

FESHM 8022: RECYCLING, WASTE MINIMIZATION AND POLLUTION PREVENTION

Revision History

Author	Description of Change	Revision Date
Amy Pavnica	<ul style="list-style-type: none">• Removed text revering to chemical exchange system• Removed broken links• Removed references to “Q” in ES&H	June 2021
Eric Mieland Katie Kosirog	<ul style="list-style-type: none">• Modified Title• Updated Responsibilities to reflect new ESHQ organizational structure• Streamlined Program Description, Goals and Reporting• Updated Appendix A to new ESHQ structure	August 2016
Katie Kosirog	<ul style="list-style-type: none">• Deleted attached list of regulatory drivers and replaced it with link to DOE’s website due to the frequent updating of regulations.• Deleted most of Environmentally Preferred Purchasing paragraph and added a link to the new FESHM chapter 1100, Sustainable Acquisition Program.• Updated list of recycled items.• Minor editorial changes.	April 2011

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1.0 INTRODUCTION

Waste Minimization and Pollution Prevention (WM/P2) concepts are embedded into all aspects of research and operations at Fermilab. A strong WM/P2 program is an integral part of the Laboratory's Environmental Management System. Fermilab's WM/P2 Program reflects Department of Energy, national and local goals and policies, and represents an ongoing effort to integrate WM/P2 with our research mission. Fermilab's WM/P2 program is anchored by three tenets commonly associated with pollution prevention objectives: Reduce, Reuse and Recycle.

2.0 RESPONSIBILITIES

Environment, Safety and Health Section (ES&H) is responsible for annual reporting of all recycled material to various agencies such as DOE headquarters and the Illinois EPA. **Facilities Engineering Services Section (FESS)** is responsible for managing the facility-wide contract for general refuse and recycling. Additionally, FESS has oversight responsibility for construction and demolition (C&D) waste disposal and recycling resulting from subcontractor projects (fixed price and time & materials). The sub-contract or other procurement documents should specifically request that C&D waste be sent to a recycler.

Finance Section is responsible for ensuring that procurement documents associated with work shall specifically request that C&D waste be sent to a recycler. Waste diversion amounts shall be reported back to Fermilab.

Division/Sections/Projects are responsible for ensuring their employees participate in waste minimization and pollution prevention in everyday activities such as sustainable acquisition and recycling (see program description below).

Division/Section Construction Coordinators or Task Managers are responsible for reporting the disposition of all waste materials generated by subcontractor personnel during onsite construction and demolition projects.

Environment, Safety, Health and Quality Section (ES&H) is responsible for annual reporting of all recycled material through the Site Sustainability Plan (SSP).

3.0 PROGRAM DESCRIPTION

Fermilab's Waste Minimization and Pollution Prevention Program is established through the Environmental Management System. DOE Order [436.1](#) Departmental Sustainability describes the regulatory drivers that require the program.

The primary program elements are centered on reduce, reuse and recycle, as described here.

3.1 Reduce

The most effective way to eliminate waste and reduce pollution is to avoid creating it. Source reduction prevents the generation of waste in the first place and thereby minimizes the environmental impact. Consider the total life cycle cost of materials, rather than just the initial cost. Ways to reduce include: choose products and materials that are less toxic or can easily be reused or recycled. (Also see Sustainable Acquisition Program below.) Purchase durable, long-lasting goods. Use sustainable design and engineering practices to reduce the amounts of non-renewable raw materials required. Design and engineer systems for long life. Incorporate end-of-lifecycle recycling and reuse options into processes, products and systems.

3.2 Reuse

Opportunities exist to make serviceable items that are no longer needed available to others who might find a renewed use. Fermilab has multiple options to make items available to others for reuse including an office furniture reuse program, DOE's complex-wide materials exchange data base, the GSA (U.S. General Services Administration) excess system, and the Property Management Excess Center that is used daily for reuse throughout the Lab. FESS - Logistics & Property Control manages Fermilab's excess assets.

3.3 Recycle

Items that cannot be reused should be recycled whenever possible. Recycling is the preferred option for materials that would otherwise be discarded. Recycling reduces the demand for raw materials and the associated environmental impacts. Goods made from recycled materials also typically require much less energy to produce compared to goods made from raw materials. Fermilab's recycling program includes an office desk-side program as well as several other programs run by various internal organizations. Appendix A describes items commonly recycled at the lab.

Construction and demolition (C&D) waste can also be recycled. Typically, 85% of the waste generated during construction and demolition projects occurring at the lab has the potential to be recycled. There are C&D recycling dumpsters staged at locations around the site for routine C&D projects that create smaller volumes of waste. Metals should be recycled in Fermilab owned green recycling hoppers.

You must consult with your respective Radiation Safety Officer before recycling any metals originating from radiological areas, regardless of activation. No radioactive metals may be recycled and must be managed separately. For further information, please see Fermilab Radiological Control Manual Chapter 4, Article 424.

3.4 Sustainable Acquisition Program

Sustainable Acquisition (SA), formerly phrased Environmentally Preferred Purchasing or EPP, is the act of buying products that have a reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. Fermilab's SA program is described in FESHM 1100, Sustainable Acquisition Program.

3.5 Composting

Currently organic waste collected for composting occurs through Fermilab's cafeteria vendor in the kitchen at Wilson Hall.

3.6 Goals and Reporting

DOE has set reduction goals of 50 percent by 2025 (2008 baseline) for both municipal solid waste and C&D waste as part of the Department's Strategic Sustainability Performance Plan. It is Fermilab's intention to exceed this goal to the extent practical with participation by all staff.

Fermilab reports annually on progress toward meeting the reduction goals to DOE. Additionally, Fermilab must report on various types of waste generated (hazardous, radioactive, municipal) to U.S. EPA and Illinois EPA. Divisions and sections shall support these reporting requirements by documenting all of their waste reduction and recycling activities and reporting them to the ES&H Section, Environmental Protection Group.

4.0 APPENDIX A

Common Recycled Items at Fermilab

<u>Recyclable Items</u>	<u>Managed by:</u>
White/ mixed paper, newsprint, magazines, recyclable plastic bottles/ containers, aluminum cans, glass bottles	FESS – Site Services Janitorial Services
Cardboard – boxes must be flattened, and packing materials removed.	FESS – Site Services Janitorial Services
Scrap metal (various)	FESS – Logistics & Property Control
Computers and electronics	FESS – Logistics & Property Control
Batteries	ES&H - Hazard Control Technology Team
Fluorescent and high-intensity discharge lamps	ES&H - Hazard Control Technology Team
Used oils	ES&H - Hazard Control Technology Team
Wood & plastic pallets	FESS – Logistics & Property Control
Printer toner cartridges	FESS – Logistics & Property Control
Contracted Large Scale Construction/Demolition debris	FI – Procurement
Small Scale Construction/Demolition debris	FESS – Site Services
Mercury containing equipment i.e., thermometers, thermostats, relays	ES&H - Hazard Control Technology Team
Polystyrene #6 (hard, white Styrofoam)	ES&H Environmental Protection Group