## D.7.1 AERC FL Employee Training Program

Training is AERC's most productive tool to ensure health and safety and good industrial hygiene and environmental controls. Production workers undergo comprehensive and ongoing training including, but not limited to:

- General orientation
- Hazard communication
- Proper PPE selection
- HM126
- Contingency plan
- Material handling
- Forklift
- Confined Space Recognition
- Toxicology
- Fire safety and portable fire extinguishers
- Hazardous Waste Management Practices
- Air sampling
- Respirator training and fit test

All operation workers must receive general orientation and hazardous communication training prior to actual participation in production work. AERC considers training an on going process closely associated with employee development. Refresher training is performed periodically with good industrial hygiene and environmental controls being reinforced repeatedly.

All new operations employees must complete a 24 hour OSHA TSD Facility Training, and each employee must also complete a minimum of 8 hour annual refresher courses. (per OSHA, CFR 29 § 1910.120)

This section contains:

1. The Table of Contents and outline of the training syllabus used by the company, from which the 24 hour courses are taken. The entire document is available for agency review upon request.

2. Sample Position Descriptions for various process operations at the AERC West Melbourne facility. These records are maintained on file at the facility and are available to the agency upon request.

3. Outline for Hazardous Waste Management Practices / Hazardous Waste Permit Training. This training is conducted for every new employee as well as annually.

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## EMPLOYEE TRAINING AND EDUCATION

### Purpose

AERC provides training regarding the safe handling of hazardous wastes for all employees assigned to work with, or near, potentially hazardous materials or activities. The formal training program is structured to insure that all employees receive timely training programs which are salient to job responsibilities.

### Responsibility

It is the responsibility of the Manager of Facilities, Safety and Industrial Hygiene to prepare, organize and disseminate training materials.

### Training Programs

The formal training programs are broken down into three general categories:

1. Initial training program - See excerpted table of contents

2. Annual Refresher

3. Monthly Safety Training

Each of these three programs is outlined below:

#### 4.3.1 Initial Training Requirements

**Orientation Training Program: Phase I**

The AERC Orientation Training Program qualifies individuals conducting hazardous waste activities at RCRA facilities.

The initial training program exceeds the 24-hour training requirement under 29 CFR 1910.120 for routine RCRA activities, so that personnel can be properly trained for respirator usage and emergencies. All facility personnel are required to attend AERC Orientation Training Programs regardless of past experience. Upon completion of this program, new employees enter their new position as trainees for a period of approximately 8 weeks. During this period, they work under the direct

supervision of an experienced supervisor with periodic progress reviews conducted by the employee's department manager. An outline of topics for the training program appears below. Upon completion of this program, the employee is given a certificate of course completion.

Training Overview

This is a detailed overview of all of the components to our safety-training program.

A. 24- hour initial training program agenda. This training meets the requirements of 29CFR1910.120(p)(7)(i) HAZWOPER.

I Introduction

Discuss the corporate history and structure, including an overview of how materials are passed through the facility. In addition, a discussion regarding employee health benefits and medical surveillance requirements are discussed.

II Hazard Communication / Awareness

The purpose of this training is two fold; (1) to meet the requirements of the Hazard Communication standard regarding working with hazardous materials, and (2) to increase the trainee's awareness of the non-chemical hazards associated with their job.

III Toxicology

This course provides a review of toxicological terms and concepts and reinforces the use of a systematic approach to preventing chemical exposure. Types of toxins, routes of exposure, toxic effects, host factors and exposure limits are all examined. Material Safety Data Sheets for fluorescent lamps and mercury are reviewed.

IV Personal Protective Equipment

A discussion and demonstration on the proper use of personal protective equipment such as gloves, hearing protection, chemical protective coveralls, etc. is performed. A detailed explanation of the proper use of selection guides for determining the appropriate gloves, protective clothing and respirator is held.

V Site Control & Work Zones

This section details the importance of site control and work zones (hot, warm, cold) to prevent cross contamination. A diagram of the AERC facility is used as a model to illustrate the site specific work zones. The bootie policy and the rules regarding their use and travel through the transition area.

VI Air Monitoring

Employees are provided with a demonstration of an air monitoring survey being conducted at the AERC facility. In addition, the AERC Air Monitoring policy (SHP007) is explained in detail. Survey points, documentation, action level and frequency of monitoring are all discussed. An explanation of the operation and use of the Jerome 431X mercury vapor analyzer is conducted.

VII Control of Hazardous Energy

The importance of control (Lockout) of hazardous energy are stressed and illustrated with the use of a video giving an overview of the components to a typical lockout operation. The AERC Hazardous Energy Control Plan along with specific lockout procedures are explained in great detail.

VIII Confined Space Recognition

The recognition of permit required confined spaces and the hazard associated with them are highlighted through lecture and video. In addition, the AERC.com, Inc. confined space policy (SHP018) is explained.

IX Respiratory Protection

The proper use, maintenance and inspection of the 3M series 6000 air-purifying respirator are reviewed and demonstrated. Each operations employee is issued both a full face and half face respirator. Each employee is properly fit tested with both respirators. Each employee must demonstrate competency in the inspection and use of each piece of respiratory equipment issued. Included in this section is an explanation of the circumstances and situations that require the use of respiratory protection equipment at the AERC facility.

X Fire Extinguisher / Fire Safety

In this section, we discuss the basic principles and procedures for fire safety. The fire tetrahedrons as well as the four classes of fire are explained. The various types of fire extinguishers in the plant are explained. Employees also view a video (Fighting fires with portable extinguishers) produced by the National Fire Protection Association.

XI D.O.T. HM-126 Module 1

An overview of the HM-126 requirements including hazard classes, 172.101 table, labeling, placarding, shipping papers, emergency response guidebook and packaging requirements

XII Material Handling

Trainees are walked through the handling of materials from receipt of shipment, processing, and all details pertaining to plant operations, lamp procedures and general work practices reviewed. Employees will be assigned to “hands on” instructor to guide them step by step through their specific job functions.

XIII Contingency Plan / P.P.C Plan

All aspects of the facility contingency plan and P.P.C. plan are reviewed. Emergency coordinators, location of emergency equipment, spill procedures, fire procedures, first aid incidents, evacuation routes, meeting / accountability locations and shutdown procedures are reviewed in detail.

XIV Forklift Safety and Use

Employees who are required to operate a forklift will receive training on the safe use, inspection and operation of the forklift. Trainees must pass a competency test (written and practical) before being authorized to operate a forklift in the plant.

XV Corporate Safety Policies & Procedures

A detailed review of the AERC.com, Inc. corporate safety policy and procedure plan is performed. All safety policies which effect the daily activity of the new employees are explained.

XVI Safety Awareness

A lecture on the importance of following safety policies and work practices is performed. Employees then view a safety awareness video from J.J. Keller & Associates.

XVII Hazardous Waste Business Practices

An overview of Hazardous Waste Management Practices including labeling, storage requirements, container requirements, and inspections is conducted. In addition, students watch a video (Hazardous Waste Employee Training- Cradle to Grave Responsibility) on management practices.

**Orientation Training Program: Phase II**

Following completion of the Orientation Program the trainee participates in On-the-Job Training for approximately 8 weeks. The major thrust of the second phase is to draw on the employee's recent training and to re-emphasize basic aspects of hazardous materials safety.

In accordance with 29 CFR, Part 1910.120, the program provides the training required for employees to participate in hazardous waste operations and emergency response.

**Annual Refresher**

The Company believes that frequent reinforcement and review of basic safety principles is paramount in providing a safe work environment. All Facility employees participate in the annual “refresher” training.

The 8-hour refresher training is comprised of topics from the initial 24-Hour Training Program. The following list covers the topics that are covered during the refresher.

**AERC SAFETY TRAINING SEMINAR TOPICS**

| Topic | Approximate Length of Session (Hrs) |
|---|---|
| 1. Corporate Safety Policies and Procedures | 0.75 |
| 2. Site Control and Work Zones | 0.50 |
| 3. Toxicology | 0.50 |
| 4. Air Monitoring | 0.50 |
| 5. Fire Safety/Fire Extinguisher Training | 0.50 |
| 6. Hazard Communication/Awareness | 1.0 |
| 7. Personal Protective Equipment | 1.0 |
| 8. Air purifying Respirator Training | 1.25 |
| 9. Hazardous Waste Practices | 1.0 |
| 10. Forklift Use and Safety | 1.0 |

**Monthly Safety Training:**

The Company believes that frequent reinforcement and review of basic safety principles is paramount in providing a safe work environment. In order to maintain safety awareness all Facility employees participate in the Monthly Safety Training.

Each monthly training session lasts approximately 1.0 hour. The topics for each training session are taken from the 24-Hour Training Outline.

## D.7.2 Regulatory Compliance Training Synopsis for Employees: AERC, West Melbourne, FL

**Permits:**

AERC.com, Inc., EPA I.D. Number FLD984262782 operate a mercury-containing lamp and device recovery and reclamation facility per FL DEP Permit # HO05-275169.

AERC also hold the following permits:

- FL DEP Air Permit 0090124-001-AC
- US EPA Storm Water Permit FLR05C039

**Waste Regulations**

All solid waste must be characterized to ascertain whether it exhibits a *characteristic* of hazardous waste (i.e. ignitability, corrosivity, reactivity, toxicity) or if the waste is *listed* as hazardous by the USEPA or other regulatory body. Generator knowledge may be used during such characterization of waste. The Toxicity Characteristic Leaching Procedure (TCLP) test is used to test the extent to which a waste will leach hazardous constituents. For example, AERC/MTI regularly tests its waste for mercury using the TCLP. If a solid waste leaches $\geq$0.2mg/L Hg, then it is a hazardous waste for the characteristic of toxicity (EPA waste code = D009).

A solid waste is a hazardous waste if it is listed by the USEPA in the Lists of Hazardous Wastes found in 40 CFR, Chapter 261, Subpart D. Such listed waste will have an EPA waste code starting with the letter F, K, P or U followed by three digits depending on whether the waste is generated from a non-specific source, specific source, discard of commercial chemical products, off-specification species, container residue or spill residue. The codes for mercury of D009 (waste) and U151 (off-spec product) are most encountered at the AERC/MTI facilities.

Solid waste that is not hazardous waste may be further regulated per municipal, residual or other such regulations as defined by the Federal or State regulatory agencies.

**Hazardous Waste Regulations**

The USEPA and State regulatory agencies regulate the generation, transport, storage, disposal and treatment of hazardous waste. The USEPA regulations may be found in Title 40 of the Code of Federal Regulations (40 CFR).

Generator Status - A generator of hazardous waste must determine the amount of hazardous waste that he generates per month. The categories are as follows:

- Conditionally Exempt Small Quantity Generator, less than 100 Kg/month
- Small Quantity Generator, 100 - 1000 Kg/month
- Large Quantity Generator, ≥ 1000 Kg/month

Note: Acute hazardous wastes (P and U-listed) generated in amounts of ≥ 1 Kg/month or cleanup of a spill/residue of ≥ 100 Kg/month result in a LQG status.
Note: Households are exempt from the hazardous waste regulations - homeowners should utilize their household hazardous waste programs.

The various generators have differing time limits for the accumulation of hazardous wastes onsite their facilities. LQGs may not accumulate hazardous wastes onsite their facilities greater than 90 days unless they are permitted for such storage. Storage facilities are typically permitted to store hazardous wastes onsite their facilities for up to one year.

Transporters - transporters of hazardous waste are licensed by individual States. Transportation regulations include in-transit time limits, emergency planning and equipment, personnel training, manifest procedures and recordkeeping/reporting requirements.

Treatment/Storage/Disposal (TSD) Facilities - TSDs are subject to numerous standards, including waste analysis procedures, personnel training, preparedness & prevention practices, manifest and recordkeeping, closure, post-closure monitoring, bonding, insurance, permitting, inspection requirements, container storage requirements, etc.

The various AERC facilities all possess some level of permit for their respective recycling activities. The permits both permit and restrict the facilities to certain activities as outlined in the facility applications.

**Universal Waste Rule (UWR)**

The USEPA initiated the Universal Waste Program effective May 11, 1995. Batteries, pesticides and mercury thermostats were identified as "universal wastes", i.e. the wastes are generated by a vast community or universe of generators. The USEPA added hazardous lamps to the list of items that may be managed as universal wastes on July 6, 1999, effective January 6, 2000.

Many States that are authorized to enforce the USEPA RCRA program have since added lamps to the list of universal wastes within their States (via seeking such authorization from the USEPA). Likewise, during the time that said States are seeking such authorizations, they have issued enforcement directives allowing generators to utilize the universal waste program. In

States that are not authorized to administer the RCRA program, the universal waste rule became effective on January 6, 2000. Lastly, other States have utilized expanded universal waste programs for several years and allow generators to manage additional wastes such as mercury-containing devices under their State universal waste rules.

When utilizing the UWR, generators must ensure that their universal wastes are being sent to a recycling facility. Furthermore, generators may not switch between the universal and hazardous waste programs - they must choose a single approach for each shipment of universal waste.

**Benefits of the UWR**

- Allows generators to accumulate universal wastes at their facilities up to one year.
- Allows generators to utilize a non-hazardous waste manifest or bill-of-lading instead of a hazardous waste manifest.
- Allows generators to utilize a common transporter instead of a hazardous waste transporter for the transport of the wastes to a destination facility.
- Generators do not have to count universal wastes within the amount of monthly hazardous waste generation when determining their hazardous waste generator status. A generator of UW is either a Small or Large Quantity Handler of Universal Waste (SQHUW or LQHUW) depending if they generate less than or greater than or equal to 5,000 Kg of UW per month.

**Hazardous Wastes vs. Hazardous Materials:**

40 CFR vs. 49 CFR

Please be aware that the terms "hazardous waste" and "hazardous materials" refer to different regulations and regulatory agencies. As previously noted, hazardous waste refers to the regulations established by the USEPA and State environmental agencies. "Hazardous materials" refers to materials, whether product or waste, that pose a hazard during transport. The hazardous materials regulations are established by the USDOT (Department of Transportation) and State DOT agencies. The USDOT hazardous materials regulations may be found in 49 CFR.

Hazardous waste manifests, non-hazardous waste manifests and bills of lading are the various documents used to transport materials to the AERC/MTI facilities.

A generator is typically required to transport hazardous waste to a designated facility using the specific hazardous waste manifest of the destination state. For example, the AERC facility in Allentown, PA is required to accept fully-regulated hazardous waste (e.g. mercury-

contaminated carbon) on a Pennsylvania hazardous waste manifest and only from a PADEP-permitted hazardous waste transporter.

Universal wastes and product materials may be shipped on a bill of lading, non-hazardous waste manifest or hazardous waste manifest (without EPA waste codes) using a common transporter.

These various shipping documents are used to track shipments between the generator, transporter and destination facility. Many State regulatory agencies require generators and/or transporters and/or destination facilities to forward copies of hazardous waste manifests to the State to prove that hazardous wastes are arriving at the final destination facilities within the prescribed time limits.

Note that the hazardous materials shipping descriptions may be found on the various documents and that a material may be regulated as a hazardous or universal waste and may also be (or not be) a hazardous material. One should also become familiar with the USEPA hazardous waste codes (e.g. D009 = mercury) and that hazardous waste codes may not be associated with a shipment of universal waste. TSD operators should be familiar with the handling/treatment codes that are required to be entered on the hazardous waste manifests and that various copies of the manifests are labeled/numbered with different numbers/names.

**LDR**

A completed/signed Land Disposal Restriction (LDR) form is required to accompany the initial shipment of a unique hazardous waste stream that a generator is transferring to a TSD facility. Subsequent manifested shipments of the same hazardous waste stream to the same TSD facility do not require a LDR form, though generators are used to attaching these forms to their manifests. The LDR states that the generator is aware that specific wastes must meet specific standards prior to being disposed upon the land

**General Rules for Employees:**

- When materials arrive at the facilities, the containers must be inspected for integrity (e.g. non-leaking, closed, not under pressure) and proper labeling. Also, the shipping document must coincide with the quantity & type of materials received at the facility.

  The required labeling includes:

  a) Hazardous (or Universal) Waste Label.
  b) Date received.
  c) A description of the contents of each container.

  (The Generator's Name and Address, and Manifest Number may also be present).

- Tracking (Manual or via Wixel): Tracking of wastes received, wastes processed and waste inventories vary among the three facilities. It is a standard operating procedure to keep the various wastestreams in specific storage areas so that an inventory of the wastes may be obtained at any given time. This is valuable since the facilities are permitted/limited to the amounts of the specific wastes that they may have onsite at any one time vis-a-vis the permit bond.
- Manifests and other shipping documents are required to be completed, posted to generators and/or regulatory agencies, stored onsite and made available to regulatory agency inspectors upon demand.
- Container Storage Areas must be inspected and recorded daily on the appropriate Inspection Logs.
- Training records and emergency/contingency plans must be kept up-to-date.
- Analytical testing of inbound wastes and outbound wastes and/or recyclable materials must be performed and documented in the operating record.
- Closure plans, closure cost estimates and insurances must be kept current.
- All containers must be kept closed (i.e. bungs, drum rings, box flaps) at all times except when inspecting the internal contents of the container, or when it is necessary to add or remove waste from the container.
- Satellite accumulation - A generator of hazardous waste may accumulate up to 55-gallons of hazardous waste (or 1 quart of acutely hazardous waste listed in 40 CFR 261.33(e)) at any point of generation. Upon reaching the limit of 55 gallons (or 1 quart), the generator has three days in which to move the generated waste to a permitted storage area. Though the regulations state that the generator should also place an accumulation date on the container at this time, it is the policy of AERC to date a container upon placing the initial amount of hazardous waste into the container.
- All containers should be shrink-wrapped, when appropriate, while in storage.
- All liquid materials must have secondary containment (i.e. spill pallets) during storage and processing. These spill pallets must be able to hold either 100% of the volume of the largest container on that pallet, or 10% of the volume of all the containers.
- Containers of hazardous and universal wastes must be stored in the specific storage areas as outlined in the facility permit application.
- The inspection aisles between rows of waste shall be maintained in agreement with the requirements set forth in 40 CFR 264.35. More specifically, the width of each aisle shall be adequate to allow for such inspections, in addition to normal operations and access by emergency responders. As such, the <u>aisles must not be blocked by obstructions</u>. Lines and row numbers painted on the floors of the storage areas are helpful.
- Containers must be placed on pallets so that labels face toward the aisles. Labels are required to be “visible for inspection” in order to determine contents, accumulation dates and “date received” at the facilities.

- Accumulation dates must be entered on hazardous waste labels of all generated wastes, e.g. on plant scrap boxes.
- Storage limits - it is a general practice of LQGs to arrange quarterly pickups of waste from their facilities so that they are within their 90-day storage time limits. LQGs that are also permitted storage facilities may store up to the limits specified in their permits (usually one year), though our facilities tend to operate by the 90-day "rule of thumb".
- All containers of hazardous waste generated by AERC (e.g. plant scrap boxes) must be sampled prior to storage. The samples will be analyzed before being returned to the appropriate container. See your supervisor regarding the sampling and chain-of-custody procedures.
- Hazardous/universal waste labels, accumulation dates and content listings must be present on all containers of waste.
- All generated hazardous wastes destined for offsite shipment must be labeled with the appropriate red/yellow hazardous waste labels and USDOT labels. Universal wastes destined for offsite facilities must bear universal waste labels and possibly USDOT labels.
- Personal Protective Equipment (e.g. booties, gloves, & ear plugs) must be deposited into the appropriate waste container (e.g. not on the ground or in the recycling containers). The parking lot should be regularly swept of pieces of litter (e.g. wood, aluminum end caps, plastic shrink-wrap and glass).
- Operators must remove residual glass particles and labels from DF containers prior to placing the containers in storage. These containers are re-used by the AERC/MTI customers.