

PPPL	PRINCETON PLASMA PHYSICS LABORATORY ES&H DIRECTIVES	
	ES&HD 5008 SECTION 12 Environmental Protection	
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ES&HD 5008 Section 12 – Environmental Protection

12.1 INTRODUCTION

Princeton Plasma Physics Laboratory's goal is to be in compliance with all applicable federal, state, and local environmental regulations. In PPPL's Project Mission Statement and Environmental Protection Policy (P-002) PPPL commits to taking actions to comply fully with the environmental requirements.

The U.S. Department of Energy's (DOE) Orders direct all DOE's contractors to protect the environment and include specific environmental requirements.

PPPL operates under a matrix organization. One side of this matrix is composed of a laboratory management committee, the Environmental Safety & Health Executive Board, supported by a technical committee, the Environmental Review Committee, and a line department, the Environmental, Safety, & Health and Infrastructure Support Department.

The following sections provide the basis for PPPL's Environmental Protection Program and refer the reader to the appropriate document(s) for further details about a particular element of the Program.

12.2 SCOPE

This section is applicable to every Laboratory employee (including visiting scientists and engineers) and all Laboratory subcontractors.

12.3 ACRONYMS

CAA – *Clean Air Act of 1970; also CAAA Clean Air Act Amendments of 1990* [40 CFR 50 to 87].

CERCLA – *Comprehensive Environmental Response, Compensation and Liability Act of 1980; also known as "Superfund"* [40 CFR 302 to 305, 307 & 310].

CFC – Chlorofluorocarbons, Class 1 compounds regulated under CAAA.

CWA – *Clean Water Act of 1977* [40 CFR 122] amendment to Federal Water Pollution Control Act of 1972.

DOE-PAO – *U.S. Department of Energy - Princeton Area Office.*

EMS – *Environmental Management System (as defined in EO 13418).*

EO – *Executive Order.*

ERC – *Environmental Review Committee (PPPL committee).*

ESA – *Endangered Species Act of 1973.*

ES&H – *Environment, Safety & Health (PPPL Division).*

ES&H-EB – *Environment, Safety & Health Executive Board (PPPL).*

ESH&IS – *Environment, Safety & Health and Infrastructure Support (PPPL Department).*

FFCA – *Federal Facilities Compliance Act of 1992.*

FIFRA – *Federal Insecticide, Fungicide, and Rodenticide Act of 1972*
[40 CFR 150 to 189].

HP – *Health Physics (PPPL Branch).*

IH – *Industrial Hygiene (PPPL Branch).*

ISM – *Integrated Safety Management.*

M&ES – *Materiel & Environmental Services (PPPL Division).*

M&O – *Maintenance & Operations (PPPL Division).*

NEPA – *National Environmental Policy Act of 1969*
[40 CFR 1500 to 1508, 10 CFR 1021].

NJDEP – *New Jersey Department of Environmental Protection.*

NJPDES – *New Jersey Pollutant Discharge Elimination System*
[NJAC 7:14A-1.1 to 23.34].

NESHAPs – *National Emission Standards for Hazardous Air Pollutants*
[40CFR 61 and 63].

PCBs – *Polychlorinated Biphenyls regulated under TSCA.*

QA – *Quality Assurance (PPPL Division).*

RCRA – *Resource Conservation and Recovery Act of 1976*
[40 CFR 240 to 281].

SARA Title III – *Superfund Amendment and Reauthorization Act of 1986, Emergency Planning and Community Right-to-Know*
[40 CFR 350, 355, 370, & 372].

SBRSA – Stony Brook Regional Sewerage Authority, publicly-owned treatment works; PPPL is an industrial discharger

SPCC – *Spill Prevention Control and Countermeasure Plan*
[40 CFR 110 & 112].

SWDA – *Safe Drinking Water Act of 1974* [40 CFR 264 to 265, 268, & 280].

TSCA – *Toxic Substances Control Act of 1976* [40 CFR 700 to 799].

USEPA – U.S. Environmental Protection Agency; PPPL is in Region II.

12.4 RESPONSIBILITIES

12.4.1 Department Of Energy – Princeton Area Office (DOE-PAO)

The DOE-PAO has oversight responsibilities for all environmental activities. DOE-PAO is the owner and permittee while PPPL is the operator. DOE-PAO has NEPA approval authority for categorical exclusions.

12.4.2 Environmental Safety & Health –Executive Board (ES&H-EB)

PPPL's ES&H-EB is responsible to the Laboratory Director for the overall direction and guidance of the ES&H program at PPPL. The Laboratory Deputy Director is the chair of this Board. ES&H-EB's charter is found in PPPL Organization and Mission Statement O-021.

12.4.3 Environmental Review Committee (ERC)

PPPL's ERC is a resource subcommittee supporting the ES&H-EB. Members are technical specialists representing different departments at PPPL. ERC is responsible for acting on environmental issues and reviewing environmental documents. ERC's charter is found in PPPL O-23.

12.4.4 Environmental Safety & Health and Infrastructure Support (ES&H-IS)

PPPL ES&H-IS Department is composed of several divisions that are directly responsible for environmental activities: Materiel & Environmental Services (M&ES), Environmental Safety and Health (ES&H), Maintenance and Operation (M&O), Quality Assurance (QA), and Site Protection. In addition, ES&H-IS drafts many of the policies and procedures for the laboratory and maintains the web site where all the laboratory policies, charters, procedures, and plans are posted.

M&ES Division is responsible for waste management (hazardous and radiological), asbestos management, environmental restoration, pollution prevention, waste minimization, and environmental compliance. In addition, M&ES is responsible for receiving, shipping and distribution of goods throughout

the laboratory, government property control, government vehicles, and vehicle fuel handling.

ES&H Division is responsible for National Environmental Policy Act (NEPA), compliance, nuclear safety, electrical safety, construction safety, industrial hygiene, industrial safety, accident investigations, and radiological safety Health Physics (HP).

M&O Division is responsible for facilities engineering, house/grounds keeping including solid waste and recycling, facilities operations and maintenance (plumbing, electrical, carpentry, heating and air conditioning) and general plant construction projects (GPP).

QA Division is responsible for promoting awareness of quality principles. With QA's assistance, laboratory management establishes and maintains documents supporting PPPL's quality principles and federal, state, and DOE requirements. QA performs inspections of components, items, and installations (mechanical, electrical, and welding),, the quality aspects of procurements, audits and assessments with the goal of continuing improvements, and providing tracking and data support.

Site Protection Division (SP) is responsible for emergency planning, emergency services, and site security.

12.4.5 Procurement Division

The Procurement Division is responsible for purchasing and subcontracting for equipment, materials and services in support of Laboratory operations in accordance with applicable laws, regulations, policies and requirements. In this role, Procurement supports the above-mentioned Divisions in the execution of their work. In addition, Procurement assists and guides purchasers in identifying products and services that meet the DOE and EPA requirements for environmentally preferred products (APP) in accordance with PPPL's policy on Affirmative Procurement (P-082).

12.4.6 Employees (including visiting staff) and Subcontractors

Employees and Subcontractors are responsible for the following:

- Complying with NEPA requirements;
- Identifying and reporting environmental releases to Site Protection (ext. 3333);
- Understanding the hazards of their work and minimizing risks to self and others;
- Properly disposing of hazardous materials through M&ES;
- Minimizing use of hazardous chemicals;
- Using recycled materials and recycling materials;
- Collecting data for environmental reports, where required by permit conditions.

12.5 TRAINING

All employees and subcontractors are required to attend or challenge the General Employee Training course and pass a written test when employment at PPPL begins (training applies to all subcontractors who will be at PPPL for more than 40 hours), and every three years thereafter.

Other training may be required depending on the requirements of the work activities.

12.6 ENVIRONMENTAL REQUIREMENTS

The table below provides the environmental requirement and its applicability to PPPL.

Requirement	Applicability
<i>Asbestos</i>	<ul style="list-style-type: none"> • Testing prior to removal of material • Notification to EPA • Removal by certified personnel
<i>CAA</i>	<ul style="list-style-type: none"> • Title V exemption • Annual Air Emission Statement exemption • Individual permits for: <ul style="list-style-type: none"> • boilers (4 units), • above-ground storage tank vents (2) • dust collectors (3) • emergency diesel generators (2) • CFC program – inventory and certified technicians.
<i>CERCLA</i>	<ul style="list-style-type: none"> • Inventory completed (1993) • No mandated cleanup activities or further actions warranted.
<i>CWA</i>	<ul style="list-style-type: none"> • Water Quality Standards under NJPDES permits for surface and ground discharges. • Indirect Discharges under Sanitary or Publicly Owned Treatment Works (POTW) for waste water discharges.
<i>EO 11988</i>	Floodplain management compliance with: <ul style="list-style-type: none"> • 500-year floodplain delineation (85 ft above mean sea level at PPPL) • 100-year floodplain delineation (80 ft. above mean sea level at PPPL)
<i>EO 11990</i>	Protection of wetlands restricts activities in delineated wetlands.
<i>EO 12856</i>	Requirements under SARA Title III for Federal facilities: <ul style="list-style-type: none"> • Right-To-Know (R-T-K) • Pollution prevention
<i>EO 13148</i>	Implement (via DOE Order 450.1 requirements): <ul style="list-style-type: none"> • Environmental Management System (EMS) • Reduction of Toxic and Ozone-Depleting Chemicals • Cultural Resource Management Plan • Economic/Environmentally beneficial Landscape Management

Requirement	Applicability
<i>ESA</i>	Requires protection of specific animal and plant species.
<i>FFCA</i>	Requires Federal facilities have Site Treatment Plans for “mixed wastes”, both radiological and hazardous wastes.
<i>FIFRA</i>	Applies to application of herbicides and pesticides by certified contractors.
<i>NEPA</i>	Applies to all activities that have not been characterized as “inherently low hazard” (see ES&H-014)
<i>Historical Preservation</i>	Required identification of historical and archaeological resources.
<i>Lab Certification</i>	New Jersey program for certifying analytical laboratories for data reported to NJDEP.
<i>Medical Waste</i>	Required approved waste disposer for medical waste generated by on-site occupational health office.
<i>NJPDES</i>	Under CWA, permit program for : <ul style="list-style-type: none"> • Surface water discharges – monthly reports and periodic chronic toxicity tests
<i>RCRA</i>	<ul style="list-style-type: none"> • Hazardous waste disposal program • USTs – all tanks removed from service before 1996.
<i>SARA</i>	<ul style="list-style-type: none"> • Inventory of hazardous materials • Material Safety Data Sheets (MSDS) required • Completed Tier I form for each chemical above threshold (12 chemicals at PPPL).
<i>SPCC</i>	Required plan for petroleum containing equipment: <ul style="list-style-type: none"> • Inspections and record keeping • Release notification and reporting requirements
<i>SWDA</i>	<ul style="list-style-type: none"> • Quarterly inspections of physical connections with water purveyor. • Annual internal inspections of equipment.
<i>Soil Erosion /Sediment Control</i>	<ul style="list-style-type: none"> • Approval prior to disturbance of soil > 5000 sq. feet. • Activities to prevent soil erosion for projects not requiring formal approval.
<i>Sanitary</i>	<ul style="list-style-type: none"> • Monthly monitoring of Liquid Effluent Collection tanks (LEC) prior to release to sanitary.
<i>Solid Waste</i>	Approved hauler / recyclers for on-site wastes.
<i>TSCA</i>	PCB inventory and approved disposal facility.
<i>Wetlands</i>	Permitted activities require NJDEP permit

12.7 IMPLEMENTING DOCUMENTS:

The following is a listing of important PPPL environmental documents:

PPPL	Policy/Charter/Plan
<i>P-002</i>	Environmental Protection
<i>O-021</i>	Environment, Safety and Health Executive Board Charter
<i>O-023</i>	Environmental Resource Committee Charter
	Integrated Safety Management Plan
<i>ES&H 5008 Section 12</i>	Environmental Protection
<i>ES&H5008 Section 10</i>	Radiological Program
<i>ESH-014</i>	NEPA Review System
ES&H/QA	Plan
<i>EQP-001</i>	Environmental Monitoring Plan (EMP)
<i>EQP-002</i>	Environmental Protection Implementation Plan
<i>EQP-003</i>	Ground Water Management Plan
<i>EQP-004</i>	Institutional Quality Assurance Plan
<i>EQP-005</i>	Radiological ALARA Program Plan
<i>EQP-006</i>	Pollution Prevention Plan
<i>EQP-XX</i>	Cultural Management Plan
<i>EQP-008</i>	Storm Water Pollution Prevention Plan
M&ES	Procedure
<i>EM-OP-XX</i>	Waste Management Procedures
<i>EM-OP-31</i>	Surface Water Sampling
<i>EM-OP-32</i>	Ground Water Sampling
<i>EM-OP-33</i>	Rain Water Sampling
<i>EM-OP-34</i>	Environmental Reporting
<i>EM-OP-35</i>	Non-Emergency Release Notification
<i>EM-OP-42</i>	Environmental Permits
M&O	Plan
	Site Management Plan
	Storm Water Management Plan
	Landscape Management Plan
SP	Plan
<i>Emergency Preparedness Plan Supplement 6</i>	Spill Prevention Control and Countermeasure Plan

12.8 Reports

Required environmental reports are listed in the table below:

Frequency	Report Title
Biennial	RCRA Waste Generator's Report
Biennial	TSCA PCB Report
Annual	SARA Title III Report
Annual	Site Environmental Report
Annual	Medical Waste Generator's Report
Annual	NESHAPS Report
Annual	Chronic Toxicity Testing
Quarterly	Permit Status Updates
Monthly	Discharge Monitoring Report (DMR)
Monthly	SBRSA Self-Monitoring Report
As Needed	Asbestos Removal Notification
As Needed	Release Confirmation Report

12.9 REVIEWS

The following is a list of examples of reviews performed:

- PPPL Customer Survey for Materiel & Environmental Services Division
- PPPL QA Audits and Assessments (QA-002) • Monthly PPPL Tracking and Trending Report
- Unified Safety Reviews
- External Agency Audits or Inspections

12.10 REFERENCES

All laws and Regulations cited in **Section 12.2 Acronyms.**

All Documents listed in **Section 12.7 Implementing Documents.**

All Reports listed in **Section 12.8 Reports**

DOE References

DOE Order 450.1, Environmental Protection

DOE Order 231.1, Environment, Safety & Health Reporting

DOE 5400.5, Radiation Protection of the Public and the Environment

10 CFR 1021, DOE NEPA Guidelines

10 CFR 1022, Compliance with Floodplain/Wetlands Environmental Review Requirements

PPPL References:

EWM-001, PPPL Hazardous Waste Management

PPPL Laboratory Procedure GEN-006, Occurrence Reporting and Processing of Operations Information

PPPL Material Control Policy and Procedures Manual, Section 15
<http://www-local.pppl.gov/eshis/index/shtml>