



# Dryden Centerwide Procedure

## Code S

# Environmental Management System Chemical Management

## CONTENTS

1.0	Purpose of Document	2
2.0	Scope & Applicability	2
3.0	Procedure Objectives	2
4.0	Relevant Documents	3
5.0	Waiver Authority	4
6.0	Abbreviations, Acronyms, & Definitions	4
7.0	Flowchart	8
8.0	Responsibilities	11
9.0	Metrics & Trend Analysis	20
10.0	Management Records & Records Retention	20
11.0	Attachments	21

Electronically approved by  
Assistant Director for Management Systems

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## 1.0 PURPOSE OF DOCUMENT

This procedure describes how Dryden personnel will manage hazardous material and hazardous waste as part of the DFRC Environmental Management System (EMS).

## 2.0 SCOPE & APPLICABILITY

This procedure applies to DFRC personnel whose job responsibilities involve the purchase, storage, issue, and use of hazardous materials, and the generation, storage, and disposal of hazardous waste. Examples of such hazardous materials (and resulting hazardous wastes) include the following:

- Adhesive strippers
- Antifreeze
- Batteries
- Cleaners
- Diesel fuel
- Fluorescent light tubes
- Gasoline
- Jet fuel
- Laboratory and photographic chemicals
- Oils and lubricants
- Paints and thinners
- Solvents

Modification of older facilities at DFRC can generate unique wastes such as asbestos, lead based paint, and polychlorinated biphenyls (PCBs). These materials are no longer used in construction at DFRC.

DFRC's chemical management system (CMS) is based on centralized chemical issue points in Buildings 1623, 4809, 4810, 4823, and 4852 for storage and issue of hazardous materials and collection of hazardous wastes.

## 3.0 PROCEDURE OBJECTIVES

The objectives of this procedure are to

- Minimize the purchase cost and use of hazardous materials
- Minimize the generation and disposal cost of hazardous waste

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## **4.0 RELEVANT DOCUMENTS**

### **4.1 Authority Documents**

40 CFR 240-299 Resource Conservation and Recovery Act  
NPD 8500.1 NASA Environmental Management  
NPR 8553.1 NASA Environmental Management System  
See Also Attachment B – Regulatory Overview

### **4.2 Reference Documents**

DCP-S-009 Safety and Health Requirements Manual  
NPR 8820.3 Pollution Prevention, March 1999

### **4.3 Informational Documents**

AFFTC Oil Hazardous Substance Spill Prevention and Response Plan,  
March 2000  
California Hazardous Material Spill/Release Notification Guidance, June  
1992  
Draft NASA HDBK-P029, Acquisition Pollution Prevention, November  
2001  
Edwards Air Force Base Pesticide Use Assessment Study, October 1996  
Guidance Manual for Complying with the Hazardous Waste Source  
Reduction & Management Review Act 1989, 1999  
NASA Dryden Flight Research Center Facilities Maintenance/DTI  
Asbestos Operation and Maintenance Plan, March 2004  
NASA Dryden Flight Research Center Pollution Prevention Plan,  
September 1995  
NASA Dryden Flight Research Center TSDF Hazardous Waste  
Contingency Plan, April 1995  
Reporting Unauthorized Waste Discharges South Lahontan, Basin  
December 1998

### **4.4 Forms**

DFRC 8-0231 Hazardous Material Purchase/License Request  
DFRC 8-0751 Hazardous Waste and Hazardous Materials Turn-in  
Request

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## 5.0 WAIVER AUTHORITY

None.

## 6.0 ABBREVIATIONS, ACRONYMS, & DEFINITIONS

### 6.1 Abbreviations & Acronyms

ACM	Asbestos-Containing Material
AFB	Air Force Base
AFFTC/EM	Air Force Flight Test Center/Environmental Management
AST	Aboveground Storage Tank
CIP	Chemical Issue Point
CMS	Chemical Management System
CCR	California Code of Regulations
CFR	Code of Federal Regulations
DOT	Department of Transportation
DTSC	Department of Toxic Substances Control
EO	Executive Order
FIFRA	Fungicide and Rodenticide Act
HAZCOM	Hazard Communication
HAZWOPER	Hazardous Waste Operator Emergency Responder
HWCL	Hazardous Waste Control Law
LDR	Land Disposal Restriction
LRWQCB	Lahontan Regional Water Quality Control Board
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
RCRA	Resource Conservation and Recovery Act
SPCCP	Spill Prevention Control and Countermeasures Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TRI	Toxic Release Inventory
TSDF	Treatment, Storage, and Disposal Facility
US EPA	US Environmental Protection Agency

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### 6.3 Definitions

Aboveground Storage Tank	An enclosed stationary device that is designed to store liquid materials. It is constructed primarily of materials that provide structural support and its volume (including integral piping) is less than 10 percent beneath the surface of the ground.
Asbestos	Substances comprised of or derived from actinolite, amosite, anthophyllite, chrysotile, crocidolite, or tremolite.
Asbestos-Containing Material	Any material or product that contains one percent or more asbestos.
Chemical Issue Point	Centralized locations (Buildings 1623, 4809, 4810, 4823, 4833) for hazardous material storage and issue, and hazardous waste collection.
Chemical Management System	DFRC's system for managing hazardous materials and hazardous waste. The CMS is based on the centralized purchase, storage, and issue of hazardous materials with data managed through a web-based information management system. Hazardous waste is tracked from the point of generation to disposal. The intent of the CMS is to assure that trained persons with appropriate protective equipment are using the proper amount and type of chemicals in a safe manner and location.
Chemical Use Zone	An area where a hazardous material is licensed to an individual for use in a specific manner with prescribed training and personal protective equipment.
Environmentally Preferable Product or Service	A product or service that has a reduced adverse effect on human health and the environment when compared with similar products or services that serve the same purpose.
Hazardous Material	A substance that is capable of posing a risk to health, safety, property, or the environment. The term includes hazardous substances, hazardous wastes, high temperature materials, or other materials listed in the Hazardous Materials Tables in 49 CFR 172.101.

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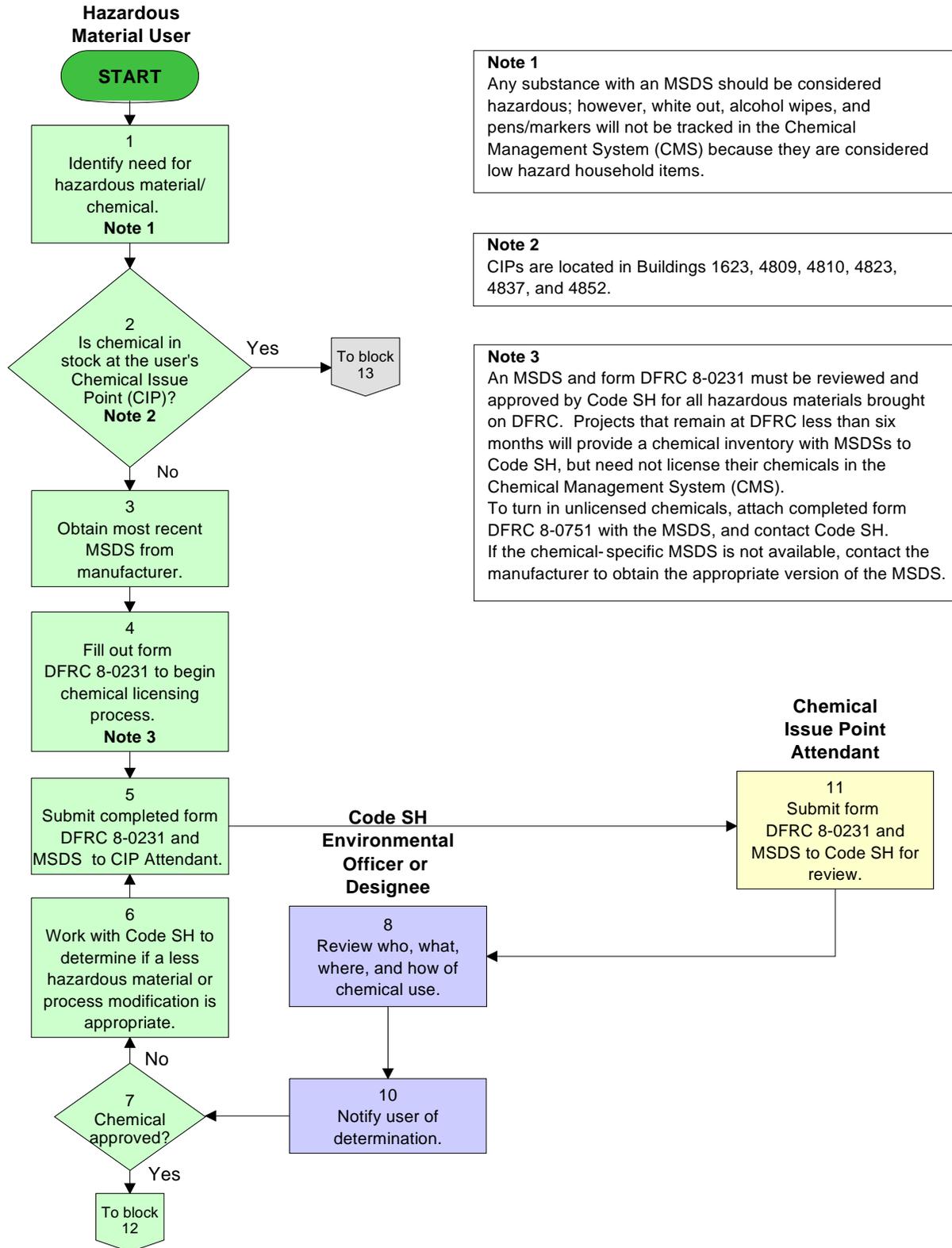
Hazardous Material License	Authorization from Code SH that is required before purchasing a hazardous material.
Hazardous Waste	A hazardous material that can no longer be used for its original purpose.
Hazardous Waste Accumulation Point	A central location for hazardous waste collection.
Hazardous Waste Contingency Plan	A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of hazardous waste or hazardous waste constituents at a US EPA permitted facility that could threaten human health or the environment.
Lead Based Paint	A paint that has any detectable amount of lead.
Life-Cycle Cost Analysis	The comprehensive examination of a product's environmental and economic effects throughout its lifetime, including new materials extraction, transportation, manufacturing, use, and disposal.
Material Safety Data Sheet	An information sheet provided by hazardous material manufacturers or distributors that summarizes product information such as ingredients, physical characteristics, hazards, safe storage, handling, and usage procedures, recommended personal protective equipment, and emergency response.
Personal Protective Equipment	Clothing or equipment used to isolate a worker from direct contact with a hazardous material.
Pollution	Any hazardous substance entering a waste stream or otherwise released into the environment.
Prevention	Source reduction and other practices that reduce or eliminate the creation of pollution through increased efficiency in the use of raw materials, water, or other natural resources.
Recycling	Recovering materials from a solid or liquid waste stream for use as raw materials in a manufacturing or other process.

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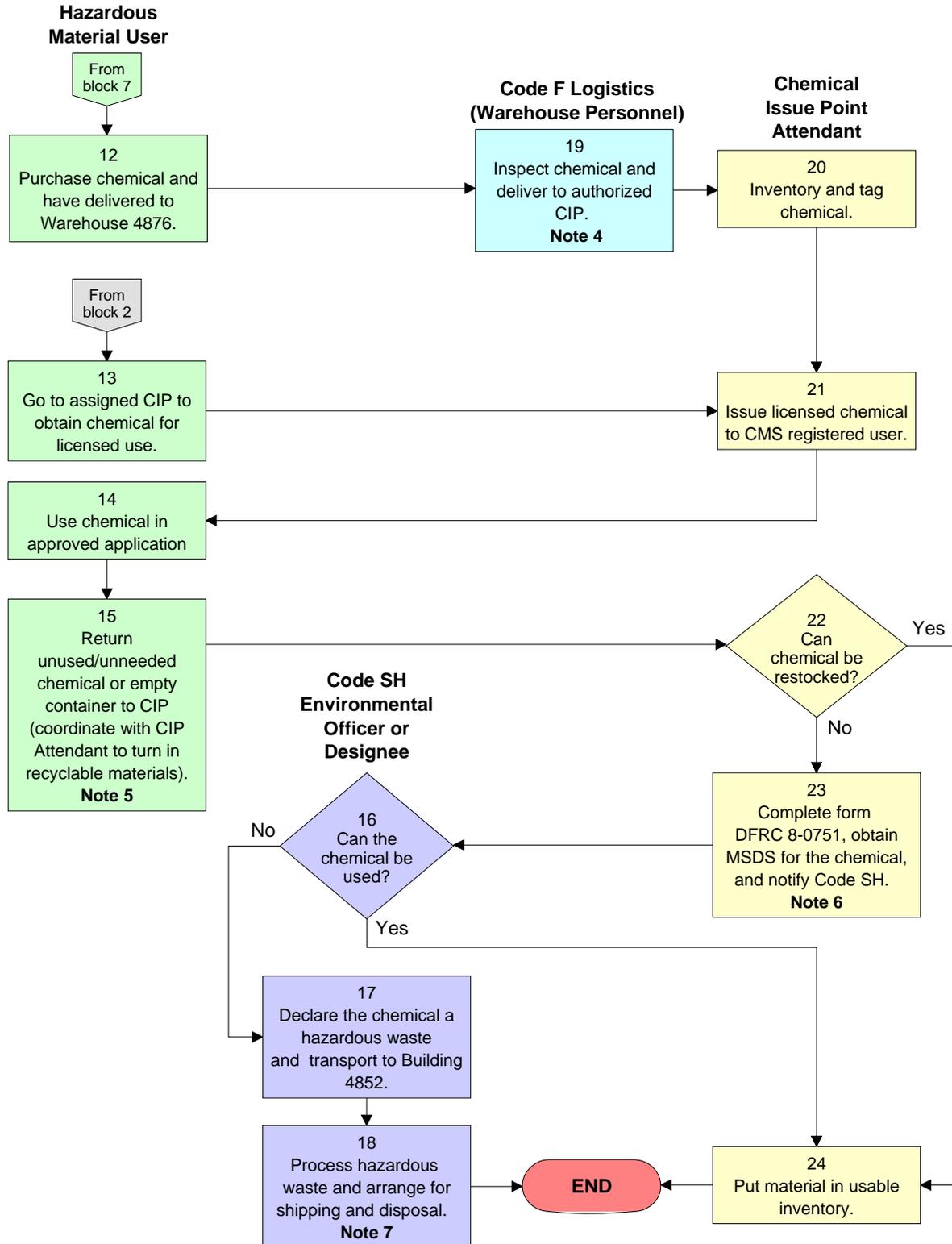
Release	Any intentional or accidental spill or leak into the environment, including discarding opened or unopened containers, of a hazardous material.
Reportable Quantity	The quantity of a hazardous material that triggers regulatory agency reporting requirements when it is released.
Toxic Release Inventory Report	An annual report sent to the US EPA that details the storage, use, or release of listed chemicals by a facility. Also known as "Form R" Inventory Reports.
Underground Storage Tank	An enclosed stationary device that is designed to store liquid materials whose volume (including integral piping) is more than 10 percent beneath the surface of the ground.
Uniform Hazardous Waste Manifest	A regulatory shipping document required when transporting hazardous waste for offsite treatment, storage, or disposal. It contains information regarding the contents of the waste, waste generator, transporter, and treatment, storage, or disposal facility.
US EPA Identification Number	The tracking number assigned by the US EPA to each hazardous waste generator, transporter, and treatment, storage, or disposal facility.

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## 7.0 HAZARDOUS MATERIALS/WASTE MANAGEMENT PROCESS FLOWCHART



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**Note 4**

If there is no label, no MSDS, or the container is leaking, reject the shipment and notify Code SH. (Some purchases may be delivered directly to the CIP).

**Note 5**

Code SH will approve limited worksite storage of chemicals, as appropriate.

Also, coordinate with Code SH to determine proper handling procedures for waste materials resulting from maintenance or modification of DFRC facilities [e.g., asbestos-containing materials, lead-based paint, and polychlorinated biphenyls (may be contained in electrical switches, capacitors, and lamp ballasts)].

Also, Code SH will arrange for transportation and processing of recyclable materials within 90 days of when the material was first put in the container.

**Note 6**

If the chemical-specific MSDS is not available, contact the manufacturer to obtain the appropriate version of the MSDS.

**Note 7**

Hazardous waste containers are shipped within 90 days of when waste was first put in the container.

## 8.0 RESPONSIBILITIES

### 8.1 Safety, Health, and Environmental Office, Code SH

#### A. Operational Controls

- 1) Assure the operational functions of the DFRC Chemical Management System (CMS), such as the following.
  - Data quality
  - Software updates
  - Hazardous material user support
  - Hazardous waste generator support
  - Hazardous waste accumulation points
  - Hazardous waste processing facility (Building 4852)
- 2) Work with customers to identify opportunities to eliminate, reduce, reuse, or recycle hazardous materials (i.e., pollution prevention) and consequently minimize the generation of hazardous waste.
- 3) Review hazardous material purchase/license requests (form DFRC 8-0231), project documents, and procurement documents for chemical management requirements and pollution prevention opportunities.
- 4) Evaluate hazardous materials to determine if they can be reused or must be declared a hazardous waste.
- 5) Ensure that all containers previously holding hazardous materials are empty according to California standards prior to disposal.
- 6) Arrange for the shipping of recyclable hazardous materials to the appropriate permitted facility.
- 7) Perform periodic inspections of chemical issue points and locations where hazardous materials are used.
- 8) Maintain DFRC's Certified Unified Program Agency (CUPA) permit issued by the Kern County Environmental Health Services.
- 9) Track quantities of hazardous waste generated to determine the applicability of California's Hazardous Waste Source Reduction and Management Review Act (SB-14). Complete required reports and implement source reduction measures as necessary.

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- 10) Evaluate new waste streams to determine if they are hazardous. When necessary, complete waste profiles using process knowledge and/or laboratory analysis.
- 11) Conduct and document weekly inspections of all hazardous waste accumulation points and the Hazardous Waste Processing Facility (Building 4852).
- 12) Transfer full containers of hazardous waste from accumulation points to the Hazardous Waste Processing Facility on a weekly basis.
- 13) Ensure that hazardous waste is packaged in accordance with DOT requirements before shipment.
- 14) Ship hazardous wastes to a permitted treatment, storage, or disposal facility (TSDF) within 90 days of the earliest date of generation.
- 15) Ensure that each shipment of hazardous waste is accompanied by a completed Uniform Hazardous Waste Manifest (manifest). Include the required Land Disposal Restriction (LDR) notification unless it is already on file at the TSDF.
- 16) Ship universal wastes (e.g., fluorescent lamps, batteries [except lead-acid automotive type], mercury thermometers, electronic components) and drained used oil filters to a permitted facility within one year of generation.
- 17) Submit the blue copy of each hazardous waste manifest to DTSC within 30 days of the shipping date. Ensure that a copy of each manifest is signed and returned by the TSDF to DFRC within 30 days of the date of shipment. Submit an exception report to DTSC if the TSDF copy is not received within 45 days of the shipment date.
- 18) Arrange for analysis of wastes suspected to contain PCBs to determine if they contain levels that subject them to regulation as PCB wastes.
- 19) Assure that fluorescent light ballasts are managed as hazardous waste unless they are marked by the manufacturer as not containing PCBs.
- 20) Arrange for the payment of the following fees.
  - TSDF Hazardous Waste Facility Fee paid to the State Board of Equalization
  - Business Emergency Plan and Chemical Inventory fee paid to Kern County Environmental Health Services
  - Hazardous Waste Disposal fee paid to DTSC

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- Hazardous Waste Manifest fee paid to DTSC
- 21) Retain the following records.
- Formal training conducted for CMS customers (e.g., hazardous material users, CIP Attendants)
  - MSDSs for all hazardous materials located at DFRC (retained in Building 4823)
  - Signed copies of hazardous waste manifests (including the copy signed and returned by the TSDF – retained for 3 years from the date the waste was accepted by the initial transporter)
  - LDR notices for new waste streams or waste streams shipped to a new facility
  - Weekly inspections for hazardous waste accumulation points, initial accumulation points, and the hazardous waste processing facility (Building 4852)
  - Hazardous Waste Operator Emergency Responder (HAZWOPER) Certificate
  - Department of Transportation training for Hazardous Material/Waste Technician
  - Incident records that require implementation of the TSDF Hazardous Waste Contingency Plan
  - Reportable hazardous material/waste releases
  - External regulatory inspections and associated findings of non compliance

#### B. Communication

- 1) Coordinate hazardous material/waste management issues within DFRC and serve as point of contact with the following external agencies and organizations.
- US Environmental Protection Agency (US EPA)
  - US Department of Transportation (DOT)
  - National Response Center
  - California Environmental Protection Agency – Department of Toxic Substances Control (DTSC)
  - California Office of Emergency Services
  - California State Water Resources Control Board – Lahontan Region (LRWQCB)

- California State Board of Equalization
  - Kern County Environmental Health Services
  - NASA Headquarters Environmental Management Division (NASA EMD)
  - Air Force Flight Test Center/Environmental Management (AFFTC/EM)
  - Edwards Air Force Base (AFB) Fire Department.
- 2) Immediately submit a verbal notification to the California Office of Emergency Services, LRWQCB, and AFFTC/EM when hazardous material/waste is released to groundwater or is in excess of a state reportable quantity. Releases exceeding a Federal reportable quantity will also be reported to the National Response Center.
  - 3) Within 10 business days, follow up verbal hazardous material release notifications with a written report (in the prescribed format) to the agencies initially notified.
  - 4) Coordinate with Code F to evaluate the use of pesticides.
  - 5) Coordinate with customers who maintain aboveground storage tanks (ASTs) (e.g., Codes F, OM) to test storm water within secondary containment areas before releasing it to the environment.
  - 6) Submit (by March 1st of each year) an updated version of the DFRC Business Emergency Plan and Chemical Inventory to the Kern County Environmental Health Services and the Edwards AFB Fire Department.
  - 7) Submit (by July 1st of each year) a Toxic Release Inventory Report to the US EPA and the DTSC for Emergency Planning and Community Right-to-Know Act Section 313 chemicals stored, used, or released at DFRC in excess of threshold quantities. If no threshold quantities were exceeded, submit such notification to the US EPA.
  - 8) Report annual pollution prevention progress to NASA Headquarters Environmental Management Division through the NASA Environmental Tracking System.
  - 9) Provide updates, as requested, of the Edwards AFB Spill Prevention, Control, and Countermeasure Plan (SPCCP) to AFFTC/EM. (This includes the DFRC aboveground storage tank list for the LRWQCB Storage Statement (due by July 1st of even numbered years).
  - 10) Provide updates, as requested, of the Edwards AFB Storm Water Pollution Prevention Plan (SWPPP) to AFFTC/EM.

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- 11) Submit California Hazardous Waste Source Reduction and Management Review Act (SB-14) Reports to DTSC every four years if more than 13.2 tons of applicable hazardous waste is generated.
- 12) Submit a biennial hazardous waste report to DTSC by March 1 of each even numbered year.

#### C. Documentation/Document Control

- 1) Maintain the following plans.
  - DFRC Business Emergency Plan and Chemical Inventory
  - DFRC Pollution Prevention Plan
- 2) Retain copies of the following plans.
  - Edwards AFB Pest Management Plan
  - Edwards AFB SPCCP
  - Edwards AFB SWPPP

#### D. Training

- 1) Hazardous Material/Waste Technicians must maintain a Hazardous Waste Operator Emergency Responder (HAZWOPER) certification (required – initial 40 hour and annual 8 hour refresher).
- 2) Hazardous Material/Waste Technicians must attend training on Department of Transportation (DOT) regulations (required – every three years).
- 3) Assist Supervisors in fulfilling their Hazard Communication responsibilities as required by DCP-S-009, Safety & Health Requirements Manual, Chapter 9 (required – as needed).
- 4) Provide Chemical Management System (CMS) training to Chemical Issue Point (CIP) Attendants (required – initial and as needed).
- 5) Provide Spill Prevention, Control, and Countermeasures Plan (SPCCP) training to personnel whose job activities may result in a chemical release (recommended – annually).
- 6) Provide Storm Water Pollution Prevention Plan (SWPPP) training to personnel whose job activities may impact storm water quality (recommended – annually).

#### E. Emergency Preparedness and Response

- 1) Act as On Scene Commander for hazardous material/waste releases that require an emergency response because they cannot be contained and cleaned up by the immediate user.
- 2) Provide assistance to hazardous material users for releases that cannot be contained and cleaned up within the limits of the user's Hazard Communication training.
- 3) Provide assistance to AFFTC spill responders for hazardous material/waste releases that cannot be contained and cleaned up within the limits of DFRC resources.

### 8.2 Hazardous Material Users (e.g., Codes F, O, M, P, R)

#### A. Operational Controls

- 1) Work with Code SH to identify opportunities to eliminate, reduce, reuse, or recycle hazardous materials (i.e., pollution prevention) and consequently minimize the generation of hazardous waste.
- 2) Submit hazardous material purchase/license requests (form DFRC 8-0231) to Code SH for purchase approval. All requests must be accompanied by the manufacturer's most recent MSDS.
- 3) Inspect hazardous material shipments when they are received at the warehouse and deliver them to the authorized Chemical Issue Point (CIP). Do not release hazardous materials from the warehouse that are not properly labeled, are in a leaking container, or are not accompanied by an MSDS (Code F Logistics).
- 4) Use hazardous materials, while wearing the proper personal protective equipment, in the zone(s) and in the manner for which they are licensed through the Chemical Management System (CMS).
- 5) Clean up hazardous material releases within the limits of Hazard Communication training (see DCP-S-009, Safety & Health Requirements Manual, Chapter 9).
- 6) Return unused hazardous materials and empty containers to the Chemical Issue Point (CIP) they were received from.

**Note:** An MSDS and form DFRC 8-0231 must be reviewed by Code SH for all hazardous materials brought on DFRC. However, projects that remain at DFRC less than six months may choose not to license their hazardous materials through the

CMS. In this case, contact Code SH to arrange for turn-in of unused materials (with a Hazardous Waste Turn-in Request [form DFRC 78-051] and Material Safety Data Sheet(s)).

- 7) Coordinate with the CIP Attendant to place recyclable hazardous materials (e.g., used oils and lubricants, recovered aircraft fuel) in designated storage containers.
- 8) Perform monthly visual inspections to verify the integrity of aboveground storage tanks (ASTs) containing hazardous materials (e.g., diesel fuel, gasoline, jet fuel, aviation fuel).
- 9) Immediately repair the source of leaks from ASTs and connected systems.
- 10) Retain the following records.
  - Monthly visual inspections of ASTs
  - Inspection and maintenance records for each item that contains concentrations of PCBs > 50 parts per million (retained for at least 3 years after disposal of the item)

#### B. Communication

- 1) Request CMS training from Code SH as needed.
- 2) Notify Code SH of any release of hazardous materials.
- 3) Notify Code SH when storm water within AST secondary containment structures needs to be removed. Code SH will test the water if necessary and either remove or release it.

#### C. Documentation/Document Control

- 1) Retain a copy of the Edwards AFB Pest Management Plan (Code F Maintenance).

#### D. Training

- 1) Attend Hazard Communication training (per DCP-S-009, Safety & Health Requirements Manual, Chapter 9) before handling hazardous materials (required – initial and as needed).
- 2) Attend Spill Prevention, Control, and Countermeasures Plan (SPCCP) training as requested by Code SH (recommended – annually).
- 3) Attend Storm Water Pollution Prevention Plan (SWPPP) training as requested by Code SH (recommended – annually).

#### E. Emergency Preparedness and Response

- 1) Call 911 immediately to report a hazardous material release when the cleanup effort is beyond your Hazard Communication training (see DCP-S-009, Safety & Health Requirements Manual, Chapter 9 and DCP-S-110, Emergency Preparedness and Response for Hazardous Material Releases).

### 8.3 Supervisors of Hazardous Material Users

#### A. Operational Controls

- 1) Ensure that persons under your supervision are trained and have proper personal protective equipment to safely work with hazardous materials as required by DCP-S-009, Safety & Health Requirements Manual, Chapter 9.
- 2) Ensure that only trained persons with appropriate protective equipment use hazardous materials in the zone(s) and in the manner for which they are licensed through the Chemical Management System (CMS).
- 3) Ensure that contracts require hazardous materials/wastes to be managed according to this procedure.
- 4) Maintain Hazard Communication training records for all required personnel.

#### B. Communication

- 1) Request assistance, as necessary, in fulfilling Hazard Communication responsibilities as required by DCP-S-009, Safety & Health Requirements Manual, Chapter 9.
- 2) Provide immediate updates to employee chemical use zone assignments to Code SH using the CMS Employee Update form (SH 84).

#### C. Documentation/Document Control

- 1) None identified.

#### D. Training

- 1) Ensure that employees who use or may be exposed to hazardous materials receive Hazard Communication training (per DCP-S-009, Safety & Health Requirements Manual, Chapter 9) before handling hazardous materials (required – initial and as needed).

E. Emergency Preparedness and Response

- 1) None identified.

**8.4 Chemical Issue Point (CIP) Attendants**

A. Operational Controls

- 1) Work with Code SH and hazardous material users to identify opportunities to eliminate, reduce, reuse, or recycle hazardous materials (i.e., pollution prevention) and consequently minimize the generation of hazardous waste.
- 2) Ensure that all hazardous material containers are in good condition, compatible with the materials stored in them, kept closed and secured during storage, and properly labeled.
- 3) Break down bulk hazardous materials into units of common usage as necessary.
- 4) Ensure that Chemical Management System (CMS) tracking labels are attached to all hazardous material containers prior to issue.
- 5) Issue hazardous materials only to personnel who are licensed through the CMS and have the relevant training for the use of the material.
- 6) Monitor hazardous materials for shelf life expiration and coordinate with the hazardous material user for shelf life extension.
- 7) Receive unused/unneeded hazardous materials or empty containers and notify Code SH.
- 8) Restock hazardous materials as appropriate (e.g., within shelf life, containers in good condition, properly labeled).
- 9) Complete form DFRC 8-0751 and obtain the MSDS for hazardous materials that can't be restocked.
- 10) Clean up hazardous material releases within the limits of Hazard Communication training (see DCP-S-009, Safety & Health Requirements Manual, Chapter 9).

B. Communication

- 1) Forward hazardous material purchase/license requests (form DFRC 8-0231) and associated MSDSs to Code SH for review and approval.
- 2) Provide an MSDS to the customer the first time they are issued a hazardous material and upon request.

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- 3) Contact Code SH when assistance is necessary to determine if a hazardous material can be restocked.

C. Documentation/Document Control

- 1) Maintain an MSDS for all hazardous materials in the CIP.

D. Training

- 1) Attend Hazard Communication training per DCP-S-009, Safety & Health Requirements Manual, Chapter 9 before handling hazardous materials (required – initial and as needed).
- 2) Attend Code SH training on the use of the Chemical Management System (CMS) (required – as needed or as requested by Code SH).

E. Emergency Preparedness and Response

- 1) Call 911 immediately to report a hazardous material release when the cleanup effort is beyond Hazard Communication training (See DCP-S-009, Safety & Health Requirements Manual, Chapter 9 and DCP-S-110, Emergency Preparedness and Response for Hazardous Material Releases).

## 9.0 METRICS & TREND ANALYSIS

The measure of success of this procedure is that the generation of non recyclable hazardous waste from ongoing operations at DFRC does not exceed 25,000 pounds per year.

## 10.0 MANAGEMENT RECORDS & RECORDS RETENTION

Reference the Code S Records Log (form DFRC 79) for retention requirements for the following management records associated with this procedure.

- Hazardous Materials Request (form DFRC 8-0231)
- Hazardous Waste and Hazardous Materials Turn-in Request (form DFRC 8-0751)
- 90 Day Hazardous Waste Accumulation Site Inspection
- Uniform Hazardous Waste Manifest (form DTSC 8022A)
- Hazardous Waste Operator Emergency Responder Certificate
- Department of Transportation Hazardous Material/Waste Technician Training
- Chemical Management System customer training

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- MSDSs for all hazardous materials located at DFRC (retained in Building 4823)
- Signed copies of hazardous waste manifests (including the copy signed and returned by the TSDF – retained for 3 years from the date the waste was accepted by the initial transporter)
- LDR notices for new waste streams or waste streams shipped to a new facility
- Weekly inspections of hazardous waste accumulation points, initial accumulation points, and the hazardous waste processing facility
- Incidents that require implementation of the TSDF Hazardous Waste Contingency Plan
- Monthly visual inspections of aboveground storage tanks
- Inspection and maintenance records for each item that contains concentrations of PCBs > 50 parts per million (retained for at least 3 years after disposal of the item)
- Hazard Communication training
- Spill Prevention Control and Countermeasures Plan training
- Storm Water Pollution Prevention Plan training
- Reportable hazardous material/waste releases
- External regulatory inspections and associated findings of non compliance

## **11.0 ATTACHMENTS**

The following resources are attached to aid in carrying out this procedure.

- Attachment A – Related Internet Website Links
- Attachment B – Regulatory Overview

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## Attachment A – Related Internet Web Site Links

California EPA Aboveground Petroleum Storage Act

<http://www.swrcb.ca.gov/cwphome/agt/law.html>

California Code of Regulations

<http://ccr.oal.ca.gov>

California Environmental Protection Agency

<http://www.calepa.ca.gov/>

California EPA Department of Toxic Substances Control

<http://www.dtsc.ca.gov/>

California EPA DTSC Onsite Tiered Permitting Flowchart

<http://www.dtsc.ca.gov/PublicationsForms/onsite-tiered-permitting-flowchart.pdf>

California Health and Safety Code – Hazardous Waste Control

[http://www.dtsc.ca.gov/LawsRegulationsPolicies/hs\\_code.html](http://www.dtsc.ca.gov/LawsRegulationsPolicies/hs_code.html)

California State Water Resources Control Board

<http://www.swrcb.ca.gov/>

Code of Federal Regulations

<http://www.gpoaccess.gov/cfr/index.html>

Department of Pesticide Regulations

<http://www.cdpr.ca.gov/>

Department of Pesticide Regulations Strategic Plan

<http://www.cdpr.ca.gov/docs/planning/strat.htm>

Enviro\$en\$e – US EPA Pollution Prevention Home Page

<http://es.epa.gov/>

Executive Order 13101 – Greening the Government Through Waste Prevention, Recycling and Federal Acquisition

<http://es.epa.gov/>

Executive Order 13148 – Greening the Government Through Leadership in Environmental Management

<http://www.epa.gov/opptintr/epp/pubs/eo13148.pdf>

Federal Insecticide, Fungicide and Rodenticide Act

<http://www4.law.cornell.edu/uscode/7/ch6.html>

Hazardous Material Management System

<http://www.hmms.com>

Hazardous Materials Transportation Act

<http://www4.law.cornell.edu/uscode/49/stllch51.html>

Hazardous Waste Source Reduction Management Review Act

<http://www.calepa.ca.gov/Legislation/1997/ab1089.htm>

Material Safety Data Sheets

<http://msds.pdc.cornell.edu/msdssrch.asp>

NASA KSC Joint Group on Pollution Prevention (Lead Center Function)

<http://www.jgpp.com>

NASA KSC Recycling and Affirmative Procurement (Lead Center Function)

<http://environmental.ksc.nasa.gov/recycle/intro.cfm>

Pesticide Information Profiles

<http://ace.ace.orst.edu/info/extoxnet/pips/ghindex.html>

Pollution Prevention Act

<http://www4.law.cornell.edu/uscode/42/ch133.html>

Pollution Prevention Yellow Pages

[http://www.p2.org/inforesources/nppr\\_yps.html](http://www.p2.org/inforesources/nppr_yps.html)

Resource Conservation and Recovery Act

<http://www4.law.cornell.edu/uscode/42/ch82.html>

Toxic Substances Control Act

<http://www4.law.cornell.edu/uscode/15/ch53.html>

US EPA

<http://www.epa.gov>

US EPA Environmental Planning and Community Right-to-Know Act

<http://www.epa.gov/swercepp>

US EPA Office of Solid and Hazardous Waste

<http://www.epa.gov/epaoswer/osw/hazwaste.htm>

US EPA Toxic Release Inventory (TRI) Program

<http://www.epa.gov/tri/>

VendInfo (Database of Pollution Prevention Products and Services)

<http://es.epa.gov/vendors/>

## Attachment B – Regulatory Overview

Hazardous materials and hazardous waste at DFRC are regulated at the Federal and State levels. The following table presents a summary of legal and other requirements applicable to chemical management that DFRC is subject to and the associated risk of noncompliance.

<b>FEDERAL REGULATIONS</b>	
<b>Resource Conservation and Recovery Act (RCRA)</b>	
<b>Topic</b>	<b>Requirement</b>
Regulation of hazardous wastes from generation to ultimate disposal (cradle to grave).	Requires generators of hazardous waste to characterize waste, store waste in a specific manner, and either apply for and receive a hazardous waste permit, or, in the absence of a permit, manage the waste in specific containers and for specific times before proper disposal.
Section 6962 – Federal Procurement	Requires Federal government agencies to give preference in their procurement programs to products and practices that conserve and protect natural resources and the environment. Federal agencies that purchase more than \$10,000 of an item listed in its Comprehensive Procurement Guideline are required to establish an Affirmative Procurement program for that item.
<b>Risk of Noncompliance</b>	
<p>Administrative Penalties</p> <ul style="list-style-type: none"> <li>• Compliance Order – Explains the nature of a violation and sets a compliance deadline. Permit revocation or suspension as well as a civil penalty.</li> <li>• Section 6962 – Compliance Order-Notice of Violation: No fines for noncompliance with this section of RCRA.</li> </ul> <p>Civil Penalties</p> <ul style="list-style-type: none"> <li>• Up to \$25,000 for each violation.</li> <li>• Lack of US EPA required monitoring: Up to \$5,000 per day.</li> </ul> <p>Criminal Penalties</p> <ul style="list-style-type: none"> <li>• Knowing violations. Up to \$50,000 per each day of violation and/or imprisoned for up to 2 years.</li> <li>• Transportation of hazardous waste to non-permitted facility or treatment, storage, or disposal of wastes without permit. Up to \$50,000 per each day of violation and/or up to 5 years imprisonment.</li> <li>• Knowing endangerment of another person’s life. Up to \$250,000 and/or up to 15 years imprisonment for an individual. Organizations can be fined up to \$1 million.</li> </ul>	
<b>Hazardous Materials Transportation Act (HMTA)</b>	
<b>Topic</b>	<b>Requirement</b>
Establishment of regulations for air, highway, or rail-transported hazardous substance shipments. Enforced by the DOT.	Covers transporters and those who prepare shipments for transport, as well as those responsible for the containers used to transport hazardous substances (such as DFRC). Sets standards for proper handling of those materials, including packaging, labeling, and shipping requirements.

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<b>Risk of Noncompliance</b>	
<p>Civil Proceeding</p> <ul style="list-style-type: none"> <li>• Notice of Violation or Letter of Disqualification. Three types of civil proceedings: Driver Disqualification, Civil Forfeiture, Investigative Proceeding</li> </ul> <p>Civil Penalties</p> <ul style="list-style-type: none"> <li>• Knowing violations. Between \$250 and \$25,000 for each violation.</li> </ul>	
<b>Emergency Planning and Community Right-to-Know Act</b>	
<b>Topic</b>	<b>Requirement</b>
Support of emergency planning efforts at the state and local levels. Public and local government information concerning community hazards.	Requires states to establish emergency response commissions and local emergency planning committees. Facilities that use, store, or handle hazardous chemicals must meet a series of requirements for emergency planning and notification, community right-to-know reporting, and toxic chemical release reporting.
<b>Risk of Noncompliance</b>	
<p>Administrative Penalties</p> <ul style="list-style-type: none"> <li>• Class I - Up to \$25,000 per violation.</li> <li>• Class II - First violation: Up to \$25,000 per day for each day of violation. Second or subsequent violation: Up to \$75,000 per day for each day of violation.</li> </ul> <p>Civil Penalties</p> <ul style="list-style-type: none"> <li>• Up to \$25,000 per violation.</li> <li>• Citizen Suit - any person may commence a civil action against a facility.</li> </ul> <p>Criminal Penalties</p> <ul style="list-style-type: none"> <li>• Knowing and willful violation. First violation: Up to \$25,000 and/or imprisonment for up to 2 years. Second or subsequent violations: Up to \$50,000 and/or imprisonment for up to 5 years.</li> </ul>	
<b>Toxic Substances Control Act</b>	
<b>Topic</b>	<b>Requirement</b>
Program for the regulation, production, and importation of industrial chemical substances and mixtures.	Toxic Substances Control Act charges US EPA with the duty to develop sufficient data to assess the "effect of chemical substances and mixtures on health and the environment."
<b>Risk of Noncompliance</b>	
<p>Civil Penalties</p> <ul style="list-style-type: none"> <li>• Up to \$25,000 per day for each day of violation</li> </ul> <p>Criminal Penalties</p> <ul style="list-style-type: none"> <li>• Knowing or willful violation. Up to \$25,000 per day for each day of violation and/or up to 1 year imprisonment.</li> </ul>	
<b>Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)</b>	
<b>Topic</b>	<b>Requirement</b>
Restrictions for the safe manufacture, storage, transportation, and application of pesticides and herbicides.	Requires manufacturers to register and classify products. Requires that pesticide applicators be state licensed, and that they handle and use pesticides according to specific procedures.

<b>Risk of Noncompliance</b>	
<p>Civil Penalties</p> <ul style="list-style-type: none"> <li>Registrant or commercial applicator that violates any provisions of FIFRA. Up to \$5,000 for each offense.</li> </ul> <p>Criminal Penalties</p> <ul style="list-style-type: none"> <li>Commercial applicator of restricted use pesticides who knowingly violates any provisions of FIFRA. Up to \$25,000 fine and/or imprisoned up to 1 year.</li> <li>Anyone who, with intent to defraud, discloses information relative to trade secret product formulas. Up to \$10,000 fine and/or imprisoned up to 3 year.</li> </ul>	
<b>Pollution Prevention Act</b>	
<b>Topic</b>	<b>Requirement</b>
Pollution Prevention – a national strategy for environmental protection.	Pollution should be prevented or reduced at the source whenever feasible; pollution that cannot be prevented should be recycled in an environmentally safe manner; pollution that cannot be prevented or recycled should be treated in an environmentally safe manner; and disposal or other release into the environment should be employed only as a last resort and should be conducted in an environmentally safe manner.
<b>Risk of Noncompliance</b>	
None	
<b>Executive Order (EO) 13101 – Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition</b>	
<b>Topic</b>	<b>Requirement</b>
Federal procurement of recycled products. Pollution prevention in daily operations. Hierarchy of source reduction, recycling, treatment, and disposal.	Federal agencies must develop a strategic waste prevention and recycling plan, incorporate pollution reduction procedures, and develop the market for recycled products by establishing Federal procurement requirements for them.
<b>Risk of Noncompliance</b>	
<p>Administrative Penalties</p> <ul style="list-style-type: none"> <li>The consequences of not complying with the requirements of an Executive Order are administrative in nature.</li> </ul>	
<b>EO 13148 - Greening the Government through Leadership in Environmental Management</b>	
<b>Topic</b>	<b>Requirement</b>
Federal environmental management program for compliance, pollution prevention, and affirmative procurement.	Requires reduction of 10 percent annually or 40 percent overall for TRI releases, relative to a 2001 baseline, by December 31, 2006. Federal agencies must develop a comprehensive pollution prevention plan and reduce the use of selected toxic chemicals, hazardous substances and pollutants, or its generation of hazardous and radioactive waste 50 percent relative to a 2001 baseline, by December 31, 2006.
<b>Risk of Noncompliance</b>	
<p>Administrative Penalties</p> <ul style="list-style-type: none"> <li>The consequences of not complying with the requirements of an Executive Order are administrative in nature.</li> </ul>	

<b>CALIFORNIA STATE REGULATIONS</b>	
<b>California Hazardous Waste Control Law (HWCL)</b>	
<b>Topic</b>	<b>Requirement</b>
Directs the State DTSC to adopt regulations to implement the statute. California is now authorized to administer the HWCL program in lieu of the RCRA program.	Unlawful to “manage” hazardous waste except as provided in the HWCL and the regulations adopted by the DTSC. “Management” of hazardous waste is broadly defined to include virtually everything that is done with a material once it becomes a waste, including generation, storage, transport, treatment, and disposal.
<b>Risk of Noncompliance</b>	
<p><b>Administrative Penalties</b></p> <ul style="list-style-type: none"> <li>Up to \$25,000 for each day of violation.</li> </ul> <p><b>Civil Penalties</b></p> <ul style="list-style-type: none"> <li>Intentionally or negligently making any false statement or representation. Up to \$25,000 for each violation, or for each day for a continuing violation.</li> <li>Wrongful disposal due to negligence. Up to \$25,000 for each day of violation.</li> </ul> <p><b>Criminal Penalties</b></p> <ul style="list-style-type: none"> <li>Except as otherwise provided in the HWCL, any person who violates any provision of the HWCL, or any permit, rule, regulation, standard, or requirement issued or adopted pursuant to the HWCL. First violation: Up to \$1,000 fine and/or imprisonment for up to 6 months. Second violation: Not less than \$5,000 or more than \$25,000 fine and imprisonment for up to 1 year.</li> <li>Knowingly disposing of hazardous waste at an unpermitted facility. Not less than \$5,000 or more than \$100,000 fine for each day of violation and up to 1-year imprisonment. If great bodily injury or substantial probability of death resulted, up to \$250,000 and imprisonment for up to 3 years).</li> <li>Knowingly transporting hazardous waste to an unpermitted facility or treating of hazardous waste at an unpermitted facility. Not less than \$5,000 or more than \$100,000 fine for each day of violation and up to 1-year imprisonment. If great bodily injury or substantial probability of death resulted, up to \$250,000 and imprisonment for up to 3 years).</li> <li>Knowingly makes any false statement or representation in any application, label, manifest, record, report, permit, notice to comply, or other document filed, maintained, or used for purposes of compliance with the HWCL. First violation: Not less than \$2,000 or more than \$25,000 fine for each day of violation, and/or imprisonment for up to 1 year. Second or subsequent violation: Not less than \$2,000 or more than \$50,000 fine for each day of violation and/or imprisonment for up to 1 year.</li> <li>Knowingly has in his or her possession any record relating to the generation, storage, treatment, transportation, disposal, or handling of hazardous waste required to be maintained pursuant to the HWCL, which has been altered or concealed. First violation: Not less than \$2,000 or more than \$25,000 fine for each day of violation, and/or imprisonment for up to 1 year. Second or subsequent violation: Not less than \$2,000 or more than \$50,000 fine for each day of violation and/or imprisonment for up to 1 year.</li> </ul>	
<b>California Aboveground Petroleum Storage Act (CAPSA)</b>	
<b>Topic</b>	<b>Requirement</b>
Program to inspect and regulate petroleum ASTs containing specified petroleum products.	Each owner or operator of a regulated AST facility must: file biennially a storage statement and fee with the State Water Resources Control Board (SWRCB); prepare a Spill Prevention Control and Countermeasures Plan (SPCCP) consistent with Clean Water Act requirements; and notify the OES immediately upon discovery of any spill or release of 42 gallons or more of petroleum (this must also be reported

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		under the provisions of the Porter-Cologne Water Quality Control Act).
<b>Risk of Noncompliance</b>		
Civil Penalties <ul style="list-style-type: none"> <li>Repeat violation. Up to \$10,000 for each day, for each violation.</li> </ul>		
<b>California Pest Control Operations (CPCO)</b>		
<b>Topic</b>	<b>Requirement</b>	
Registration, sale, transportation, or use of pesticides to the exclusion of all local regulation.	To protect the environment from environmentally harmful pesticides by prohibiting, regulating, or ensuring proper stewardship of those pesticides; to permit agricultural pest control by competent and responsible licensees and permittees under strict control of the director and commissioner and to permit agricultural pest control by competent and responsible licensees and permittees under strict control of the director and commissioner. Criminal Penalty - Every person who violates this division or any regulation issued pursuant to this division. Misdemeanor: Not less than \$500 nor more than \$5,000 fine and/or imprisonment of 10 days to 6 months. Each violation constitutes a separate offense.	
<b>Risk of Noncompliance</b>		
Civil Penalties <ul style="list-style-type: none"> <li>Any person who violates this division, or any regulation issued pursuant to this division. Not less than \$1,000 nor more than \$10,000 for each violation.</li> </ul>		
<b>California Hazardous Waste Source Reduction and Management Review Act of 1989 (SB-14)</b>		
<b>Topic</b>	<b>Requirement</b>	
Evaluation of source reduction measures and quantification of waste reduction goals.	Requires that any business generating hazardous waste in excess of 12,000 kg per year, prepare a "Hazardous Waste Source Reduction Evaluation Review and Plan" and a "Hazardous Waste Management Performance Report" every 4 years. In addition, a Summary Plan Report must be developed and submitted to DTSC.	
<b>Risk of Noncompliance</b>		
Civil Penalties <ul style="list-style-type: none"> <li>Up to \$1,000 per day for each violation.</li> </ul>		

<b>NASA REQUIREMENTS</b>		
<b>NPR 8820.3 – Pollution Prevention</b>		
<b>Topic</b>	<b>Requirement</b>	
Implementation of EO 13148, "Greening the Government Through Leadership in Environmental Management" to prevent or reduce pollution at the source.	1) Eliminate or reduce pollution at the source through process changes, reengineering and/or material substitution. 2) Recycle pollution that cannot be prevented. 3) Dispose of pollution only as a last resort and in a legal and environmentally safe manner.	
<b>Risk of Noncompliance</b>		
Administrative Penalties <ul style="list-style-type: none"> <li>The consequences of not complying with the requirements of an NPR are administrative in nature.</li> </ul>		

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