

MPG 8870.1

BASELINE

EFFECTIVE DATE: February 8, 2000

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# **MARSHALL PROCEDURES AND GUIDELINES**

**AD01**

## **MSFC ENVIRONMENTAL MANAGEMENT PROGRAM**

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## **PREFACE**

### **P.1 PURPOSE**

The purpose of this Directive is to explain how the Marshall Space Flight Center's (MSFC) environmental management program will be conducted. This Directive establishes responsibility among MSFC organizations for managing and conducting MSFC environmental management compliance activities. This Directive also ensures the cooperation and support of all MSFC organizations in the efforts to achieve the NASA and MSFC environmental goals and to meet environmental regulation requirements.

### **P.2 APPLICABILITY**

This Directive applies to all MSFC organization elements and on-site contractors located at MSFC and component installations.

### **P.3 AUTHORITY**

Authority will be specified in the chapters following Document Content.

### **P.4 APPLICABLE DOCUMENTS**

- a. MPG 1800.1, "Bloodborne Pathogens"
- b. EMP-SOP No. 420-47-2, "Directorate of Environmental Management Planning Standard Operating Procedure"
- c. MSFC Site Management Plan
- d. Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et seq.)
- e. Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.)
- f. Risk Management Plan, April 1999

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**P.5 REFERENCES**

Title V Permit Application, Clean Air Act

**P.6 CANCELLATION**

MMI 8800.3 dated March 19, 1991

Original Signed by  
Carolyn S. Griner for

A. G. Stephenson  
Director

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## DOCUMENT CONTENT

### 1. DEFINITIONS

#### 1.1 Acronyms.

- 1.1.1 ADEM - Alabama Department of Environmental Management
- 1.1.2 AD01 - Organization code for MSFC Center Operations Directorate
- 1.1.3 AD10 - Organization code for MSFC Environmental Engineering Department
- 1.1.4 AST - Above Ground Storage Tank
- 1.1.5 BMP - Best Management Practices
- 1.1.6 CEQ - Council of Environmental Quality
- 1.1.7 CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
- 1.1.8 CERP - Consolidated Environmental Response Plan
- 1.1.9 CFR - Code of Federal Regulations
- 1.1.10 DI - Deionized water
- 1.1.11 DOT - Department of Transportation
- 1.1.12 EED - Environmental Engineering Department
- 1.1.13 EO - Executive Order
- 1.1.14 EPA - Environmental Protection Agency
- 1.1.15 EPCRA - Emergency Planning & Community Right to Know Act
- 1.1.16 ESC - Environmental Support Contractor
- 1.1.17 FFA - Federal Facilities Agreement
- 1.1.18 HAP - Hazardous Air Pollutant
- 1.1.19 HWSF - Hazardous Waste Storage Facility

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- 1.1.20 IDW - Investigation Derived Waste
- 1.1.21 IWTF - Industrial Wastewater Treatment Facility
- 1.1.22 LH2 - Liquid Hydrogen
- 1.1.23 LNG - Liquefied Natural Gas
- 1.1.24 LUC - Land Use Control
- 1.1.25 MACT - Maximum Achievable Control Technology
- 1.1.26 MSDS - Material Safety Data Sheet
- 1.1.27 MSFC - Marshall Space Flight Center
- 1.1.28 NAAQS - National Ambient Air Quality Standards
- 1.1.29 NASA - National Aeronautics and Space Administration
- 1.1.30 NEPA - National Environmental Policy Act
- 1.1.31 NESHAP - National Emission Standards for Hazardous Air Pollutants
- 1.1.32 NPDES - National Pollutant Discharge Elimination System
- 1.1.33 NPG - NASA Procedures and Guidelines
- 1.1.34 NSPS - New Stationary Pollutant Sources
- 1.1.35 ODS - Ozone Depleting Substance
- 1.1.36 OSHA - Occupational Safety & Health Administration
- 1.1.37 P2 - Pollution Prevention
- 1.1.38 POC - Point of Contact
- 1.1.39 RCRA - Resource Conservation and Recovery Act
- 1.1.40 RMP - Risk Management Program
- 1.1.41 RSA - Redstone Arsenal
- 1.1.42 SAA - Satellite Accumulation Area
- 1.1.43 SARA - Superfund Amendment and Reauthorization Act

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1.1.44 SID - State Indirect Discharge

1.1.45 SWMA - Solid Waste Management Area

1.1.46 SWP3 - Storm Water Pollution Prevention Plan

1.1.47 USACE - U.S. Army Corps of Engineers

1.1.48 USFWS - U.S. Fish & Wildlife Service

1.1.49 UST - Underground Storage Tank

1.2 Air Releases. Release of substances to the air which are known to cause, or reasonably anticipated to cause, death, injury, or serious adverse effects to human health or the environment.

1.3 Biohazardous Sharps Waste. Devices capable of cutting or piercing that are contaminated with biohazardous waste. Examples include contaminated hypodermic needles, scalpels, razor blades, and x-acto blades.

1.4 Biohazardous Waste. Waste (including animal carcasses) contaminated with infectious agents known to cause human illness and not contaminated with radioactive materials or hazardous chemicals.

1.5 Controlled Waste. Controlled waste streams are those waste streams not classified as hazardous (according to regulation) but that require specific processing, handling, or disposal different from other solid wastes.

1.6 Empty Acutely Toxic Container. A container or inner liner removed from a container that has held an acutely hazardous waste is empty if the container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate. ("Triple rinse" refers to containers that have been flushed three times, each time using a volume of diluent at least equal to 10% of the container's capacity. This solution should be collected in a properly labeled container.)

1.7 Empty Compressed Gas Cylinder. A container that has held a hazardous material that is a compressed gas is empty when the pressure in the container approaches atmospheric.

1.8 Empty Container. A container or an inner liner removed from

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a container that held any hazardous material/waste, except a compressed gas or that is identified as an acute hazardous waste is empty if all materials have been removed that can be removed using the practices commonly employed to remove materials from that type of container (e.g., pouring, pumping, and aspirating); no more than one inch of residue may remain on the bottom of the container.

1.9 Environmental Activities. Includes all projects, studies, analyses, monitoring, and operational involvement of Center elements where the objective is pollution abatement and/or improvement of the environmental quality. Included are such activities as environmental assessments, environmental impact statements, construction and operational permits, air and water quality modeling and monitoring systems, ecological baselining, plant operations, effluent monitoring, sanitary landfill, pesticides applications, and flight impact studies (e.g., sonic boom, risk, and meteorology assessments).

1.10 Hazardous Material. Any material defined as hazardous under Title 29 CFR 1910.120(c) and includes material presenting health and/or physical hazard; such material has one or more toxic, flammable, corrosive, or reactive properties.

1.11 Hazardous Waste. Byproducts of society that can pose a substantial or potential hazard to human health or the environment when not properly managed; possesses at least one of four characteristics (ignitable, corrosive, reactive, or toxic) or appears on special U.S. EPA lists; includes toxic waste and unused chemicals.

1.12 Hazardous Waste Generator. Organization that creates waste byproducts that are hazardous waste.

1.13 Investigation Derived Waste (IDW). Waste generated during well drilling (soil cuttings), purged water from monitoring wells, rinse waters, etc., from investigations of potentially contaminated sites.

1.14 Maximum Achievable Control Technology. Technology required for major sources of listed hazardous air pollutants, reflecting maximum degree of emission reductions achievable, taking into account availability, cost, and other factors.

1.15 Medical Waste. Medical waste is defined as biohazardous waste, biohazardous sharps waste, and pathology waste.

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1.16 Noncompliance Activities. Areas where environmental activities are not in compliance with Federal, State, and local environmental laws and regulations.

1.17 Pathology Waste. Recognizable human anatomical parts and fixed human surgery specimens and tissues.

1.18 Recycling. Recycling is the diversion of materials from the solid waste stream and the beneficial reuse of such materials.

1.19 Risk Management Program Processes. Liquid hydrogen, liquefied natural gas, and propane storage.

1.20 Small Spill. Any spill that is not dangerous or unknown and can be properly cleaned up by the personnel responsible for the spill.

1.21 Storm Water. Any runoff water or contained water resulting from rain.

1.22 Underground Storage Tank (UST). A UST is defined as a storage tank and its integral piping system that has greater than 10% of its storage capacity in contact with the ground.

1.23 Universal Waste. Universal wastes are those wastes that would normally be regulated as hazardous wastes, but that have been classified as "universal wastes" with alternative management standards. Examples include batteries, pesticides, mercury-containing thermostats, and mercury-containing lamps.

1.24 Used Oil. Used oil is any oil which has been refined from crude oil or synthetic oil; will no longer be used for its original purpose, and must be disposed of or recycled.

## 2. RESPONSIBILITIES

Responsibilities are detailed in the document chapters.

## 3. PROCEDURES

Procedures are detailed in the document chapters.

## 4. RECORDS

- 4.1 Clean Air Permit data records (Paragraph 8.4.4)
- 4.2 Hazardous Waste Personnel Training records (Paragraph 1.2)
- 4.3 HAZWOPER Training and Certification records (Paragraph 1.1)

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- 4.4 Incident Command Training records (Paragraph 1.5)
- 4.5 Medical Waste Management training records (Paragraph 6.3)
- 4.6 MSFC Form 4071 (Paragraph 2.4.4)
- 4.7 MSFC Form 4072 (Paragraph 2.4.1)
- 4.8 MSFC Form 4099 (Paragraph 3.4.5)
- 4.9 Storm water inspection records (Paragraph 9.4.4)
- 4.10 Storm water training records (Paragraph 9.2.2)

## **5. FLOW DIAGRAM**

Flow diagrams follow document chapters. The numbering within the flow diagram boxes correspond to the procedural steps within each chapter.

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## CHAPTER 1

### PERSONNEL TRAINING & CERTIFICATION

As required to meet Federal, State, and NASA regulations, ordinances, and guidelines, all personnel involved in hazardous waste operations, chemical inventory, storm water management, etc., are required to undergo a training and certification program.

It is the responsibility of the first-line supervisors to ensure that all personnel in their organizations involved in environmental requirements attend the required training. Training requirements are as follows:

1.1 Hazardous Waste Operations and Emergency Response (29 CFR 1910.120). Employees designated to participate in emergency response operations or site remediation must be trained and certified before taking part in actual emergency operations and must receive annual refresher training. Annual refresher training is provided by the EED and meets OSHA 29 CFR 1910.120 requirements. Records of training and certification shall be retained by the employee for not less than 5 years.

1.2 Hazardous Waste Personnel Training (ADEM Rule 335-14-6-.02(7)). Training and certification must be given to all hazardous waste operations personnel working at the MSFC HWSF. This training must occur within 6 months of being hired, with employees not working in an unsupervised capacity until they are trained. Training must be renewed every 365 days. Records of training and certification shall be retained by the employee for not less than 5 years.

1.3 Hazardous and Controlled Waste Generator Training (ADEM Rule 335-14-5-.02(7)). Training must be given to personnel who utilize accumulation sites. This training must occur within 6 months of being hired or of assuming new duties that are associated with hazardous waste, with employees not working in an unsupervised capacity until they are trained. Training must be renewed every 365 days. This training is provided three times per year by the EED.

1.4 Chemical Inventory Training. All personnel using any hazardous chemicals must attend this training. This training is necessary for MSFC to maintain an accurate chemical inventory for reporting purposes. The Chemical Inventory Training Manual is available online at:

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[http://eemo.msfc.nasa.gov/environmental/haz mat/](http://eemo.msfc.nasa.gov/environmental/haz_mat/)

1.5 Incident Command Training. Employees designated to manage emergency response operations must be trained, certified, and receive annual refresher training. Annual refresher training is provided by EED and meets Title 29 CFR 1910.120 requirements. Records of training and certification shall be retained by the employee for not less than 5 years.

1.6 Storm Water Inspection Training. All personnel involved in storm water inspections shall attend an annual training class provided by the EED to ensure that inspections are being carried out regularly and correctly.

1.7 Pollution Prevention Training. All personnel shall have access to voluntary pollution prevention training provided by the EED. This training will be self-paced, self-explanatory, and will increase employee awareness of pollution prevention goals and opportunities.

1.8 Air Compliance Training. Operators of MACT air compliance equipment shall be trained by the EED as required.

1.9 AST/UST Training. All AST and UST users and operators shall attend an annual spill prevention briefing provided by the EED. These briefings will cover the following areas:

1.9.1 Loading and unloading procedures

1.9.2 Site drainage

1.9.3 Spill response procedures

1.9.4 Applicable pollution control laws and regulations

1.9.5 Known spill events or failures, malfunctioning storage components, and recently developed precautionary measures

1.10 Spill Prevention, Control, & Countermeasures Training. All personnel involved with ASTs and USTs shall attend an annual training class provided by the EED to ensure appropriate emergency response in the event of an AST/UST rupture or spill. This training is a requirement in the MSFC CERP.

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## CHAPTER 2

### HAZARDOUS WASTE COMPLIANCE

MSFC is classified under ADEM Rule 335-14-3 as a large-quantity hazardous waste generator. MSFC generates more than 1,000 kilograms of hazardous waste each month. MSFC's priorities regarding hazardous waste management are to (1) reduce; (2) reuse; (3) recycle; and (4) dispose. Special attention shall be given to the management of hazardous wastes generated from ongoing operations, research programs, or related activities. Hazardous waste is stored at the MSFC Hazardous Waste Storage Facility. Organizations maintain waste at their locations in specified satellite accumulation areas.

2.1 Authority. Environmental laws and regulations governing hazardous waste compliance are as follows:

2.1.1 Title 40 CFR, Parts 260-265, Protection of the Environment

2.1.2 Title 49 CFR, Department of Transportation, Parts 100-177, Hazardous Materials Definitions

2.1.3 ADEM Administrative Code 335-14, Hazardous Waste Program

2.1.4 ADEM Administrative Code 335-13, Solid Waste Program

2.2 EED Responsibility. The EED shall ensure proper management and disposal of hazardous and controlled waste in accordance with applicable regulations.

2.2.1 Provide guidance and instruction to MSFC organizations regarding hazardous and controlled waste management and disposal.

2.2.2 Provide training for organization personnel.

2.2.3 Properly dispose of hazardous and controlled waste.

2.2.4 Report to State and Federal agencies as needed.

2.3 Basic Organization Responsibility. The responsibilities of the user/generator of hazardous and controlled wastes are as follows:

2.3.1 Ensure that waste materials generated are properly managed.

2.3.2 Appoint one POC and two alternates for each container

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collecting waste and ensure that the personnel attend the hazardous and controlled waste generator training.

2.3.3 Maintain hazardous material/waste tanks and containers to ensure structural integrity.

2.3.4 Maintain proper identification and labeling of all hazardous material/waste in the area.

2.3.5 Turn in chemicals that are out of shelf life, not needed, or obsolete on a frequent basis.

#### 2.4 Procedure for New or Existing Waste Stream.

2.4.1 The user will identify all expected hazardous or controlled waste producing processes prior to beginning the process and submit the MSDS and MSFC Form 4072 to EED. (Form 4072 is maintained by EED for 2 years, then disposed).

2.4.2 EED will evaluate the need for collecting the waste stream. If not a hazardous or controlled waste, the debris will be disposed in regular trash.

2.4.3 EED will issue a SAA container for each waste stream requiring collection.

2.4.4 The user shall ensure each hazardous and controlled waste SAA container is: (a) properly accumulated for disposal and placed in the correct container, at or near the point of generation; (b) inspected weekly and documented on MSFC Form 4071 (multiple containers may be documented on the same form; Form 4071 is maintained by EED for 2 years, then disposed); (c) compatible with the container and other co-located hazardous materials/waste; (d) properly labeled to identify contents and hazards; (e) in good condition; (f) closed/sealed when not in use; (g) handled and stored in a manner to prevent rupture or leakage from the container; (h) reported if any changes in the hazardous waste-producing process occurs by submitting MSFC Form 4072 to EED; and (i) verified for accuracy of the waste stream profile as requested.

2.4.5 EED will inspect each SAA container monthly.

2.4.6 The user shall turn in containers by dialing the number on the label on the day each has been filled (90% for liquid containers) and mark the date on the container's identification label. The following information will be required for turn in of container: container number, user name, building, and room

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number.

2.4.7 The user shall request a replacement container if needed. If the waste generation has ceased, EED should be notified.

2.4.8 EED will pick up the turned-in container(s) and issue new containers within 72 hours as requested.

2.4.9 EED will move containers to the HWSF for proper off-site disposal.

## 2.5 Procedures for Chemical Product Disposal.

2.5.1 Users shall turn in chemical products in original packaging by submitting a completed Form 4072 with MSDS for each chemical product. Chemicals that should be turned in are out-of-shelf life, not needed, or obsolete. All containers that have been opened, and all unopened containers that are 5 gallons or less, shall be turned in to EED. Unopened containers that are greater than 5 gallons should be turned in to the Logistics Services Department.

2.5.2 EED will determine if an existing user SAA container is available that the chemical/product can be poured into. If there is a SAA container, the user will be instructed to place the material in said container.

2.5.3 If no container is available, the user shall request that the chemical product be removed.

2.5.4 EED will inspect chemical product containers at the user locations to verify the containers are ready for transport.

2.5.5 EED will verify that the containers are not leaking. If any container is leaking, it will be overpacked as needed.

2.5.6 EED will move the chemical product containers to the HWSF within 72 hours.

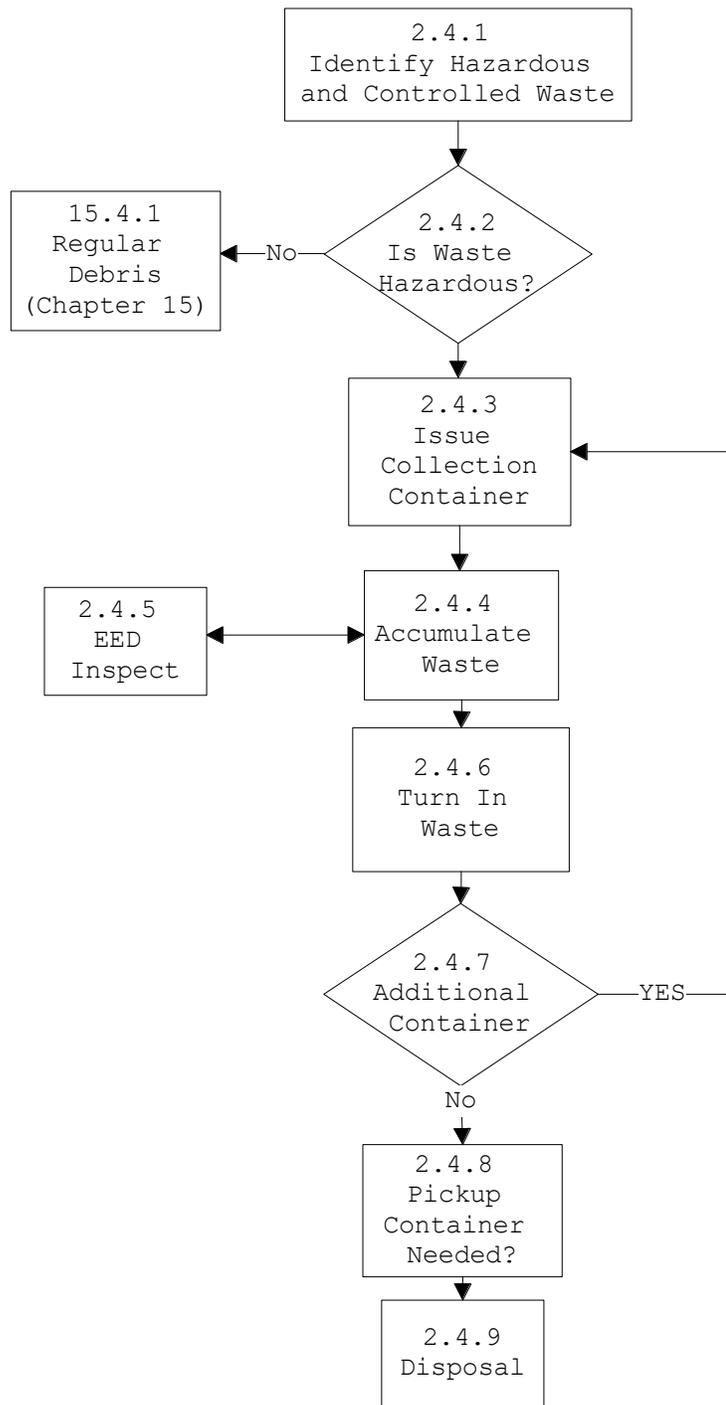
2.5.7 EED will dispose of chemical product containers.

## 2.6 Guidelines.

None

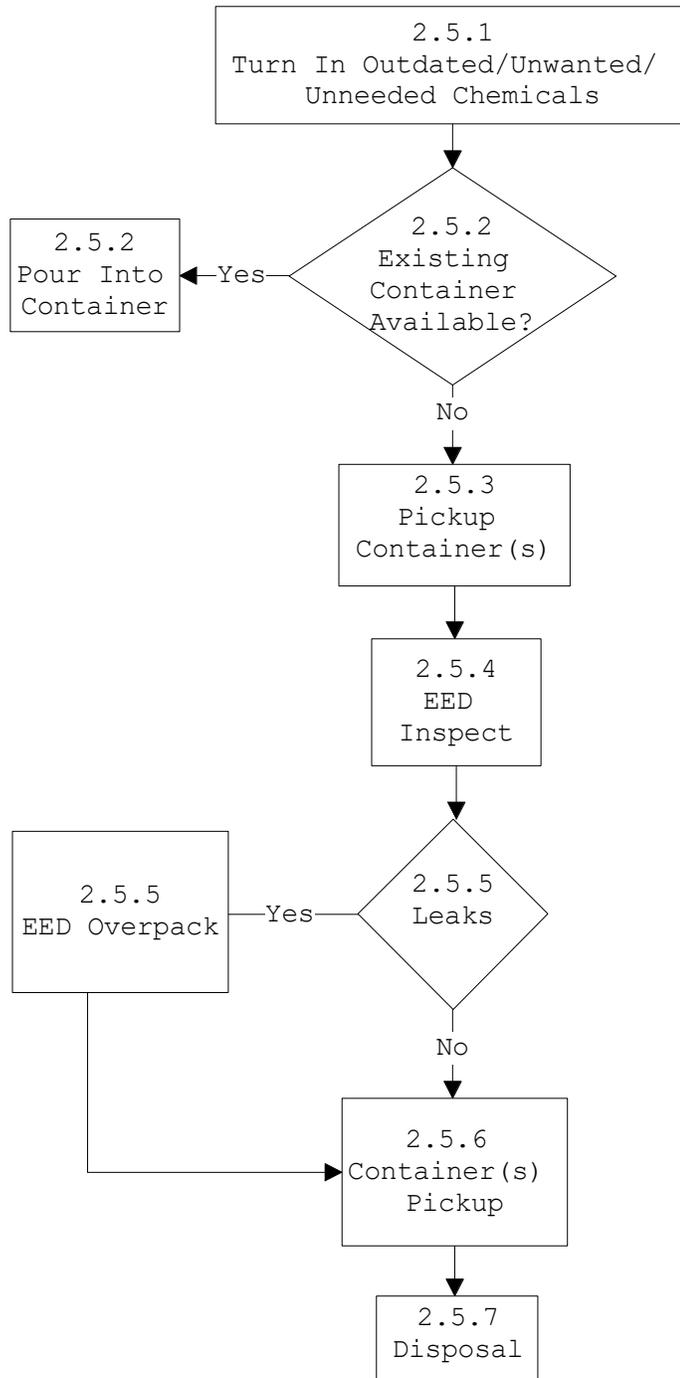
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2.7 Flow Diagram for New or Existing Waste Stream.



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2.8 Flow Diagram for Chemical Product Disposal.



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## CHAPTER 3

### HAZARDOUS MATERIALS COMPLIANCE

MSFC maintains an inventory of chemicals used/stored on-site for reporting the annual chemical inventory and toxic release inventory to EPA, ADEM, and other local agencies.

3.1 Authority. Environmental laws and regulations governing hazardous material compliance are as follows:

3.1.1 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980

3.1.2 Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986

3.1.3 Superfund Amendments and Reauthorization Act (SARA), Title III, Sections 311, 312, and 313

3.1.4 Title 29 Code of Federal Regulation (CFR) 1910.1200, Hazard Communication Standard

3.1.5 Title 29 CFR 1960, Basic Program Elements for Federal Occupational Safety and Health

3.1.6 Title 40 CFR 350, Trade Secrecy Claims for Emergency Planning and Community Right-to-Know Information; and Trade Secret Disclosures to Health Professionals

3.1.7 Title 40 CFR 355, Emergency Planning & Notification

3.1.8 Title 40 CFR 370, Hazardous Chemical Reporting; Community Right-to-Know

3.1.9 Title 40 CFR 372, Toxic Chemical Release Reporting; Community Right-to-Know

3.1.10 Title 40 CFR, Protection of the Environment, Parts 260-265

3.1.11 Title 49 CFR, Transportation, Parts 100-177, Hazardous Material Regulations

3.1.12 Public Law 94-469, Toxic Substances Control Act

3.1.13 Federal Standard 313A, Material Safety Data Sheet (MSDS), Preparation and Submission

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3.1.14 MPG 1840.2, "MSFC Hazard Communication Program"

3.1.15 MWI 5100.1, "Procurement Initiators Guide" (reference only)

3.1.16 MPG 1840.3, "MSFC Hazardous Chemicals in Laboratories Protection Program"

3.1.17 MSFC MSDS Management Procedure

3.2 EED Responsibility.

3.2.1 Ensure proper tracking and reporting of hazardous materials.

3.2.2 Maintain a chemical inventory data base of all hazardous materials used at MSFC.

3.3 Basic Organization Responsibility. Each organization shall appoint at least one hazardous material POC for each office/department within the organization.

3.4 Procedures.

3.4.1 User requirement for chemical is determined.

3.4.2 In order to minimize waste chemicals, users requiring small amounts of chemicals should evaluate on-site resources to determine if the requirement can be met by borrowing chemicals from other users by viewing the chemical inventory at the following hyperlink:

[http://eemo.msfc.nasa.gov/environmental/haz\\_mat/](http://eemo.msfc.nasa.gov/environmental/haz_mat/)

If the chemical is available, request from other organization point of contact to determine if it can be borrowed.

3.4.3 If the chemical is not available or obtainable from other on-site organizations, order chemicals through normal procedures and obtain container sizes that are appropriate for your usage.

3.4.4 If the chemical purchase is replenishing existing stock, MSFC Form 4099 is typically not required.

3.4.5 As new chemical purchases are received, complete and submit MSFC Form 4099 to EED for inventory update (Form 4099 is maintained by EED for 2 years, then disposed); copy of MSDS shall

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accompany MSFC Form 4099 or provide existing MSDS number from the following hyperlink:

[http://eemo.msfc.nasa.gov/environmental/haz\\_mat/](http://eemo.msfc.nasa.gov/environmental/haz_mat/)

3.4.6 Users will annually update chemical inventory reprints and attend training provided by EED. Report and maintain inventories of hazardous chemicals used and/or stored. Review, edit, and complete annual chemical inventory for organization activities or as requested. The POC will prepare and submit a complete hazardous chemical inventory to EED for the organization. Each office/department manager shall certify the accuracy of each inventory prepared by the organization.

3.4.7 EED will inspect users' inventory of chemicals to verify accuracy of reported chemicals. All discrepancies will be documented, and users will be required to update their inventory by submitting MSFC Form 4099. The users shall take immediate corrective action regarding any discrepancies found during quarterly environmental inspections.

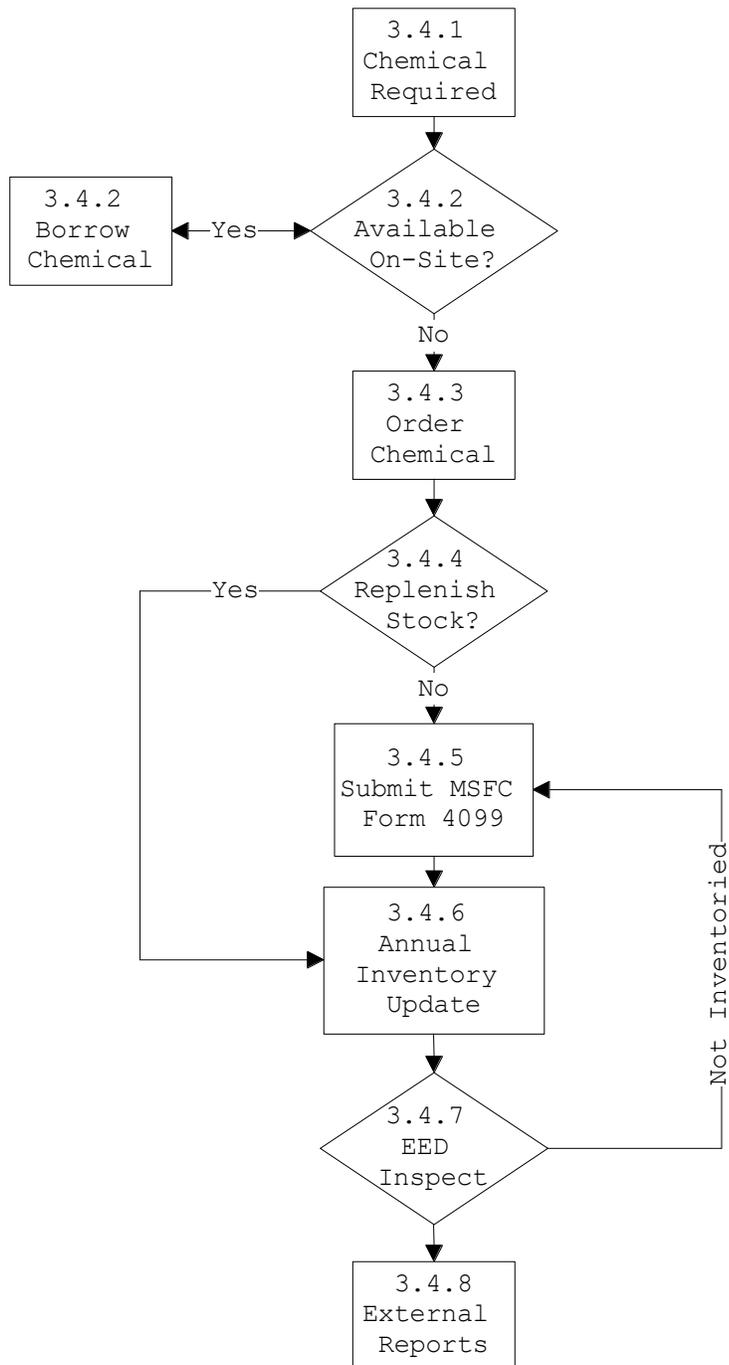
3.4.8 Report to State and Federal agencies as needed.

3.5 Guidelines.

None

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3.6 Flow Diagram for Hazardous Material Compliance.



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## CHAPTER 4 CHEMICAL SPILLS

All chemical spills will be cleaned up immediately to ensure the safety of employees and to protect the environment.

4.1 Authority. Laws and regulations governing chemical spills are as follows:

4.1.1 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980

4.1.2 Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986

4.1.3 Superfund Amendments and Reauthorization Act (SARA), Title III, Sections 311, 312, and 313

4.1.4 Title 29 Code of Federal Regulations (CFR) 1910.1200, Hazard Communication Standard

4.1.5 Title 40 CFR, Trade Secrecy Claims for Emergency Planning and Community Right-to-Know Information; and Trade Secret Disclosures to Health Professionals

4.1.6 Title 40 CFR 355, Emergency Planning & Notification

4.1.7 Title 40 CFR 370, Hazardous Chemical Reporting; Community Right-to-Know

4.1.8 Title 40 CFR 372, Toxic Chemical Release Reporting; Community Right-to-Know

4.1.9 MPG 1040.3, "MSFC Emergency Plan"

4.2 EED Responsibility. The EED shall respond to any spill when requested or when notified by a 911 emergency call. The EED shall provide direction in proper cleanup of chemical spills.

4.3 Basic Organization Responsibility. Organizations must ensure that all spills are cleaned up.

4.4 Procedures.

4.4.1 Organizations who spill chemical products should evaluate if the spill can be cleaned up internally.

4.4.2 Begin immediate cleanup of small spills of known type and

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quantity; call 4-3919 for assistance, if necessary. (Small spills are not reportable to EED, if cleaned up properly).

4.4.3 Call 911 for all other spills, which include small spills of unknown type, all dangerous chemical spills, and all large spills.

4.4.4 Clean up spill and ensure proper disposal of waste materials from small spills in accordance with Chapter 2.

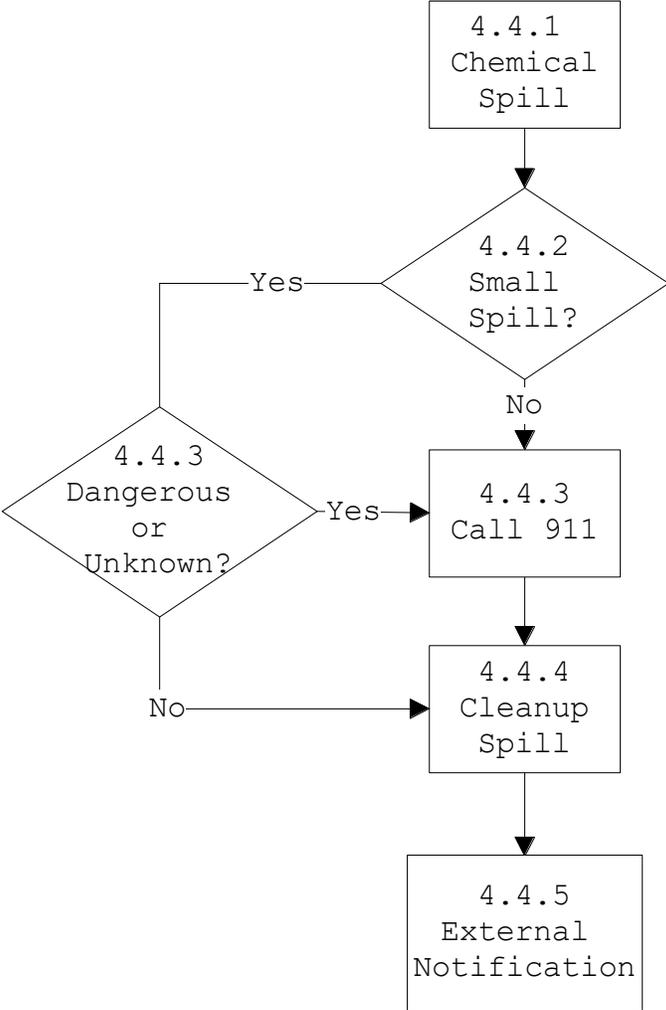
4.4.5 The EED shall notify ADEM and EPA of all reportable spills as required.

4.5 Guidelines.

None

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4.6 Flow Diagram for Chemical Spills.



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## CHAPTER 5

### EMPTY CONTAINER MANAGEMENT

Empty containers pose a threat to the environment if not properly managed. To protect the environment and to ensure proper handling of empty containers, the EED has provided specific standards and guidelines.

#### 5.1 Authority.

Title 40 CFR, Parts 260-265, Protection of the Environment.

5.2 EED Responsibility. The EED shall provide guidance and direction regarding empty containers.

5.3 Basic Organization Responsibility. The user shall be responsible for the proper management of empty containers to protect employees' safety and the environment.

#### 5.4 Procedures.

5.4.1 Empty container(s) that have contained chemical products must be properly managed by turn-in on a regular, frequent basis.

5.4.2 Ensure containers are empty by all practical means such as pumping, pouring, aspirating, etc.

5.4.3 Ensure container bungs and/or tops are in place prior to storage/turn-in and on pallets (5-gallon and 1-gallon containers shall be stacked no more than two high). Retain markings, placards, or labels on empty containers as required by regulation of the DOT until the packaging is sufficiently cleaned of residue and purged of vapors to remove any potential hazards.

5.4.4 Notify the EED and furnish the following information for turn-in of empty containers: name, office symbol, NASA/contractor, telephone number, total number of empties, container size(s), storage location, and the chemical they last contained.

5.4.5 EED will inspect containers to verify if empty. If the container(s) is not empty, the user shall empty as described in paragraph 5.4.2.

5.4.6 EED will remove empty container(s) and properly manage.

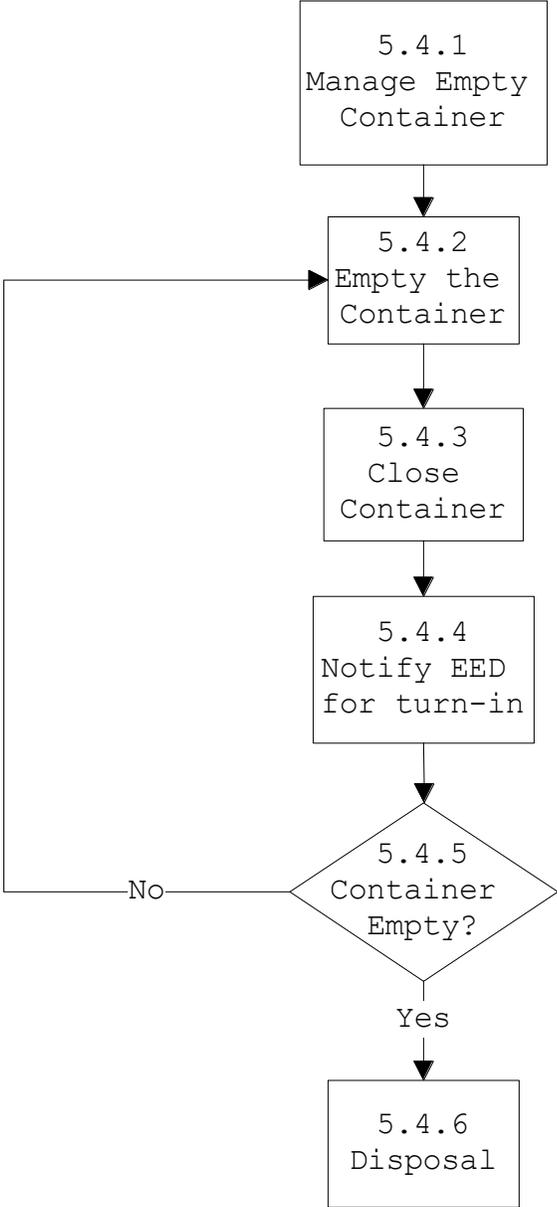
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5.5 Guidelines.

None

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5.6 Flow Diagram for Empty Container Management.



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## CHAPTER 6

### MEDICAL WASTE MANAGEMENT

MSFC generates medical waste in several locations on-site. The types of medical waste generally produced are (a) biohazardous sharps; (b) blood and body fluids; (c) microbiological waste; (d) surgical waste; and (e) disposable vials, tubes, culture flasks, paper products, containers, latex gloves, and face masks, etc. To ensure proper disposal and handling, the EED has provided specific standards and guidelines. Handling of medical waste or other potential infectious materials will be done in accordance with MPG 1800.1. Medical emergency personnel are responsible for the collection and proper disposal of emergency medical waste.

#### 6.1 Authority.

ADEM Rule 335-13, Solid Waste Program

6.2 EED Responsibility. The EED shall provide guidance and direction for proper disposal of medical waste.

6.3 Basic Organization Responsibility. Training of employees with potential occupational exposure is the responsibility of each MSFC organization/contractor involved in the generation of medical waste and must be provided at the time of initial assignment and as required thereafter. Training records will include dates of training sessions, contents or summary of training sessions, names, and job titles of persons conducting the training. Basic organizations are responsible for maintaining employee training records.

#### 6.4 Procedures.

6.4.1 The user will identify all expected medical waste producing processes prior to beginning the process and submit the MSDS and MSFC Form 4072 to EED.

6.4.2 EED will evaluate the need for collecting the waste stream. If not a medical waste, the debris will be disposed in regular trash.

6.4.3 EED and the affected organizations shall jointly determine if the medical waste or equipment shall be treated on-site and/or disposed in SAA containers.

6.4.4 The organization shall (a) autoclave reusable equipment

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and glassware containers prior to reuse and ensure proper treatment by affixing temperature sensitive tape to each bag, container, or sterilization packets or "envelopes" that have a temperature sensitive "dot" that verifies treatment; (b) treat plastic containers with a 10% solution of bleach to render them nonhazardous and dispose as regular trash; (c) autoclave liquid culture media to render it nonhazardous and wash down the sink with copious amounts of water (this type of autoclaving requires that a bacillus stearotherophilus spore test kit be utilized once a month to evaluate effectiveness of the autoclave; each event in the autoclave shall be recorded on a computer printout of each cycle, which gives date, time, exposure temperature (minimum/maximum), exposure pressure (minimum/maximum psi), and cycle time); and (d) treat blood and blood products that are to be poured into the sink (sanitary sewer) with a 10% solution of bleach with a retention time of approximately 30 minutes to render them nonhazardous and wash down the sink with copious amounts of water.

6.4.5 EED will issue a SAA container(s) for each medical waste stream requiring collection. Containers will (a) utilize red lettering with a contrasting background color and be conspicuously labeled "BIOHAZARDOUS"; and (b) be impermeable to moisture and have strength that prevents ripping, tearing, or bursting under normal conditions of use and be single-use containers destined for incinerators that are burnable.

6.4.6 The user shall accumulate medical waste so that waste is (a) collected in segregated, designated medical waste containers and kept separated from all other solid waste streams; (b) placed directly into leak proof, rigid, puncture-resistant containers for sharps and sealed to prevent loss of contents; (c) handled in a manner to protect the integrity of the packaging; (d) at or near the point of generation and secure to prevent entry of unauthorized persons; (e) inspected weekly and documented on MSFC Form 4071; (f) compatible with the container and other co-located hazardous materials/wastes; (g) properly labeled to identify contents and hazards; (h) in good condition; (i) closed/sealed when not in use; (j) reported if any changes in the medical waste-producing process occurs by submitting MSFC Form 4072 to EED; and (k) verified for accuracy of the waste stream profile as requested.

6.4.7 EED will inspect monthly each SAA container.

6.4.8 EED will collect waste monthly from user locations. If users require a more frequent collection of medical waste, please contact EED. Upon pickup of the collection container, a new

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container will be issued unless EED is notified otherwise.

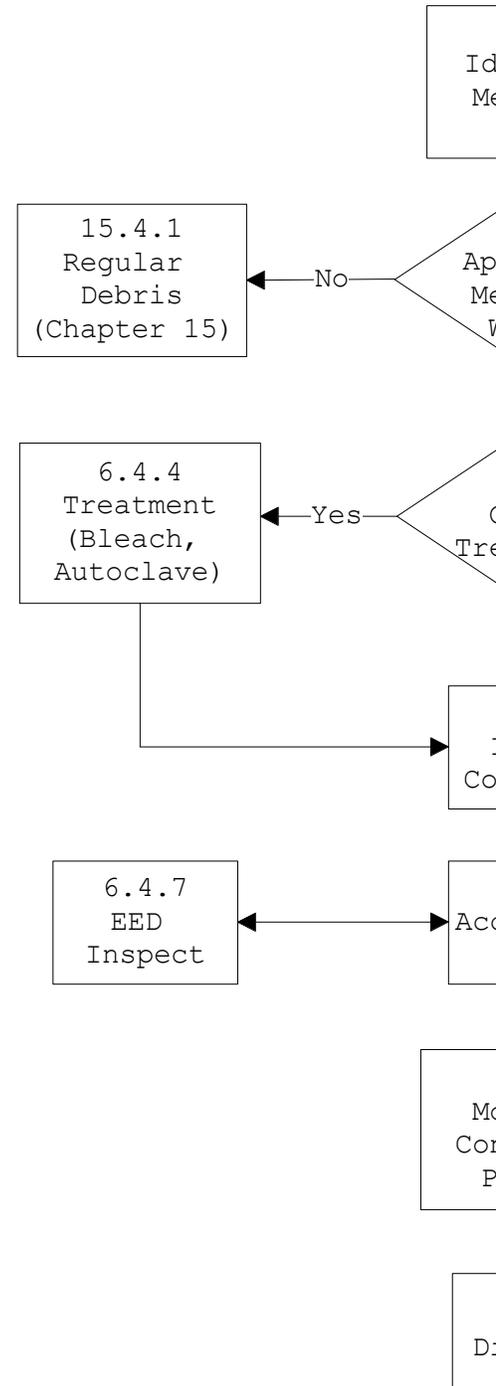
6.4.9 EED will ensure proper disposal of medical waste.

6.5 Guidelines.

None

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6.6 Flow Diagram for Medical Waste Management.



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## CHAPTER 7

### POLLUTION PREVENTION

Pollution prevention (P2) is the most cost-effective approach to environmental management. By reducing the use of toxic chemicals, P2 improves worker health and safety, protects the environment, helps maintain facility compliance with environmental regulations, and saves money. MSFC expects to meet federal requirements to reduce the release and off-site transfer of toxic chemicals without jeopardizing its mission.

7.1 Authority. The President of the United States has issued several EOs requiring Federal facilities to initiate pollution prevention efforts. These EOs are as follows:

7.1.1 EO 12856 - Requires compliance with right-to-know and pollution prevention laws.

7.1.2 EO 12843 - Requires facilities to revise procurement policies to minimize the use of ozone-depleting chemicals.

7.1.3 EO 12844 - Requires facilities to consider and procure alternative fueled vehicles.

7.1.4 EO 12845 - Requires agencies to purchase energy efficient computer equipment.

7.1.5 EO 12873 - Requires agencies to set goals to reduce solid waste and increase recycling.

7.1.6 EO 12902 - Requires agencies to reduce energy use and increase energy efficiency.

7.1.7 EO 13101 - Incorporates waste prevention and recycling; promotes purchase and use of environmentally preferable products and services.

7.1.8 EO 12898 - Requires facilities to assess environmental impacts to environmental justice areas (minority and low-income populations).

7.2 EED Responsibility. The EED shall develop and annually update an MSFC P2 Plan and shall pursue the goals set forth in the P2 Plan.

7.3 Basic Organization Responsibility.

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7.3.1 Use less hazardous or less toxic materials when and where feasible.

7.3.2 Actively seek and use less-hazardous chemicals in place of hazardous chemicals.

7.3.3 Provide a representative to the MSFC Pollution Prevention Committee, if requested by the EED.

7.3.4 Perform life cycle costing when evaluating new processes and/or modifications to ensure cost effective considerations.

#### 7.4 Procedures.

7.4.1 EED develops and maintains a P2 Plan for MSFC; EED shall provide P2 guidance to the user, as requested.

7.4.2 User evaluates current processes and materials.

7.4.3 If the process is toxic or hazardous, user evaluates new processes and/or materials.

7.4.4 If the new process/material is cost effective and environmentally friendly, user pursues implementation of new process/material.

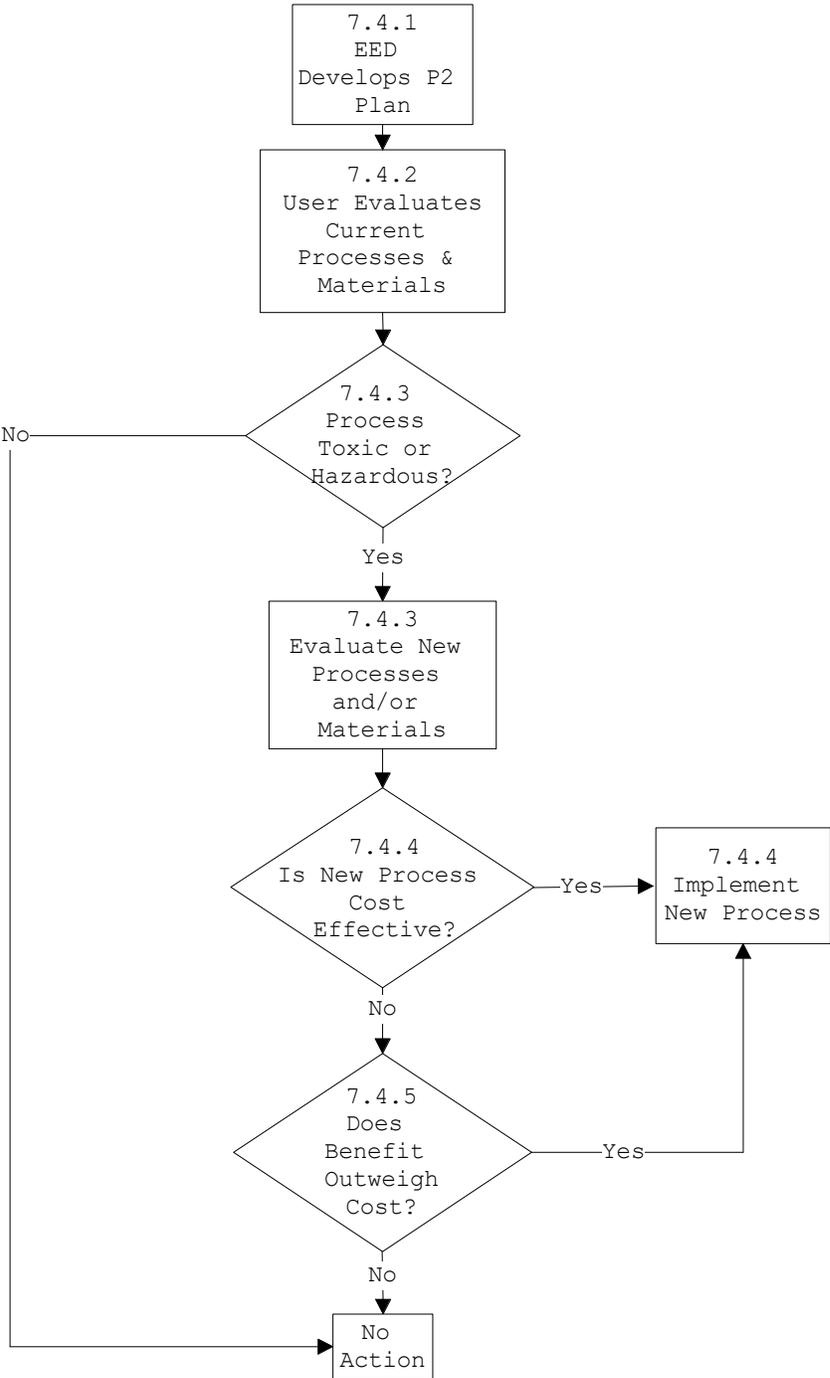
7.4.5 If the new process/material is not cost effective but is environmentally friendly, user shall consider whether the benefits outweigh the cost.

#### 7.5 Guidelines.

None

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7.6 Flow Diagram for Pollution Prevention.



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## CHAPTER 8

### AIR COMPLIANCE

MSFC has applied for a Title V Air Operating Permit as required by the Clean Air Act Amendments of 1990. This permit is all-encompassing for emission sources such as paint booths, boilers, fuel tanks, generators, degreasers, etc., which normally require individual permits. It is MSFC policy to comply with all Clean Air Act laws and regulations enforced by the EPA and ADEM. MSFC is also required to develop, maintain, and adhere to a Risk Management Program to ensure air compliance and employee health and safety.

#### 8.1 Authority.

Clean Air Act (CAA) laws as covered in 40 CFR and ADEM regulations.

#### 8.2 EED Responsibility.

8.2.1 Provide guidance as necessary to those organizations responsible for processes that produce air emissions, in order to stay within the MSFC air permit guidelines or regulated emissions standards.

8.2.2 Develop and maintain an RMP for MSFC, in accordance with Section 112(r) of the Clean Air Act Amendments of 1990, 40 CFR Part 68. Processes covered under the RMP include liquid hydrogen, liquefied natural gas, and propane storage.

8.2.3 Ensure that MSFC complies with all EPA and ADEM air permitting and RMP requirements.

8.2.4 Ensure that the MSFC RMP Team includes the EED Manager, Safety & Mission Assurance Office representative, MSFC contractor for Occupational Medicine & Environmental Health, Facilities Engineering Department Manager, Media Relations Department representative, and the Director of Center Operations.

8.2.5 Ensure that MSFC develops and implements an Emergency Response Program, according to 40 CFR 68.90 and 68.95, for the purpose of protecting public health and the environment.

#### 8.3 Basic Organization Responsibility.

8.3.1 Conform equipment and/or processes as necessary to comply with air permit constraints and regulations issued by ADEM and

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EPA. Each organization with equipment and/or processes affecting the MSFC air permit shall submit an environmental plan to the EED, detailing how they shall comply with the air permit.

8.3.2 Replace regulated substances with nonregulated substances, where possible. This includes paints, solvents/cleaning solutions, and any other HAP or ODS.

8.3.3 Organizations utilizing LH2, LNG, and propane storage must adhere to written operating procedures for these processes.

8.3.4 The Industrial Safety Office shall be responsible for training and certification of operating and maintenance personnel for the RMP processes.

8.3.5 Investigate each incident that resulted in, or could reasonably have resulted in, a catastrophic release of LH2, LNG, or propane in the workplace. An incident investigation shall be initiated promptly, but no later than 48 hours following the incident.

#### 8.4 Procedures for Air Compliance.

8.4.1 Basic organizations shall notify the EED of any new processes using chemicals having the potential to be released to the environment, including installation of parts washers, degreasers, fuel tanks, boilers, generators, paint booths, bulk gasoline plant, engine testing, pipe cleaning, generator tanks, machine shops, hand wipe cleaning operations, surface coatings, etc. Permits may be required before construction begins.

8.4.2 The EED shall determine if an air permit is required for the operation.

8.4.3 The EED shall prepare and submit permit applications and notify the user of the permit requirements when a permit is obtained.

8.4.4 The user shall keep and maintain data records as required in the permit or CAA regulation, and shall submit data/records to the EED for reporting. After submitting the data/records to the EED, the user is no longer responsible for the data/records, in terms of environmental reporting.

8.4.5 The EED shall prepare and submit external reports and determine if the process is in compliance with the CAA.

8.4.6 The EED and user shall initiate any necessary corrective

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action as required by the EPA and/or ADEM in the event of noncompliance.

#### 8.5 Procedures for Risk Management Plan.

8.5.1 Each organization using liquid hydrogen, liquefied natural gas, or propane is responsible for notifying the EED of any changes in quantities stored on-site. As processes are added which use one of these chemicals, the EED shall be notified immediately.

8.5.2 The EED will determine if RMP threshold quantities of the chemicals are met, and will revise the RMP accordingly. The EED will routinely update the RMP every 5 years.

8.5.3 The user will prepare a maintenance program for the Program 2 RMP processes that will maintain the ongoing mechanical integrity of the process and equipment. The maintenance program must include employee training. The user will perform inspections and tests on process equipment following recognized and accepted procedures. The user is responsible for implementation of the RMP.

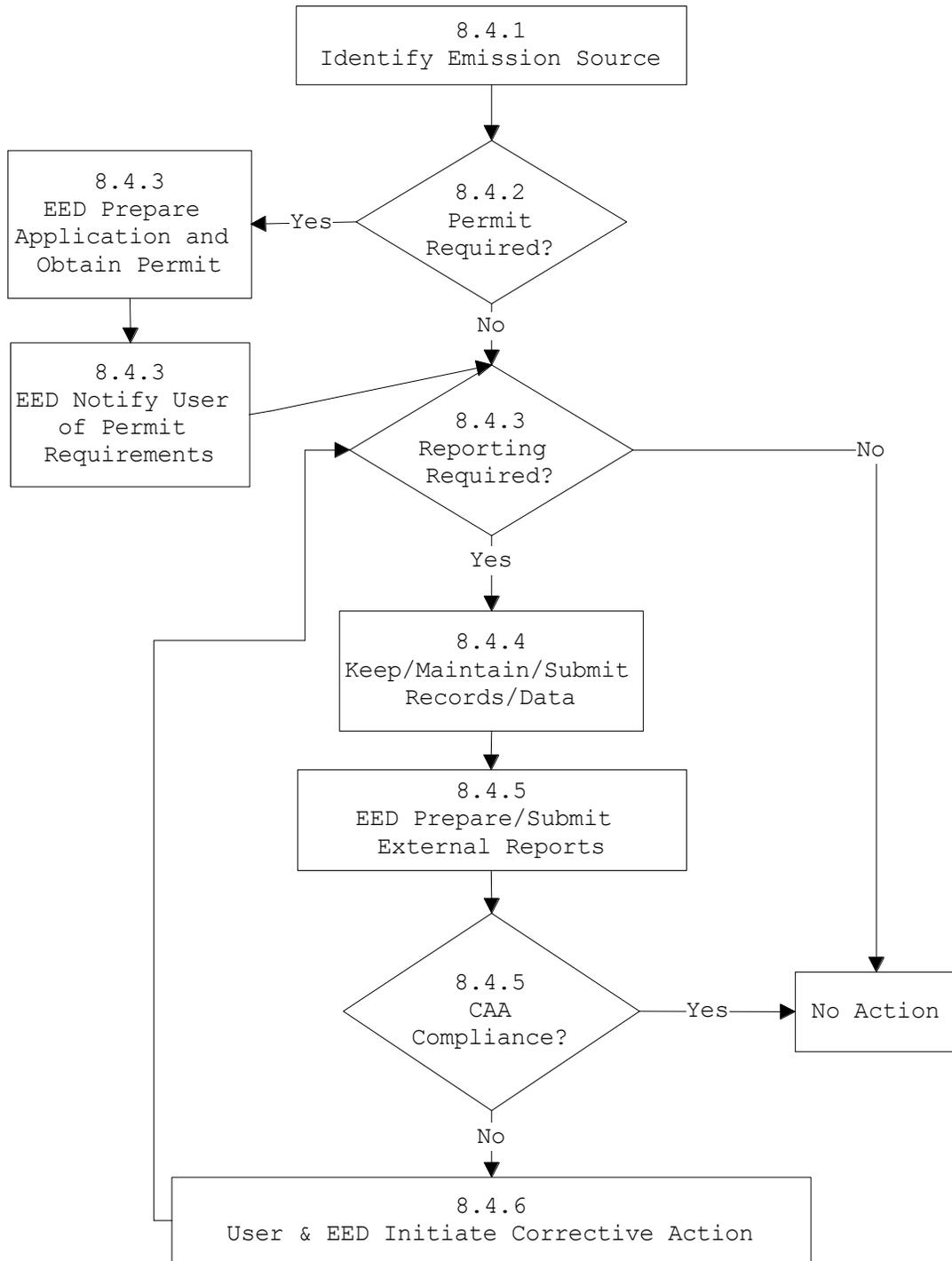
8.5.4 The EED will conduct an MSFC internal compliance audit at least every 3 years to verify that the procedures and practices developed under the RMP are adequate and are being followed. Deficiencies will be noted and corrective actions taken.

#### 8.6 Guidelines.

Use good housekeeping practices to minimize toxic releases to the environment.

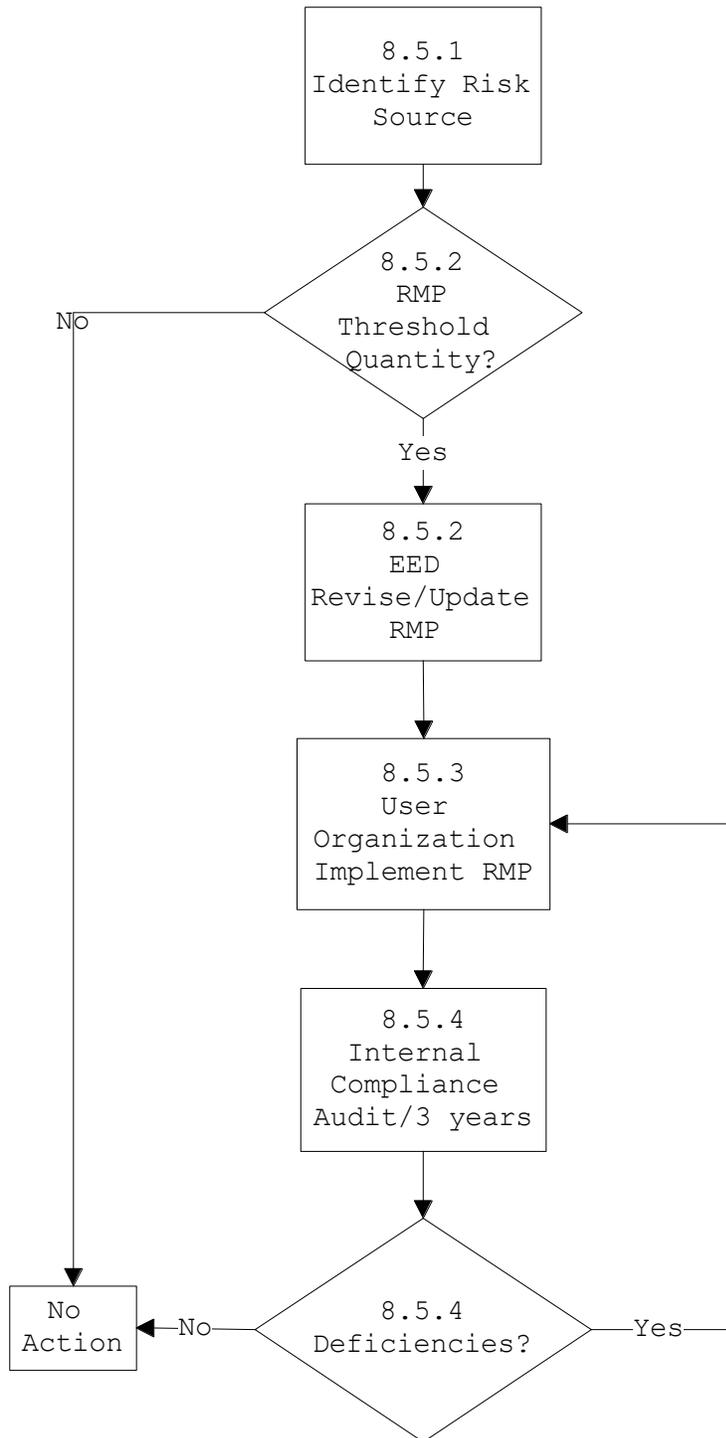
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8.7 Flow Diagram for Air Compliance.



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8.8 Flow Diagram for Risk Management Plan.



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## CHAPTER 9

### STORM WATER COMPLIANCE

The NPDES and the SID permits strictly regulate MSFC's Wastewater Management which includes storm water runoff. These permits are issued by ADEM and are renewed at 5-year intervals. The purpose of storm water compliance is to protect the quality of surface water and ground water.

9.1 Authority. Environmental laws and regulations governing storm water compliance are as follows:

9.1.1 Clean Water Act

9.1.2 40 CFR Part 122.26

9.1.3 ADEM National Pollutant Discharge Elimination System Permit for MSFC

9.1.4 NASA/MSFC Consolidated Environmental Response Plan (ISO Document AD10-001)

9.1.5 NASA/MSFC Storm Water Permit

9.2 EED Responsibility.

9.2.1 Provide contractor storm water inspector(s) to regularly inspect designated storm water inspection sites at designated frequencies. Only the contractor storm water inspector is authorized to release storm water from containment areas.

9.2.2 Provide training for any personnel required to implement the BMP contained in the CERP and retain documentation of such training, which shall be made available for inspection by an ADEM or EPA official. These training records shall be maintained by EED for 3 years, then disposed.

9.3 Basic Organization Responsibility. Any organization identified by the EED as being responsible for a storm water inspection site shall be responsible for the following:

9.3.1 Cooperate with the EED and contractor storm water inspector(s) and comply with the BMPs outlined below.

9.3.2 Train organization personnel regarding the proper operation of equipment and processes associated with the following sources:

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- 9.3.2.1 USTs and ASTs
- 9.3.2.2 Hazardous waste/material storage areas
- 9.3.2.3 Investigation-Derived Wastes (IDW)
- 9.3.2.4 Storage yards
- 9.3.2.5 Construction activities
- 9.3.2.6 Erosion
- 9.3.2.7 Sandblasting
- 9.3.2.8 Materials handling/fueling areas
- 9.3.2.9 Equipment parking and maintenance areas/mobile equipment
- 9.3.2.10 Vehicle washing and maintenance activities
- 9.3.2.11 Painting and depainting operations
- 9.3.2.12 Buried pipelines

9.4 Procedures.

9.4.1 The EED and/or the user organization shall identify potential sources of storm water pollution.

9.4.2 The user organization shall notify the EED of any new potential sources of storm water pollution within their designated area of responsibility, and the EED will notify the user of any new sources it has identified within the user's designated area of responsibility.

9.4.3 User organizations shall be responsible for performing inspections of all transient operations (construction areas, temporary storage of chemicals, short duration accumulation of hazardous waste, sandblasting areas, material handling/fueling areas) within the designated area of responsibility (inspection criteria and procedures are listed in the "guidelines" section).

9.4.4 The EED storm water contractor shall perform all routine inspections of potential storm water pollution sources and maintain inspection records (records shall be annually submitted to the EED storm water coordinator, who retains them for 3 years, then disposes). However, the user organization is responsible

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for site maintenance and cleanliness. EED personnel shall perform quarterly storm water inspections to update storm water source list.

9.4.5 Any deficiencies that are identified during the EED or user inspections must be addressed and corrected in a timely manner.

9.4.6 The user and the EED shall continually update the list of storm water inspection sites. Also, the user is encouraged to make suggestions and recommendations to the EED that will improve their areas of responsibility, and the user shall notify the EED whenever changes occur at the facility that could affect storm water quality.

#### 9.5 Guidelines.

9.5.1 USTs and ASTs (inspected biweekly and after significant rainfall)

9.5.1.1 Verify that there are no leaking fixtures.

9.5.1.2 Verify that there are no punctures, cracks, or corrosion.

9.5.1.3 Verify that a spill kit is available.

9.5.1.4 Make sure that bypass valves are properly sealed or closed and locked when not in use.

9.5.1.5 Verify that there is no visible contamination (sheen) on water collected in the containment prior to discharging any storm water from the containment basin and document all storm water releases from the containment basin on the inspection log sheet.

9.5.1.6 Verify that spill prevention controls and containment is in good condition.

9.5.1.7 Check for signs of spillage from material handling operations.

9.5.1.8 Verify that warning signs are present and legible as appropriate.

9.5.1.9 Verify that erosion prevention is satisfactory at the drain valve.

9.5.1.10 Verify that overflow prevention controls are in place

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and effective.

9.5.2 Hazardous waste/material storage areas (inspected monthly) and IDW (inspected weekly)

9.5.2.1 Verify that containers are protected from the weather.

9.5.2.2 Verify that containers have secondary containment.

9.5.2.3 Verify that containment system is in good condition.

9.5.2.4 Verify that containment valves are closed.

9.5.2.5 Check secondary containment for liquid. If liquid is in the containment, collect for proper disposal.

9.5.2.6 Verify that containers are properly labeled.

9.5.2.7 Verify that the storage area is neat and orderly.

9.5.2.8 Check for signs of spillage from material handling operations.

9.5.2.9 Verify that the containers are sealed and in good condition.

9.5.2.10 Replace any damaged pallets.

9.5.2.11 Remove any damaged containers.

9.5.2.12 Verify that a spill kit is available.

9.5.2.13 Verify that erosion controls are in place.

9.5.2.14 Verify that containers are not stacked more than two containers high.

9.5.2.15 Remove any liquids or debris from drip pans and dispose of as appropriate.

9.5.2.16 Verify that chemical storage cabinets are closed and that there are no signs of leakage.

9.5.3 Storage yards (inspected monthly)

9.5.3.1 Verify that stored equipment is not leaking.

9.5.3.2 Verify that materials and equipment are stored neatly.

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9.5.3.3 Verify that only appropriate material is stored in the area.

9.5.3.4 Verify that any equipment to be stored for extended periods without use or abandoned equipment is drained of any fluids such as oil or fuel or any other type of hazardous chemical.

9.5.4 Construction sites (inspected daily)

9.5.4.1 Verify that erosion controls are in place.

9.5.4.2 Verify that hazardous waste/materials are stored and handled appropriately.

9.5.4.3 Verify that the site is free of excessive debris.

9.5.4.4 Check all stored equipment and vehicles for signs of leakage.

9.5.4.5 Dispose of all empty containers appropriately.

9.5.5 Erosion (inspected monthly)

9.5.5.1 Check for signs of excessive erosion.

9.5.5.2 Verify that erosion controls are in place.

9.5.5.3 Check for sediment buildup around storm water structures (inlets and ditches).

9.5.6 Sandblasting areas (inspected monthly)

9.5.6.1 Verify containment measures are in place to retain sandblast material and paint particles.

9.5.6.2 Verify that control measures are maintained in good condition.

9.5.7 Materials handling/fueling areas (inspected when operations occur)

9.5.7.1 Check for signs of spillage from material loading and unloading operations.

9.5.7.2 Verify that measures are in place and effective to prevent contact with storm water during material handling

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operations.

9.5.7.3 Verify that spill kits are available.

9.5.7.4 Verify that spill and overflow protection equipment is working properly.

9.5.8 Equipment parking and maintenance areas/mobile equipment (inspected monthly)

9.5.8.1 Conduct maintenance activities outdoors, where possible.

9.5.8.2 Verify that control measures have been taken to minimize storm water contamination during outdoor maintenance operations.

9.5.8.3 Check for signs of spills or leaks.

9.5.8.4 Clean up all spills.

9.5.8.5 Verify that vehicles or equipment stored outdoors are not leaking. If so, provide proper containment until the leak is repaired.

9.5.8.6 Verify that all hazardous fluids are properly stored and managed.

9.5.8.7 Verify that spill kits are available.

9.5.8.8 Position all stored vehicles, equipment, and hazardous chemicals away from storm inlets.

9.5.9 Vehicle or equipment washing activities (inspected monthly)

9.5.9.1 Confine vehicle washing to appropriate areas.

9.5.9.2 Route wash water to the sanitary sewer.

9.5.9.3 Verify that catch basins in the wash area are maintained and not clogged with sediment.

9.5.10 Painting and depainting operations (inspected daily)

9.5.10.1 New and used materials should be protected from the weather.

9.5.10.2 Take measures to prevent overspray.

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9.5.10.3 Take measures to contain particles generated from sanding operations.

9.5.11 Buried pipelines (inspected when uncovered).

9.5.11.1 Inspect for signs of corrosion or deterioration.

9.5.11.2 Verify that pipelines that are not in service or in standby service are capped or blank flanged.

9.5.11.3 Verify that the pipeline status is recorded on the Facilities Master Plans.

9.5.12 Garbage dumpsters

9.5.12.1 Verify that the dumpster is covered nightly, on weekends, and whenever practical.

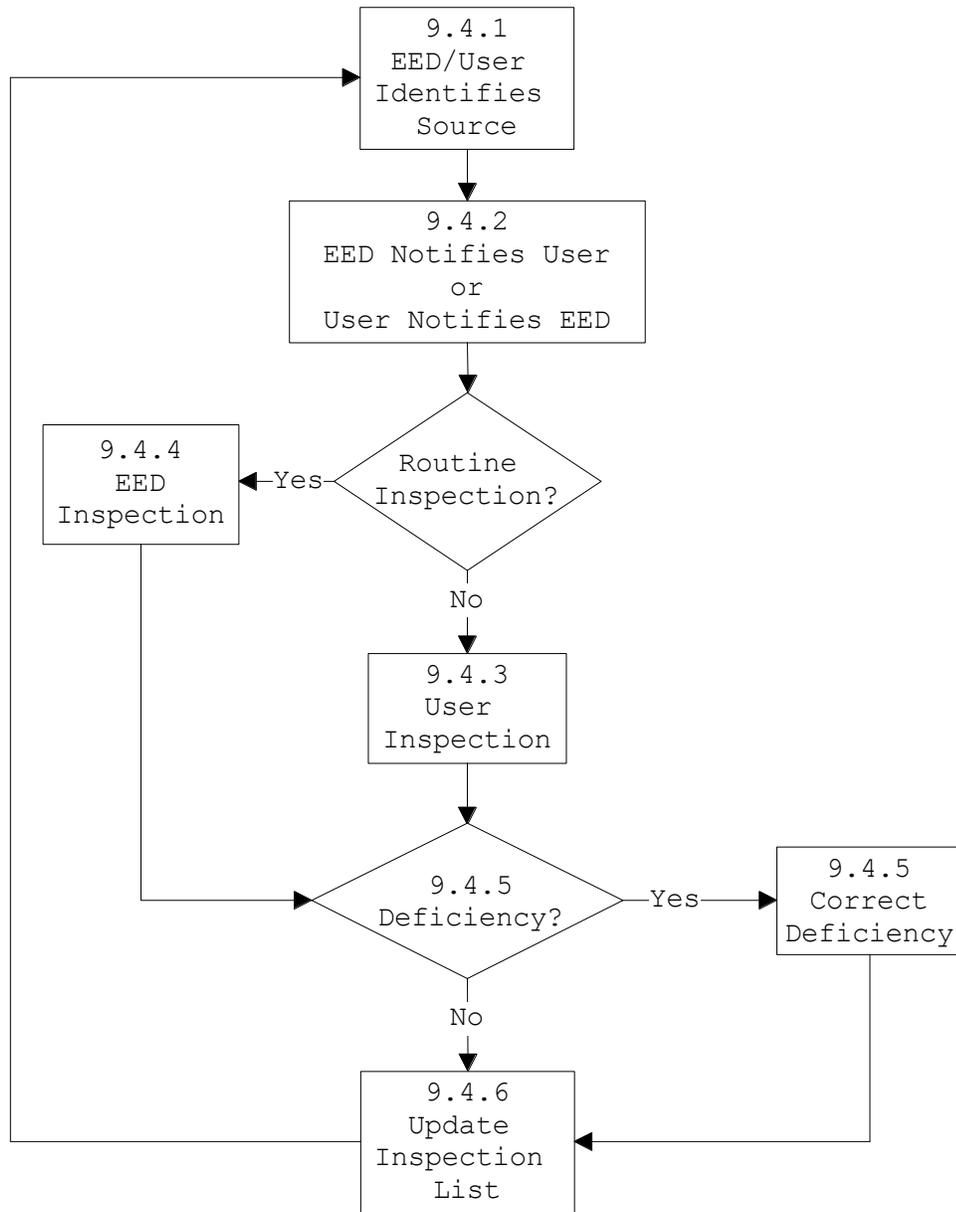
9.5.12.2 Verify that drain plugs are securely in place.

9.5.12.3 Verify that the dumpster is in good condition.

9.5.12.4 Check for signs of leakage.

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9.6 Flow Diagram for Storm Water Compliance.



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## CHAPTER 10

### TOXIC SUBSTANCE MANAGEMENT

It is necessary to comply with all applicable regulations regarding asbestos, lead, and PCB management to prevent illness to employees and damage to the environment from the use, removal, and disposal of toxic substances. Lead coatings on scrap metal are acceptable for salvage at recycling centers.

10.1 Authority. Environmental laws and regulations governing asbestos and lead management are as follows:

10.1.1 29 CFR 1910.25 Appendix C, Toxic and Hazardous Substances

10.1.2 29 CFR 1910.1025, Lead

10.1.3 29 CFR 1926.62, Lead Exposure in Construction

10.1.4 29 CFR 1926.103, Respiratory Protection

10.1.5 29 CFR 1910.1001, OSHA Requirements on Asbestos

10.1.6 29 CFR 1926.1101, Occupational Exposure to Asbestos in Construction Industry

10.1.7 40 CFR Part 61, Subpart M, National Emission Standards for Asbestos, Asbestos Stripping Work Practices and Disposal of Asbestos, U.S. EPA

10.1.8 29 CFR 1910.134, Respiratory Protection

10.1.9 29 CFR 1910.1200, Hazard Communication

10.1.10 29 CFR 1960, Basic Program Elements for Federal Employees Occupational Safety and Health Programs and Related Matters

10.1.11 Executive Order 12196, Occupational Safety and Health Programs for Federal Employees

10.1.12 40 CFR 61.140-61-157, U.S. Environmental Protection Agency's National Emission Standards for Asbestos, Asbestos Stripping Work Practices and Disposal of Asbestos Waste

10.1.13 Industrial Lead Paint Removal Handbook, 2<sup>nd</sup> Edition

10.1.14 NASA Agencywide Guidelines on Lead (and Other Toxic

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Metals) Paint Management Companion Document to Project Design:  
Industrial Lead Paint Removal Handbook Volume II, April 17, 1997

10.1.15 U.S. EPA Toxic Substance Control Act of 1976 (PL-94-469,  
TSCA)

10.2 EED Responsibility. The EED shall support the  
Environmental Health Office as necessary regarding asbestos,  
lead, and PCB and their effect on the environment.

10.3 Basic Organization Responsibility. Each organization shall  
report asbestos, lead, and PCB concerns related to the  
environment immediately to the Environmental Health Office (544-  
8371).

10.4 Procedures.

10.4.1 The user shall report asbestos, lead, or PCB concerns  
related to the environment immediately to the Environmental  
Health Office (544-8371).

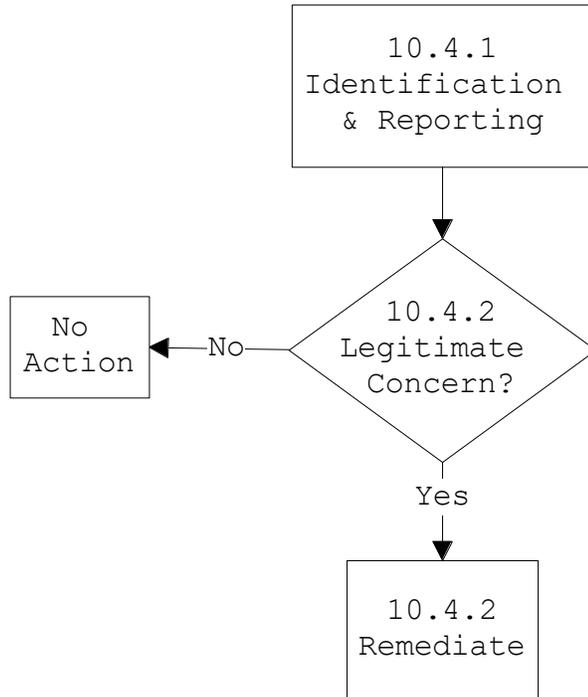
10.4.2 The EED, the Environmental Health Office, and the  
Facilities Engineering Department will investigate the concern to  
determine the most appropriate remedial action.

10.5 Guidelines.

None

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10.6 Flow Diagram for Toxic Substance Management.



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## CHAPTER 11

### COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY ACT (CERCLA)

The guiding principal of MSFC's CERCLA program is the protection of human health and the environment. The program consists of actions that address: (a) potential releases that may contribute to off-site migration, primarily through ground water; (b) on-site releases that may have a potential for exposure to on-site workers; and (c) the most environmentally sensitive areas at MSFC. The goals are as follows:

- Investigate and eliminate risks to human health and the environment
- Satisfy the public
- Use public funds responsibly
- Meet regulatory requirements
- Minimize adverse effects on NASA's mission

The implementation of these goals is managed through the program's site management plan.

11.1 Authority. Laws and regulations governing the CERCLA program are as follows:

11.1.1 Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C 9601 et seq.)

11.1.2 Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.)

11.2 EED Responsibility. The EED shall ensure MSFC compliance with CERCLA and the FFA. The EED shall be responsible for identifying CERCLA sites, determining appropriate methods of remediation, and initiating the remediation process.

11.3 Basic Organization Responsibility. MSFC organizations shall notify the EED of any potentially contaminated site(s). All personnel involved in activities at CERCLA sites shall be properly trained. Construction activities at any of the CERCLA sites shall be coordinated through the EED.

11.4 Procedure for New Facilities Construction.

11.4.1 Any construction of facilities shall be coordinated with EED.

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11.4.2 EED personnel shall review construction design drawings to ensure proposed construction is appropriate for the site as determined by the Memorandum of Agreement for LUC for 22 MSFC CERCLA sites and allowable access as determined by CERCLA.

11.4.3 If during construction, unknown odors, discoloration, or any suspected areas of contamination are encountered, the EED shall be informed. EDD personnel can be contacted at the following phone numbers: 544-4246, 544-HELP, or for large or dangerous situations call 911.

11.5 Procedure for Access to CERCLA Sites.

11.5.1 Personnel requiring access to CERCLA sites Operable Unit 1, Site 04, 09, and 63; Operable Unit 5, Site 88 and 89; Operable Unit 2; and groundwater shall have 40 hours of Hazardous Waste Operations & Emergency Response (HAZWOPER) training before accessing the listed areas.

11.5.2 Personnel shall also maintain training with annual 8-hour refresher courses.

11.5.3 EED personnel shall be notified before personnel enter a listed CERCLA site. Maps of surface areas and groundwater areas requiring HAZWOPER training before access are at

[www.inside.msfc.nasa.gov/index.html/](http://www.inside.msfc.nasa.gov/index.html/)

Any questions shall be directed to EED at 544-4246.

11.6 Procedure for Potentially Contaminated Sites.

11.6.1 Any unusual or unidentifiable odors, stains, soil discoloration, or any other suspected contamination shall be reported to the EED at 544-4246 or 544-HELP.

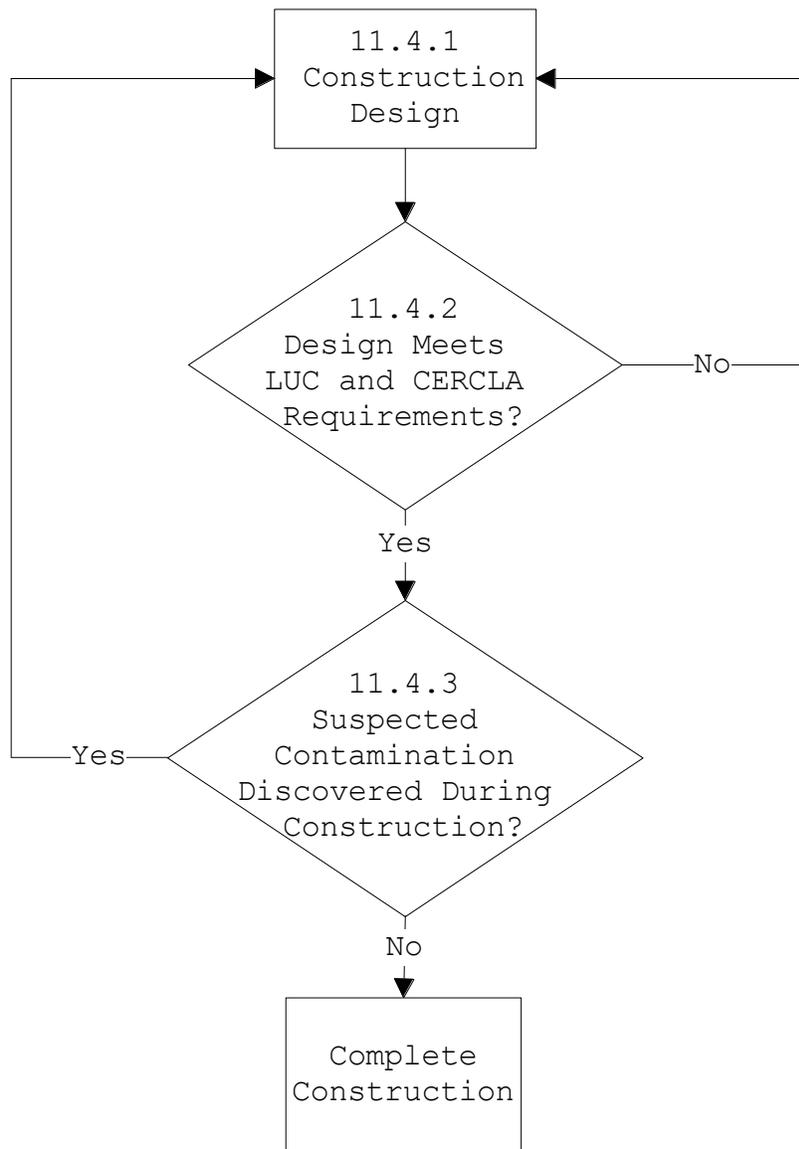
11.6.2 Call 911 for large or dangerous situations.

11.7 Guidelines.

None

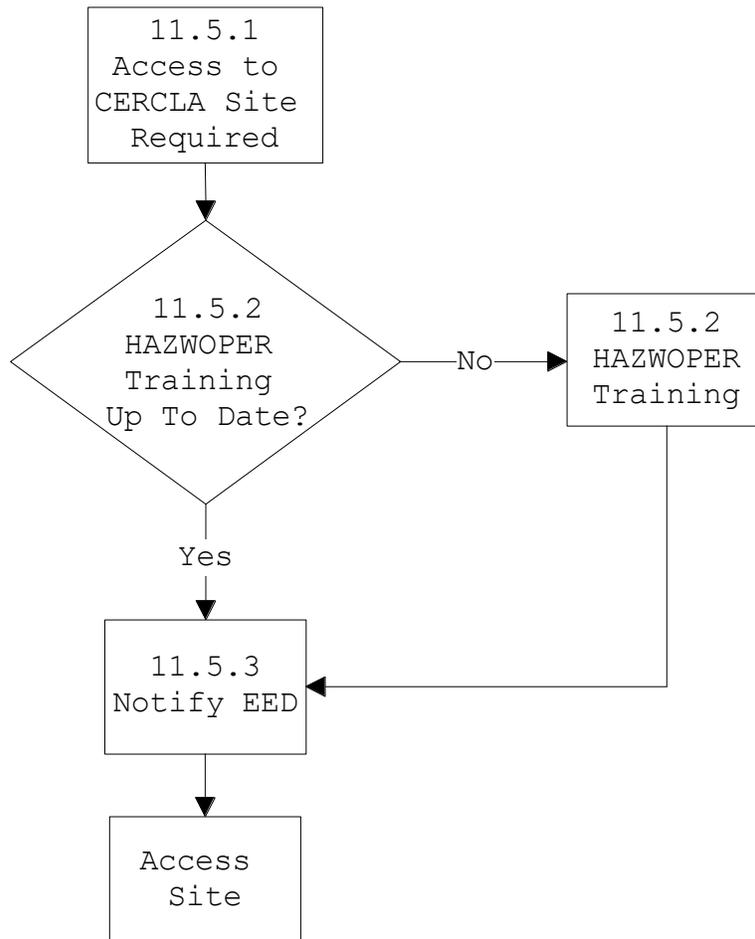
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11.8 Flow Diagram for New Facility Construction.



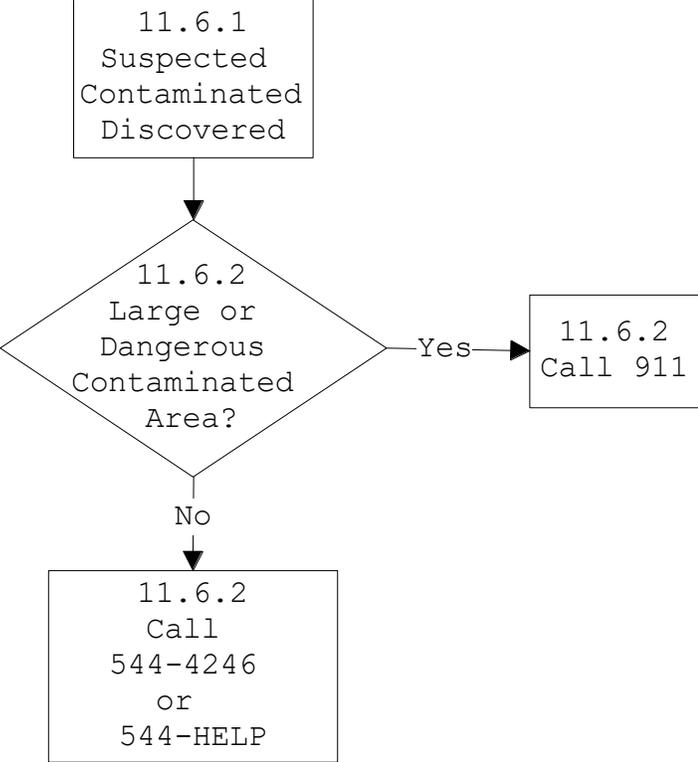
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11.9 Flow Diagram for Access to CERCLA Sites.



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11.10 Flow Diagram for Potentially Contaminated Sites.



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## CHAPTER 12

### NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

MSFC strives to ensure that all activities are considered for environmental impacts prior to commencement of any Center decision. Under NEPA, all Federal agencies have a continuing responsibility to minimize adverse environmental impacts and to preserve and enhance the environment as a result of implementing Federal plans and programs.

NEPA requires NASA to consider environmental values in the planning of Agency actions and activities that may have an impact upon the human environment before an action is taken. NEPA directs that NASA consider alternatives to its proposed activities and requires that environmental factors be considered alongside the technical and economic considerations that are normally incorporated into NASA decision making. It also requires that the information be available to NASA decision makers in a timely manner to enable consideration of the environmental consequences of the proposed action or activity being considered, and that those environmental considerations be available to the public as well as to other Federal, State, and local agencies.

#### 12.1 Authority.

##### 12.1.1 National Environmental Policy Act (NEPA)

12.1.2 NHB 8800.11, "Implementing the Provisions of the National Environmental Policy Act," April 24, 1980

12.1.3 NPG 8840, "NASA Procedures & Guidelines for Implementing the National Environmental Policy Act and Executive Order 12114," (pending)

12.1.4 14 CFR 1216.1

12.1.5 14 CFR 1216.3

12.1.6 MSFC Environmental Resources Document (ERD), June 1996

12.2 EED Responsibility. The EED shall ensure MSFC compliance with NEPA and CEQ. The EED shall be responsible for oversight of all documentation in support of all MSFC actions, projects, and programs. EED shall ensure that all actions (program, project, construction, etc.) are considered for environmental impacts prior to decisions.

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12.3 Basic Organization Responsibility. All MSFC organizations are responsible for compliance with NEPA and CEQ. This includes, but is not limited to, generating and maintaining any and all necessary NEPA and CEQ documentation and coordinating with the EED. MSFC actions subject to NASA NEPA regulations are, in general, research and development, research operations and support, and construction of facilities.

12.4 Procedure.

12.4.1 At onset of a program or project, program management shall consult with EED for guidance in satisfying NEPA requirements.

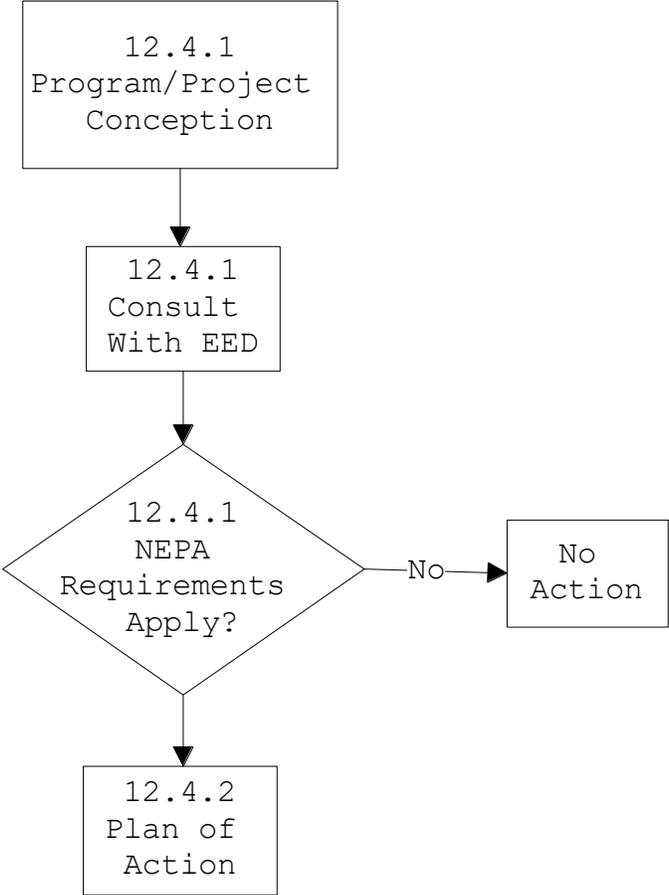
12.4.2 Users and EED shall implement a plan of action for satisfying NEPA requirements specified in 14 CFR 1216.1 and 1216.3.

12.5 Guidelines.

None

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12.6 Flow Diagram for NEPA.



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## CHAPTER 13

### THREATENED & ENDANGERED SPECIES

MSFC seeks to protect threatened and endangered species, both flora and fauna. MSFC will consult with the USFWS and Alabama Department of Conservation and Natural Resources regarding the potential to affect threatened and endangered species when proposing a project.

#### 13.1 Authority.

13.1.1 Threatened and Endangered Species Act

13.1.2 National Environmental Policy Act

#### 13.2 EED Responsibility.

13.2.1 Ensure that threatened and endangered species are protected.

13.2.2 Consult with the USFWS as necessary.

13.2.3 Obtain biological assessments and opinions as required to support construction/maintenance activities on Center. This process typically takes 90 days.

13.2.4 Maintain a "Field Manual of Threatened and Endangered Species Potentially Occurring at MSFC" and make available via the web. The following hyperlink provides the field manual:

[http://eemo.msfc.nasa.gov/Environmental/compliance/endangered\\_sp/field\\_manual.pdf](http://eemo.msfc.nasa.gov/Environmental/compliance/endangered_sp/field_manual.pdf)

#### 13.3 Basic Organization Responsibility.

13.3.1 Ensure personnel responsible for design, construction, and maintenance activities are familiar with the field manual.

13.3.2 Notify EED immediately if threatened or endangered species are encountered during construction and/or maintenance activities and immediately suspend activities.

13.3.3 Site construction activities shall avoid, if practicable, areas known to contain threatened and endangered species.

13.3.4 Notify EED of construction sites that will impact threatened and endangered species.

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13.4 Procedures.

13.4.1 Determine if construction or maintenance activity is required in a known or suspected threatened and endangered species area; consult with EED if unsure.

13.4.2 If so, then the organization conducting the action shall notify EED; otherwise, proceed with action.

13.4.3 EED shall determine if threatened or endangered species are present and if action may impact species.

13.4.4 If no impact, EED concurs with action to proceed.

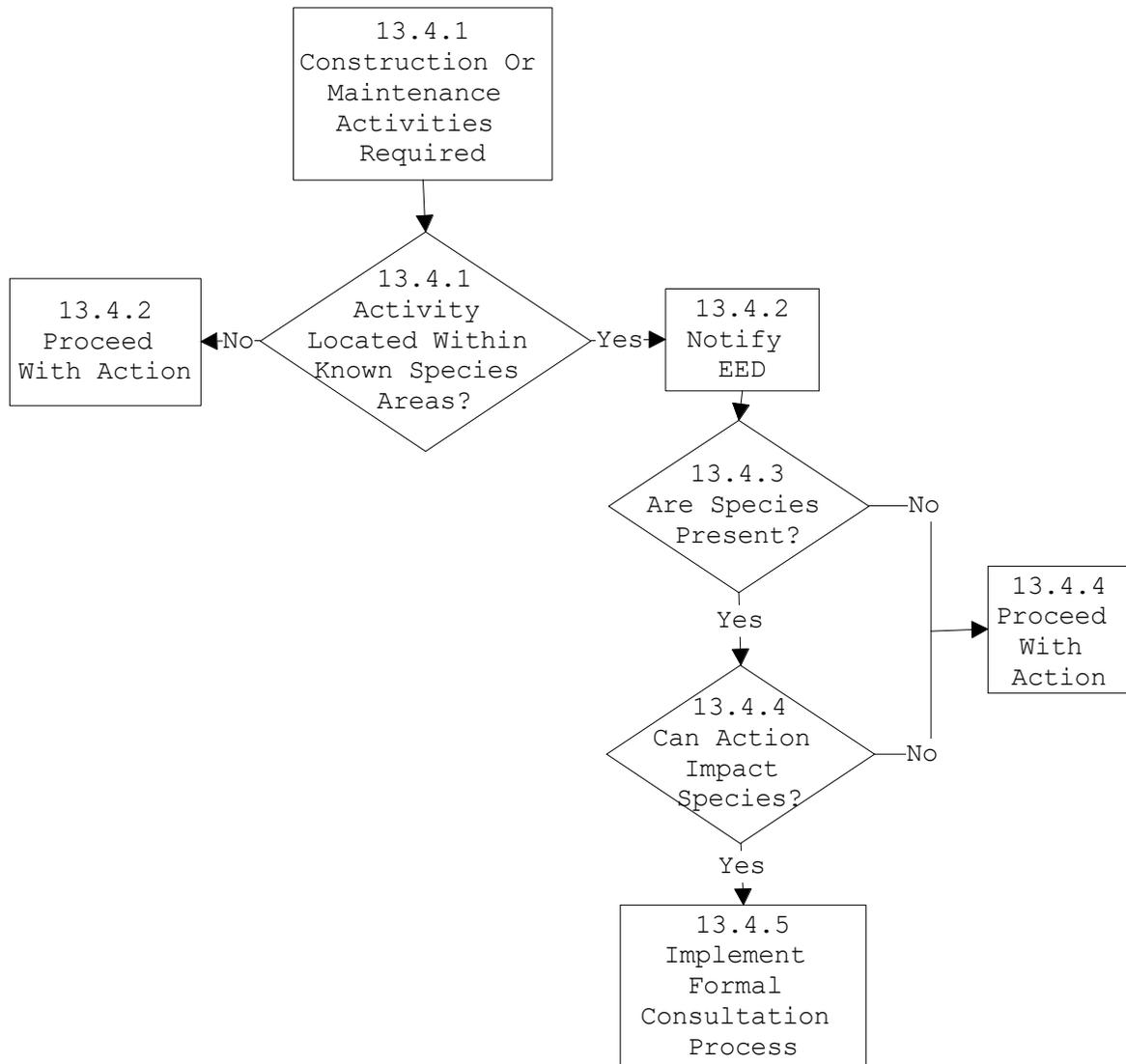
13.4.5 If possible impact, EED implements formal consultation process to obtain regulating Agency approval.

13.5 Guidelines.

None

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13.6 Flow Diagram for Threatened & Endangered Species.



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## CHAPTER 14

### WETLAND PERMITTING PROCEDURES

There are two types of permits administered by the USACE Section 404 program: (1) Individual and (2) General (Nationwide or Predischarge Notification). The type of permit and the length of internal review depend on the nature of the projects and the type and extent of wetlands affected.

For projects involving potentially significant impacts, authorization must usually be sought through an application for an individual permit. The individual permit requires detailed information about the project and its potential effects on the environment. The information in the permit application is reviewed by several regulatory agencies including the USFWS and the NMFS. In addition to the regulatory review, the Individual Permit application undergoes a public notice review that is scheduled for 30 days but may be longer if comments are significant.

The Nationwide Permit is the type of general permit that is used for common, minor construction projects that will take place in a localized area but are similar in scope throughout the Nation, such as the construction of an underground pipeline that crosses wetlands, construction of road crossings through wetlands, and discharges into wetlands that are located above headwaters.

#### 14.1 Authority.

14.1.1 33 CFR 330, Nationwide Permit Program Regulations and Issue, Reissue, and Modify Nationwide Permits: Final Rule

14.1.2 Clean Water Act

#### 14.2 EED Responsibility.

14.2.1 Ensure all construction projects and/or maintenance activities that impact wetlands are permitted.

14.2.2 Determine if a general permit or individual permit must be obtained from the USACE.

14.2.3 Review, approve, and submit permit applications for the Center.

14.2.4 Maintain wetland maps and include with MSFC Master Plans.

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14.2.5 Ensure that any requirements in a wetland permit are effectively implemented.

14.3 Basic Organization Responsibility.

14.3.1 MSFC organizations shall ensure that all construction projects and/or maintenance activities are identified to EED in a timely manner so that permits can be obtained to meet established schedules. (Typically, EED will require 120 days advance notice to meet construction/maintenance schedules.)

14.3.2 Implement any required mitigation specified in a wetland permit.

14.4 Procedure.

14.4.1 Determine whether construction or maintenance activities are required within known wetland areas.

14.4.2 If less than one acre of wetlands will be impacted, notify EED; proceed with action after notification from EED that the action is covered under the Nationwide Permit.

14.4.3 If greater than 1 acre and less than 10 acres of wetlands will be impacted, notify EED. EED shall coordinate with regulating Agency before proceeding with action.

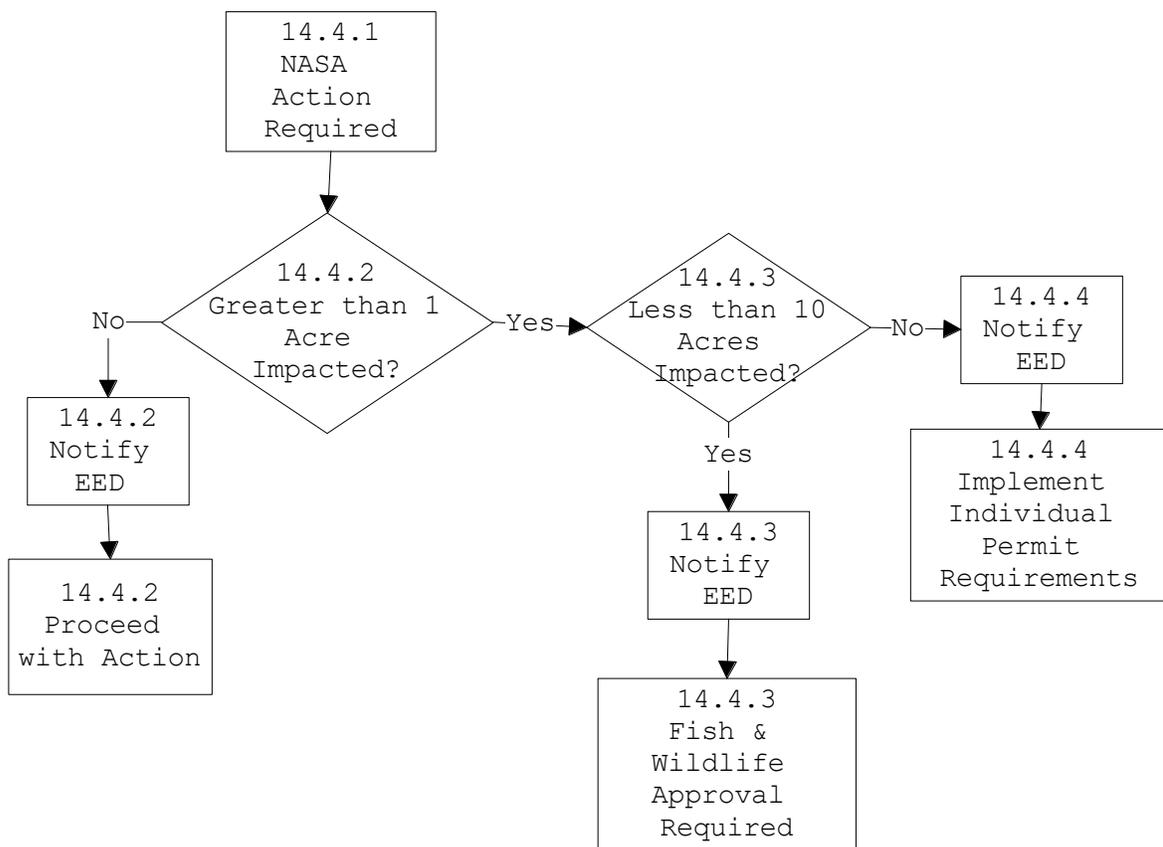
14.4.4 If greater than 10 acres of wetlands will be impacted, notify EED. EED shall proceed with obtaining permit. Organization conducting action shall provide data necessary for permit application.

14.5 Guidelines.

None

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14.6 Flow Diagram for Wetland Permitting.



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## CHAPTER 15

### DEBRIS DISPOSAL

Any debris that needs to be disposed of, except for hazardous and controlled waste, shall be disposed of at either the RSA SWMA, the Huntsville Incinerator, or Huntsville Landfill. Disposal of debris or special waste at the SWMA will be in accordance with the Directorate of Environmental Management Planning Standard Operating Procedure (EMP-SOP Number 420-47-2) as stated in the Procedures section.

Debris that is unacceptable at the SWMA will be collected in trash bins located at MSFC for incineration at the City of Huntsville Incinerator, other than hazardous and controlled waste and recyclable items such as metal, aluminum cans, white paper, etc.

#### 15.1 Authority.

ADEM Administrative Code 335-13, Solid Waste Program

15.2 EED Responsibility. The EED shall ensure that all debris materials are properly disposed.

15.3 Basic Organization Responsibility. Organizations shall ensure that all debris is placed in the proper container(s) for disposal.

#### 15.4 Procedures.

15.4.1 Debris that requires disposal shall be properly disposed.

15.4.2 Is the waste material a recyclable item (white paper, cardboard, toner cartridge, oil, tires, etc.)? If it can be recycled, ensure that the item is recycled by placing it in the appropriate recycle bin or contacting the Center Recycling Coordinator.

15.4.3 Is the waste material a hazardous, controlled, or medical waste or empty container? If so, see Chapters 2, 5, and/or 6.

15.4.4 Determine if debris is regular trash that can be incinerated or debris that requires burial in a landfill.

15.4.5 Place the trash in regular garbage cans/dumpster.

15.4.6 If the waste is large, bulky items that require

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landfilling, the user shall (a) separate all trees and tree debris, stumps, and yard waste from other inert materials; (b) separate all construction debris from dirt and rock (dirt, or spoil material, from construction and maintenance activities is acceptable for disposal); (c) separate all salable/reusable metal from construction debris (scrap metal including aluminum, copper, and metal shavings are not acceptable items for disposal at the SWMA); (d) flatten empty drums of 5 gallons or larger in poor condition prior to disposal; and (e) prepare a Manifest of Material, Form ASMI-RA 2435, for items delivered to the RSA SWMA (this is required for each load received at the SWMA).

### 15.5 Guidelines.

15.5.1 Material containing asbestos will be accepted only if it is in compliance with (OSHA/NESHAPS/ADEM) regulatory requirements.

15.5.2 Garbage will not be accepted, including food and food containers, drink cans and bottles, milk cartons, food wrappers, paper plates, napkins, lunch bags, and scrap. Mixed loads containing garbage will require separation by the generator and the proper disposal method used.

15.5.3 Liquids of any type are unacceptable.

15.5.4 Ammunitions and explosive type materials are unacceptable.

15.5.5 Hazardous material and waste are unacceptable; see Chapter 2.

15.5.6 Containers of one gallon or larger that contain material such as paint solvents or similar material are unacceptable.

15.5.7 Empty drums of five gallons or larger in good condition are unacceptable.

15.5.8 Special waste other than asbestos will not be accepted.

15.5.9 The SWMA operator shall randomly inspect loads and possibly refuse material for compliance with environmental regulations and procedures.

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15.6 Flow Diagram for Debris Disposal.

