the level of comprehension upon completion of most of the training. Documentation of completion will be retained in an employee's training file.

#### **8.3.2 On the Job Training (OJT)**

OJT provides instruction that is typically specialized for a particular task. The OJT provides the intensive, "hands on" training and experience in the mixed (dangerous and radiological) waste handling operations related to each employee's specific duties. The OJT teaches specific employee skills and builds on the knowledge base acquired in the more formal classroom training sessions. In this manner, employees learn safe work practices and practical applications of environmental protection, mixed waste management, and regulatory compliance related to the employee's duties. Table 8-3 is a matrix of on-the-job training received by MWF personnel, by job title.

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**Table 8-3. On-The-Job Training Matrix**

	Sampling	Off Loading	Inspection	Task-Specific Radiation Safety	Tank Management Practices	Container Management Practices	Repackaging Operations	Laboratory	Record Keeping	Task Specific PPE	Treatment System Operations	Emergency Procedures
<b>MWF PERSONNEL</b>												
Compliance/QC Inspector				X					X	X		X
EHS & QA Manager / Radiation Safety Officer (EC)				X					X	X		X
Plant Engineer				X					X	X		X
Health Physics Supervisor	X	X	X	X	X	X	X			X	X	X
Health Physics Tech Lead, EHS&QA	X	X	X	X	X	X	X			X	X	X
Health Physics Tech, EHS&QA	X	X	X	X	X	X	X			X	X	X
Maintenance Supervisor				X					X	X		X
Maintenance Tech				X					X	X		X
Maintenance Tech, Lead				X					X	X		X
MW Materials Control Tech	X	X	X	X	X	X	X			X	X	X
MW Operations Supervisor				X					X	X		X
MW Ops Specialist/Special Projects Lead				X					X	X		X
MW Shipper	X	X	X	X						X		X
MW Thermal Shift Supervisor				X						X		X
Plant Operations Manager (EC)				X						X		X
Process Tech (MWTH)	X	X	X	X						X		X
Typical Training Hours	2	1	4	2	4	2	2	4	4	4	4	1

OJT is typically provided by an experienced supervisor to a new or newly transferred employee. This instruction may be applicable to all mixed waste positions or may be specific to a particular task. OJT utilizes, but is not limited to, the following training methods:

- providing verbal directions,
- providing topic specific handouts and
- providing direct 'hands on' experience to help employees learn safe work practices and practical applications of environmental protection, mixed (hazardous and radiological) waste management and regulatory compliance related to the employee's duties.

On-the-Job training is documented in the employee's training record.

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### **8.3.3 Refresher (Continuing) Training**

MWF personnel involved in dangerous waste management receive annual 8-hour refresher training. This training will include selected material from the initial training, as well as discussion of changes in applicable regulations and changes in facility equipment, processes, and procedures.

### **8.3.4 Training for Emergency Response**

The training for MWF personnel is designed and structured to ensure that they are trained to respond effectively to emergency situations (first responders), and to maintain compliance with applicable permit requirements and environmental regulations during emergencies. This training addresses non-routine situations such as spills, fires, and explosions that could lead to an emergency involving mixed waste if proper responses are not implemented.

MWF personnel receive general Emergency Response training in the Initial Hazardous Waste Operations and Emergency Response, 102 HAZWOPER training. They also receive site-specific Emergency Response training in a shorter class, "Personal Safety and Preparedness," 104 PSP.

Certain personnel (ERG members) are provided with additional emergency response training in "Contingencies and Emergency Equipment," 103 CEE and "Incident Command System for Emergency Coordinators," 107 ICS. The job titles for ERG members are provided in Table 8-4.

**Table 8-4 Job Titles for Potential ERG Members**

Compliance/QC Inspector (Temporary)
EHS & QA Manager / Radiation Safety Officer (Primary Emergency Coordinator)
Health Physics Manager/Assistant RSO
Health Physics Supervisor
Health Physics Tech Lead, EHS&QA
Health Physics Tech, EHS&QA
Industrial Hygiene/Training Coordinator
LL Operations Supervisor
LL Ops Specialist/Special Projects Lead
Maintenance Supervisor
MW Operations Supervisor
MW Ops Specialist/ Special Projects Lead
Plant Operations Manager (Emergency Coordinator)
Regulatory Compliance Officer (Emergency Coordinator)
MW Thermal Supervisor
Vice President and General Manager (Emergency Coordinator)