

### 3.1.3

#### **EMS Aspect: Facilities, Planning, Engineering and Maintenance, Building Operations, Waste, Water, Energy**

#### **Aspect Ranking: 14**

Building operations is provided by Maintenance and Operations, a department of Facilities, Planning and Engineering at The University of Texas Health Science Center at Houston (UTHSC-H). Their purpose is to provide preventative maintenance and repair mechanical, electrical, plumbing, and structural deficiencies on UTHSC-H buildings. This document will focus on the waste, water, and energy side of the building operations.

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#### **Hazardous and Universal Waste, Water, and Energy Management**

##### **Task/Activity Description: Hazardous and Universal Wastes**

Universal waste is a specific type of hazardous waste that is subject to 40 CFR part 273 which provides less restrictive standards for accumulation, recordkeeping and shipping requirements as compared with hazardous wastes designated under 40 CFR parts 261-265. These universal wastes include rechargeable batteries, pesticides, mercury containing articles and thermostats, spent fluorescent lamps, and paint and paint related wastes. Used oil is collected for recycling under 40 CFR part 279. Non-PCB ballasts are collected for recycling, and PCB ballasts are collected for disposal at a TSCA approved incinerator.

The Environmental Protection Program (EPP) is responsible for supplying containers for the storage and accumulation of hazardous, universal, and recyclable wastes. Additionally, the original container may be used for the collection and storage of wastes. These wastes are stored in the maintenance shops which serve as satellite accumulation area. The Environmental Protection Program collects universal and recyclable wastes and transports to central collection areas located at each building for offsite shipment for recycling or disposal.

Any RCRA hazardous wastes generated by Maintenance and Operations is collected in a compatible container, labeled, stored in the central accumulation area and removed by a hazardous waste disposal contractor.

##### **Task/Activity Description: Water**

The nursing building houses 7 rainwater storage tanks. Two additional tanks, called cisterns, are located on the roof. Collectively, the cisterns capture more than 826,000

gallons of rainwater or "grey" water per year. "Rainwater harvesting" will save money on water bills, reduce demand for fresh water, and lessen the environmental impact of this facility. "Grey" water, also known as non-potable water, cannot be used for human consumption - but will meet 100 percent of sewage conveyance needs. The nursing building uses its grey water system for the estimated 42,000 gallons it needs each month for toilet flushing and irrigation. The rainwater storage tanks are designed to accommodate an average rainfall of 50" annually. In the event of excessive rainfall the cisterns contain an overflow mechanism - 8"-10" overflow pipes - that allow the rain to flow into the landscape. Multiple water reduction strategies amount to 63 percent reduction in total water use for the nursing building.

**Task/Activity Description: Energy**

Building operations also is in charge of maintaining the energy consumption on the campus. The nursing building is designed to reduce energy consumption to 46 percent less than current optimal energy codes. Innovative use of natural daylight, high-performance window glazing and window shading devices, an under-floor air distribution system, and individualized temperature controls are all integrated into the design. The energy performance optimization makes for an annual savings in energy costs of \$76,838.00 - based on current energy prices. Results indicate that this building will use 80 percent less energy on a square foot basis than the adjacent UT School of Public Health, which was built just 25 years ago.

There are other ways to H-E-L-P save energy that facilities planning and engineering has implemented though out the campus. Close the Hoods, close any fume hoods and shut down any equipment than can be turned off during the weekend. Shut down your Electronics, which are printer, monitors, speakers, cpu (except on Wednesday's), adding machines, and radios. Turn off the Lights, which are your task lights, overhead lights, and lights that are in copy rooms, labs, and conference rooms. Block out the Photons, close your blinds, drapes, and shutters during the winter and summer times.

**Key Control Points:**

- Maintenance personnel utilize the Hazardous Waste Line to request pickups of hazardous materials and universal waste for management through the EHS Environmental Protection Program. Universal waste is stored in compatible containers marked with the words universal waste, type of waste, and date full.
- The Environmental Protection Program reviews building maintenance waste management procedures during annual training and routine interactions and makes adjustments according to processes, equipment, or facility changes.

- Maintenance personnel are required to pick up debris from to prevent anything running off into the storm drainage system. Weekly email reminder from information technology services to turn off unnecessary electrical equipment.

**Related Forms, Records, SOPs:**

- Universal waste log
- Irrigation log
- Electricity use log

**Personnel Responsible:**

Maintenance Manager

- Ensure employees practice proper waste disposal procedures, operate equipment to ensure safety, and minimize environmental releases
- Ensure wastes, pesticides, and herbicides are labeled and stored properly

Safety Specialists, EPP

- Assists with the collection of hazardous and universal wastes
- Provide training to building maintenance employees covering safety and hazardous waste identification and disposal
- Provide training on energy and water saving techniques utilized at UTHSC-H

Safety Manager, EPP

- Ensure wastes from building maintenance activities are managed in a cost effective and environmentally compliant manner.
- Communicate environmental objectives to maintenance staff

Director, EHS

- Provide program oversight and liaison with VP of Facilities, Planning and Engineering
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