BOEING

Team Product Document

GO Number	S/A Number	Page 1 of	Total Pages	Rev. Ltr/Chg. No. See Summary of Chg.	Number
N/A	N/A	46	48	B	EPA-00061

Program Title
Closure of ETEC (R21-WM)

Document Title **DOE Order 435.1 Implementation Plan**

Document Type
Engineering Plan of Action

Related Documents

Original Issue Date 10-17-2000
Release Date 02-03-2010

Approvals See Pg 1.1
Date

Prepared By/Date
ETEC Closure Technical Staff
1-20-2010

Dept.

Mail/Addr
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IR&D Program? Yes ☐ No ☒
If Yes, Enter Authorization No.

Distribution

*	Name	Mail Addr.

Abstract

This document provides the detailed plan to implement DOE Order 435.1, Radioactive Waste Management for the ETEC Closure program being conducted by The Boeing Company for the Department of Energy-Oakland Operations Office (DOE-OAK) under contract No. DE-AC03-99SF21530. This Implementation Plan follows the format of DOE G 435.1 and addresses Low Level Radioactive waste (LLW) and mixed-LLW waste (MLLW). There is no High Level or Transuranic (TRU) waste managed at the ETEC site.

The purpose of this document is to demonstrate how Boeing management and personnel, through internal policies, procedures and administrative controls, implement the requirements of DOE Order 435.1, Radioactive Waste Management. The stated purpose of DOE Order 435.1 and therefore this implementation plan is to "*ensure that all Department of Energy (DOE) radioactive waste is managed in a manner that is protective of worker and public health and safety, and the environment.*"

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Supporting Document Summary of Change

No. EPA-00061

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Rev.	Summary of Change	Approvals and Date
A	General revision of text to reflect full implementation of DOE O 435.1 of DOE O 435.1. Revised text and appendices to reflect removal of all TRU waste from site	R. Amar P. Rutherford
B	Revised to reflect current internal procedures. Revised to reflect current organizational structure. Revised to reflect status of D&D.	R. Amar R. Amar P. Rutherford 2/3/10 Phil Rutherford 2/3/2010

EXECUTIVE SUMMARY

This document provides the detailed plan to implement DOE Order 435.1, Radioactive Waste Management for the ETEC Closure program being conducted by The Boeing Company for the Department of Energy under contract No. DE-AC03-99SF21530. This Implementation Plan follows the format of DOE G 435.1 and addresses Low Level Radioactive waste (LLW) and mixed-LLW waste (MLLW) management. No High Level or Transuranic (TRU)[1] waste is currently managed by the ETEC Closure program.

Boeing is currently working to complete remediation of all DOE owned facilities at the Energy Technology Engineering Center (ETEC) site. The remediation program is structured to eliminate all current and future Boeing and DOE liabilities from DOE funded programs at the site. Remediation of former nuclear facilities is in its final stages at ETEC. There are currently only two facilities with any residual radiological contamination

The major waste stream from past, current, and future D&D projects is LLW with a small fraction of MLLW. The LLW is primarily construction debris consisting of concrete, steel and other building material. There is no High Level or TRU waste at the ETEC site and none will be generated during the final stages of D&D.

D&D of radiological facilities has been on going for a number of years and Boeing has in place a comprehensive set of procedures and administrative controls to ensure compliance with existing federal, state and local regulations and company policies. The site is an approved generator for disposal of LLW at the DOE-Nevada Test Site. On a case by case basis, MLLW is treated and/or disposed of at the DOE approved EnergySolutions commercial disposal facility at Clive, Utah. On an as needed basis, DOE approval is obtained for treatment and/or disposal of MLLW at other DOE approved commercial facilities.

The current program was reviewed against the Prescriptive and Performance based requirements of DOE O 435.1. Compliance was verified for prescriptive requirements and compliance or equivalence was verified for performance-based requirements. As discussed in this implementation plan, Boeing has determined that the existing ETEC Closure program meets the requirements of DOE O 435.1. Compliance with DOE O 435.1 was achieved with the initial issuance of this implementation plan (10/17/00). The initial release and implementation of this plan included the preparation or revision of approximately seven documents, training of personnel to the requirements of DOE O-435.1, and implementation of the new and revised procedures at the RMHF and waste generating facilities. All identified actions in this implementation plan were completed by 10/1/2001.

One Exemption Request was included as part of this plan's original submittal in accordance with DOE O 251.1-1A. It is not cost effective to utilize the DOE Automated Transportation Management System (ATMS) for the ETEC Closure Program. Existing Boeing policies and

[1] All TRU waste previously in storage at the site was shipped to the Hanford site in December 2002 for final characterization and ultimate shipment to WIPP under the Small Quantity Site (SQS) initiative.

procedures are being used to ensure radioactive material and qualified carriers at competitive prices transport waste generated under the DOE program.

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ETEC Closure Program – DOE Order 435.1 Implementation Plan

1 PURPOSE AND SCOPE

1.1 Purpose

This document provides the detailed plan to implement DOE Order 435.1, Radioactive Waste Management for the ETEC Closure program being conducted by The Boeing Company for the Department of Energy under contract No. DE-AC03-99SF21530. This Implementation Plan follows the format and guidance of DOE M 435.1, Radioactive Waste Management Manual and DOE G 435.1 Chapters 1,3 and 4. The plan addresses Low Level Radioactive waste (LLW) and mixed-LLW waste (MLLW) management. There is no High Level or Transuranic (TRU)[2] waste currently managed at the ETEC site.

The purpose of this document is to demonstrate how Boeing management and personnel, through internal policies, procedures and administrative controls, implement the requirements of DOE O 435.1. The stated purpose of DOE Order 435.1 and therefore this implementation plan is to "*ensure that all Department of Energy (DOE) radioactive waste is managed in a manner that is protective of worker and public health and safety, and the environment*."

1.2 Scope

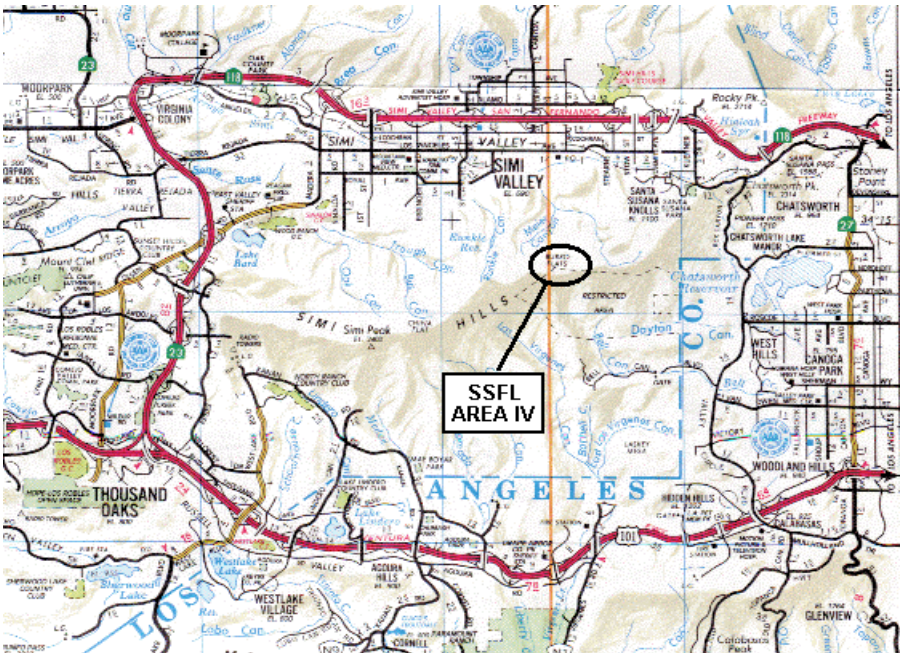
The scope of this document is limited to DOE funded activities and DOE radioactive waste managed under the ETEC Closure Program as defined in contact No. DE-AC03-99SF21530. The scope of this plan is limited to management of LLW and MLLW wastes.

2 BACKGROUND

The Boeing Santa Susana Field Laboratory (SSFL) is located in the Simi Hills of southeastern Ventura County, California, adjacent to the Los Angeles county line approximately 29 miles northwest of downtown Los Angeles center. Figure 1 shows the location of the SSFL relative to the surrounding communities. The SSFL site was originally owned and operated by North American Aviation (NAA) Corporation. The NAA Atomics International (AI) Division began nuclear operations in support of DOE predecessor agency [Atomic Energy Commission (AEC)] programs in Area IV of the SSFL in the mid 1950's. AI began operation of the Energy Technology Engineering Center (ETEC) as a DOE owned, company operated (GOCO) laboratory (originally the Liquid Metals Engineering Center) in the mid 1960's. NAA merged with Rockwell Corporation in 1967 forming Rockwell International (RI). Under RI, AI and ETEC operations were merged into the Energy Systems Group (ESG) and later into RI's Rocketdyne Division. In 1996, The Boeing Company purchased the Aerospace Divisions of RI including Rocketdyne and its former AI and ETEC facilities.

[2] All TRU waste previously in storage at the site was shipped to the Hanford site in December 2002 for final characterization and ultimate shipment to WIPP under the Small Quantity Site (SQS) initiative.

Figure 1: Location of SSFL



Nuclear operations at SSFL included 10 nuclear research reactors, seven critical facilities, the Rockwell International Hot Laboratory (RIHL), the Nuclear Materials Development Facility (NMDF), the Radioactive Materials Handling Facility (RMHF), and various test and nuclear material storage areas. As a result of the company's participation in atomic energy research, several of these buildings became radioactively activated and/or contaminated. Throughout the operation of the ETEC, as individual nuclear facilities terminated operations, they were decommissioned and decontaminated and/or dismantled (D&D) to eliminate radiological contamination and/or activation.

Nuclear operations ceased in the late 1980's and DOE funded activities were then concentrated on D&D of the remaining former nuclear facilities. D&D operations were consolidated under ETEC in 1991. Remediation of the site is in its final stages and there are currently only two facilities with any residual radiological contamination.

Figure 2 shows an aerial view of Area IV circa 1985 showing the general layout of the site and the proximity of the site the community of Simi Valley.

Figure 2: SSFL Area IV Aerial View (circa 1985)

Figure 3 shows an aerial view the Area IV in the spring of 2005 following D&D of the RIHL. The two remaining radiological facilities are the SNAP Environmental Test Facility (Building 4024) and the RMHF complex.

Figure 3: SSFL Area IV D&D Status - 2005

The major waste stream from past, current, and future D&D projects is LLW with a small fraction of MLLW. The LLW is construction debris, primarily concrete, steel and other building material. There is also a small fraction of secondary waste generated during the D&D process including plastic, wood and other consumables.

D&D of radiological facilities has been on going for many years and Boeing has in place a comprehensive set of procedures and administrative controls to ensure compliance with existing federal, state and local regulations and company policies. The site is an approved generator for disposal of LLW at DOE-Nevada Test Site. On a case by case basis, LLW is shipped to and MLLW is treated at and/or disposed of at the DOE approved Energy Solutions commercial facility at Clive, Utah. On an as needed basis, DOE approval is obtained for treatment and/or disposal of MLLW at other DOE approved commercial facilities.

The current program was reviewed against the Prescriptive and Performance based requirements of DOE O 435.1. Compliance was verified for prescriptive requirements and compliance or equivalence was verified for performance based requirements. Boeing has determined that the existing ETEC Closure program meets the requirements of DOE O 435.1. Compliance with DOE 435.1 was achieved with the initial issuance of this plan in FY00. Initial compliance activities included the revision and/or preparation of several documents, training of personnel to the requirements of DOE O 435.1, and implementation of the new

and revised procedures at the RMHF and waste generating facilities. All action items were completed on schedule by 10/1/01.

One Exemption Request was included as part of the original submittal of this plan in accordance with DOE O 251.1A. It is not cost effective to utilize the DOE Automated Transportation Management System (ATMS) for the ETEC Closure Program. Existing Boeing policies and procedures are used to ensure qualified carriers at competitive prices transport material.

3 APPLICABLE DOCUMENTS

Boeing documents that demonstrate compliance with DOE O 435.1 are listed in Table 2.

4 RADIOACTIVE WASTE MANAGEMENT

This section follows the outline of DOE O 435.1-1 chapter by chapter. Sections 4.1 through 4.4 of this document parallel DOE O 435.1-1 Chapters I through IV. Each section and sub-section of this Implementation Plan uses the same title as the equivalent DOE O 435.1-1 section. General Requirements

This section (Chapter I, General Requirements and Responsibilities of DOE O 435.1), discusses how Boeing will meet the management responsibilities and requirements that are applicable to DOE and its contractors for the management of all DOE radioactive waste types.

4.1.1 Delegation of Authority

Oversight of the ETEC site closure program is through the DOE-OAK Operations Office and its Environmental Programs Division. General oversight of this implementation plan has been delegated to the DOE-OAK ETEC Site Waste Management Program Manager. DOE-OAK also maintains an ETEC site office at the SSFL facility, Building 1436.

4.1.2 Use of Guidance

The ETEC Closure contract identifies the DOE directives to be used as program guidance. DOE O 435.1 also identifies additional DOE directives, executive orders and federal regulation guidance documents. The DOE-NTS and EnergySolutions each have Waste Acceptance Criteria (WAC) that identify additional requirements. Boeing has a comprehensive set of guidance documents that implements company policy and flows down federal, state and local government regulations. All of these documents are used in concert to ensure compliance with DOE O 435.1 and its basic purpose "*to ensure that all Department of Energy radioactive waste is managed in a manner that is protective of worker and public health and safety, and the environment.*"

Guidance documents are available for review and application in hard copy and/or electronic forms at Boeing. DOE directives are available through the DOE web-site at: https://www.directives.doe.gov/. The Code of Federal Regulations is located at http://www.access.gpo.gov/nara/cfr/cfr-table-search.html and the California Code of Regulations is located at: http://ccr.oal.ca.gov/. Boeing procedures are available on-line on its internal website.

Boeing personnel have and continue to periodically review guidance documents within their areas of responsibility to ensure that applicable requirements and revisions are incorporated in programmatic documents. Regular program surveillance/audits verify the latest revisions of documents are in use.

4.1.3 Radioactive Waste Management

Management of radioactive waste is on-going under the ETEC Closure program in accordance with existing contractual requirements. The program has in place proven administrative controls, comprehensive management and document control systems, and highly trained personnel at all levels. The combination of these program elements work together to meet the prescriptive and performance based requirements of DOE 435.1.

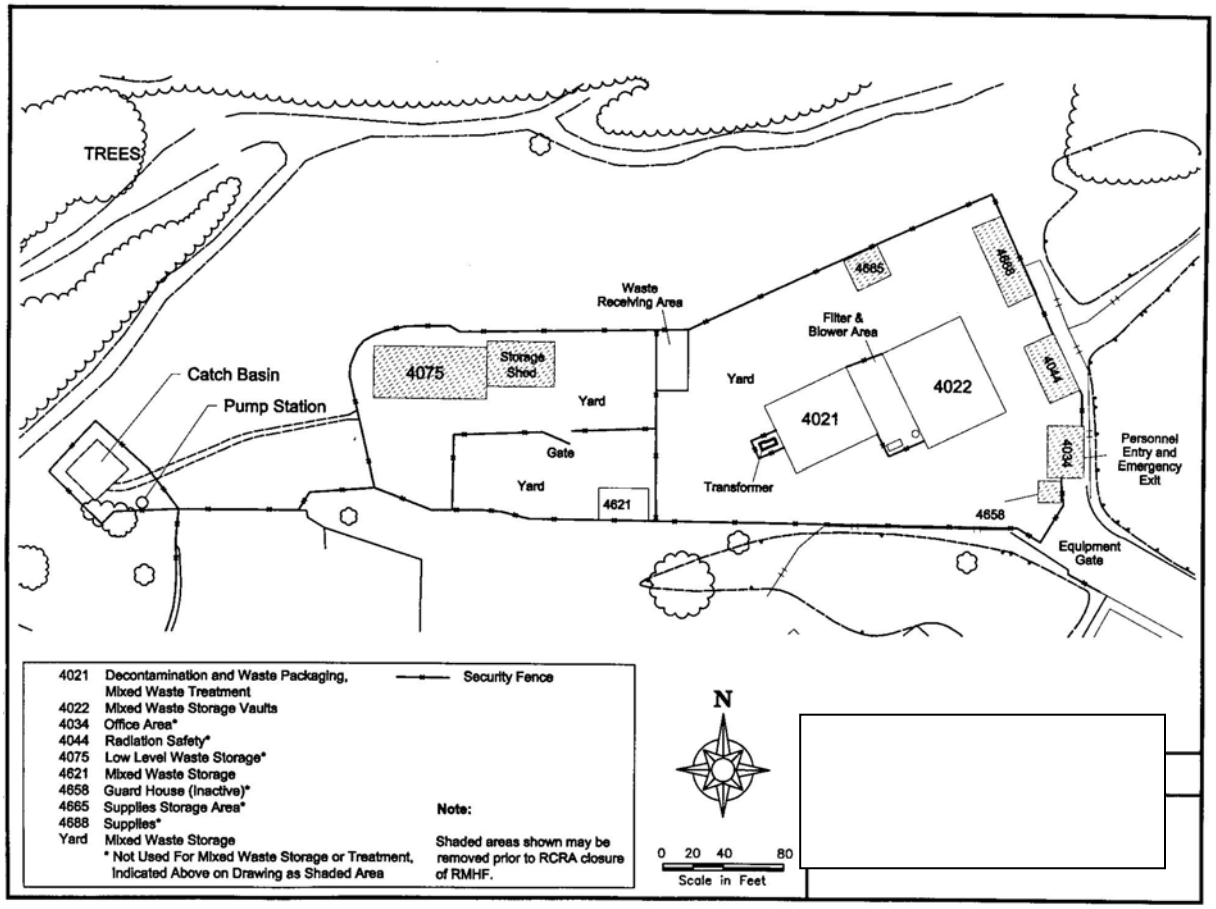
Boeing is an approved generator for disposal of LLW at the DOE-Nevada Test Site. On a case by case basis, LLW is shipped to, and MLLW is treated and/or disposed of, at the DOE approved EnergySolutions commercial disposal site in Clive, Utah.

A detailed review of Order 435.1 was conducted to ensure all prescriptive and performance based requirements were identified and incorporated into existing or new site documents. Compliance was verified for prescriptive requirements and compliance or equivalence was verified for performance-based requirements. That review determined that the existing ETEC Closure program meets the requirements of DOE O 435.1 with only minor changes needed. Implementation of this plan was accomplished and initially required the preparation and/or revision of several documents, training of personnel to the requirements of DOE O-435.1, and implementation of the new and revised procedures at the RMHF and waste generating facilities. Full compliance was achieved with the completion of all action items on 10/1/2001.

The RMHF is the designated facility for management, storage, and staging for shipment of LLW. A small quantity of MLLW is generated during D&D operations at the various facilities and is stored at the RMHF pending treatment and disposal. The facility is a permitted Treatment and Storage facility and currently operates under a Part A Interim Status Permit. The MLLW is segregated from the LLW and managed in compliance with the permit requirements and the Site Treatment Plan (STP) mandated by the Federal Facilities Compliance Act (FFCAct). Figure 4 shows an aerial view and Figure 5 shows the general layout of the RMHF and the principal buildings within the compound.

Figure 4: Aerial View of RMHF

Figure 5: RMHF Layout



MLLW is segregated from the LLW and is stored in Building 4621. Building 4021 is used to size reduce and repackage LLW and perform limited treatment of MLLW and Building 4022 is used for general operations and the pre-shipment processing of packaged LLW waste. Building 4034 is the engineering office where the electronic database for waste management is maintained. Building 4044 contains the Health Physics office, analytical equipment and radiological records.

4.1.4 Analysis of Environmental Impacts

Boeing implements the requirements of 10 CFR Part 1021 and DOE O 451.1A through PMP-00001, ETEC Closure Program Management Plan. As required by the regulations and guidance documents, Boeing analyzes all significant new operations and facility modifications to ensure potential environmental impacts have been appropriately reviewed and analyzed. The DOE is currently preparing an Environmental Impact Statement (EIS) to comply with NEPA.

4.1.5 Requirements of Other Regulations and DOE Directives

The following sub-sections address how Boeing implements requirements from other regulations and DOE directives that flow from O 435.1. In most cases, the requirements flow down through existing Boeing policies and procedures into program and working level plans and procedures. In some cases, i.e., Classified Waste, the regulations are not applicable as no classified waste is handled on site.

In accordance with DOE O 251.1A, one Exemption Request was submitted with the original release of this DOE O 435.1 Implementation Plan. It is not cost effective to utilize the DOE Automated Transportation Management System (ATMS) for the ETEC Closure Program. Existing Boeing policies and procedures are used to select qualified carriers at competitive costs (see section 4.2.4.11). Appendix presents the Exemption Request.

4.1.5.1 Analysis of Operations Information

DOE O 210.1, Performance Indicators and Analysis of Operations Information, objectives are incorporated at all program levels through existing Boeing procedures. Boeing makes extensive use of “metrics” to identify, monitor, and analyze important programmatic, environment, safety, and health performance data. Metrics are used to identify the effectiveness of management systems, performance trends and potential problems and to ensure the safety of workers, the public, or the environment. The system requires all teams to: 1) identify key activities, products, and operations; 2) establish performance goals; 3), track and chart performance; and 4) regularly report progress and potential problems to management. The system also requires inclusion of a corrective action plan for any areas of sub-performance or potential problems. Metrics are posted in the team work areas, discussed in regular staff meetings and reported to management in program status meetings to provide timely feedback and process evaluation. Typical ETEC Closure Waste Management program metrics include:

- ALARA and employee dosimetry history,
- Employee training certification status,
- OSHA “Reportable” and “Lost Time” incidents
- LLW generation versus shipping volumes (waste inventory),
- MLLW STP milestones and progress,

- Program performance versus budgeted and actual schedule and cost (ACWP, BCWP & BCWS).

4.1.5.2 Classified Waste

This section is not applicable. There is no classified waste at ETEC.

4.1.5.3 Conduct of Operations

This section is not applicable. ETEC is currently not an operating facility and is under closure. Activities at the RMHF are conducted in compliance with the Permit Operations Plan.

4.1.5.4 Criticality Safety

ETEC does not possess reportable quantities of special nuclear materials (SNM). Therefore a criticality incident is not credible and a criticality safety program in accordance with DOE O 420.1, Facility Safety, is not required.

4.1.5.5 Emergency Management Program

Boeing document BD02-399-05, "Santa Susana Field Laboratory, Area IV Emergency Readiness Assurance Plan" was prepared and submitted to DOE in response to the requirements of DOE O-151.1, Comprehensive Emergency Management Systems. The plan details the Emergency Management Plan for Area IV of the SSFL site (ETEC Closure program area of operations). It identifies and analyzes potential hazards and emergency situations and documents the safety precautions to prevent such occurrences and the responses and resources available to mitigate each situation in the event it should occur. Emphasis is on worker, public and environmental protection. The plan addresses both potential natural (earthquake, fire, etc.) and man-made (release of radioactivity, sabotage, etc.) events.

4.1.5.6 Environmental and Occurrence Reporting

DOE O 231.1, Safety, and Health Reporting, and DOE O 232.1A, Occurrence Reporting and Processing of Operations Information, are incorporated into the ETEC Closure contract. Boeing has in place existing policies and procedures for meeting the requirements of O 231.1 and O 232.1A and therefore addressing the environmental and incident monitoring and reporting requirements of O 435.1.

The Boeing SSFL Environment, Health & Safety (EHS) procedures identify a number of top level monitoring and reporting requirements. Environmental monitoring requirements are implemented through Boeing's policies and procedures. All Boeing and contract operations are conducted in strict adherence to OSHA (and Cal-OSHA as applicable) health & safety monitoring and reporting requirements implemented through the SSFL Health & Safety

Programs. DOE, state and corporate radiological monitoring and reporting requirements are implemented through the C-400 directives.

Boeing implements an on-line Incident Reporting System (IRS) to report and disseminate incident information, and to track corrective action to completion.

Boeing also uses the Behavior Based Safety (BBS) Observation Program to assist management in incorporating safety awareness in every employees' daily activities. The program is built on regular dedicated observations of employee on-the-job activities. The program strives to develop safety-oriented attitudes, provide appropriate training and procedures, proper tools and proper use of the tools through employee involvement. Health & Safety specialists analyze management observation statistics for trends. Feedback is then provided to management and their staff to identify generic areas where added vigilance, training or other aids may be required to enhance safety performance.

4.1.5.7 Environmental Monitoring

The Boeing SSFL EHS organization is charged with overall responsibility for oversight and implementation of environmental issues at Boeing SSFL. DOE O 5400.1, General Environmental Protection Program, and DOE O 5400.5, Radiation Protection of the Public and Environment are included in the existing contract and are fully implemented through the Boeing SSFL procedures (EHS C-101, C-200 series and C-400 series) and sub-tier documents.

The ETEC Closure Program team reports directly to the director of EHS based on a 1997 decision by Boeing senior management that Environmental, Health & Safety (EHS) aspects of remediation programs were equal to or more critical than engineering issues. The Boeing EHS organization has dedicated groups for: Health & Safety, Environmental Protection and Radiation Safety concerns. Each group is comprised of teams with specific charters. The director of EHS and the majority of the EHS staff are located at SSFL in Building 1436. The Environmental Protection group operates the Hazardous Waste Management facility which manages all non-radioactive hazardous wastes and provides qualified HAZWOPER certified personnel as backup to any hazardous waste issues at the operating facilities. All ETEC Closure operations personnel assigned to the RMHF are also HAZWOPER certified.

The Boeing SSFL EHS organization maintains a broad spectrum internal web-site that provides links to technical specialists, specific information on environmental, health and safety issues, assistance on training, Material Safety Data Sheets (MSDS), and incident reporting. The Boeing Company EHS organization and its extensive resources are also available through the Boeing internal web-site.

4.1.5.8 Hazard Analysis Documentation and Authorization Basis

The ETEC Closure program and the SSFL site do not include any "Nuclear Facilities" as defined by DOE-STD-1027-92, Hazard Characterization & Accident Analysis for Compliance with DOE 5480.23. A detailed analysis of the RMHF radionuclide inventory was conducted and Boeing recommended to DOE that based on a sum of fractions of 0.227 that the RMHF be categorized as a "Radiological Facility," the lowest hazard category. The rational and back up analysis is documented in Boeing Canoga Park letter 2002RC04885, M. Lee to James James S. Hirahara, "Supplemental Information on Recategorization of Building 4022 of RMHF," dated 12/20/2002.

The Process Hazard Analysis, performed in accordance with the guidelines of DOE-EM-STD-5502-94, DOE Limited Standard: Hazard Baseline Documentation is documented in EID-04446, "Safety Analysis Document (SAD) / Process Hazard Analysis (PHA) for RMHF Operations." The analysis identified ten hazards for review and concluded that the overall facility hazard category is "Low." Appendix summarizes the potential hazards, the individual initiating events, potential effect, protective action, and risk assessment. The RMHF was determined to have a "Low" risk classification rating based on the reference consequence rating levels and risk matrix.

4.1.5.9 Life-Cycle Asset Management

The requirements of DOE O 430.1A, Life-Cycle Asset Management, and DOE 4330.4B, Maintenance Management Program, flow down through document PMP-00001, ETEC Closure Program Management Plan, and its requirements for detailed planning for each D&D project. Those requirements also flow down from numerous Boeing procedures that provide guidance for the accountability and proper management of tangible assets.

A Project (Facility) D&D Plan is prepared for all significant D&D activities. The D&D plan delineates the basic plan and methodologies to be used during the D&D process. It identifies the resources (personnel, training, technical specialists, equipment, materials, etc.) required to support D&D. It identifies key facility systems (i.e., HEPA, fire protection) that must be protected and maintained during D&D and equipment categories to be surplused and materials to be recycled. It specifies the types and estimated volumes of waste streams to be generated including packaging and special handling requirements and/or treatment and disposal (i.e., mixed wastes) issues.

There is no known or anticipated LLW without a path forward. Due to the extensive site history and process knowledge data available, the existing and future waste streams at the two remaining facilities containing radioactive material are well known and manageable. Boeing has in place all facets of the program needed to manage and properly dispose of LLW and existing and potential MLLW waste streams under the current Site Treatment Plan (STP).

4.1.5.10 Mixed Waste

Federal (40 CFR) and State of California (CCR Title 22, Division 4, "Environmental Health") regulations for the management of the hazardous component of mixed wastes are

implemented through the Site Treatment Plan (STP) as mandated by FFCAct for DOE programs within California. The SSFL site operates under the guidelines of DOE/OAK Doc. No. 95-W-307/5400.2.1.3.4, Site Treatment Plan for the Energy Technology Engineering Center Canoga Park, California (STP), dated 10/95 and its periodic updates in accordance with the FFCAct. The RMHF is a Part A, Interim Status Permitted Facility.

4.1.5.11 Packaging and Transportation

All off-site shipments are made in compliance with guidance documents 49 CFR, Transportation, DOE O 460.1, Packaging and Transportation Safety and DOE O 460.2, Departmental Materials Transportation and Packaging Management. Packaging and shipping is performed in accordance with ETEC Closure program documents EID-04482, Packaging & Shipment of Radioactive Waste, for shipments to DOE-NTS and DOE-Hanford and EID-04495, Qualification and Shipment of LLW and MLLW to Envirocare, for shipment of LLW and MLLW to the DOE approved commercial site at Clive, Utah. Packaging for and shipment to other DOE approved commercial disposal sites is performed in accordance with EID-04493, Procedure for Packaging & Shipping Radioactive Materials to ensure inclusion of disposal cite criteria and disposal site host state regulations.

The SSFL site will not utilize the DOE Automated Transportation Management System (ATMS). It is not cost effective for DOE related shipments (< 1% of Boeing freight) and does not apply to general Boeing shipments. Boeing hazardous material transportation experts will take equivalent precautions to ensure that shipment of hazardous and/or radioactive materials are consigned to qualified carriers at competitive prices. An exemption request (Ref. Appendix) prepared in accordance with DOE O 251.1-1A was submitted to DOE-OAK as part of the initial DOE O 435.1 implementation process.

4.1.5.12 Quality Assurance Program

QA requirements are implemented through documents QA-00001, Quality Assurance Program for ETEC Closure; QA-00002, QA Inspection Requirements for Radioactive Shipments; QA-00003, Occurrence Reporting; QA-00004, QA Surveillance Requirements for Radioactive Facilities; QA-00007, Evaluation and Approval of Suppliers; and QA-00008, Quality Implementation Plan (QIP) for the DOE Site Closure Program; in accordance with DOE 5700.6C[3], Quality Assurance and its replacement, DOE O 414.1A, Quality Assurance, and CFR 830.120, Quality Assurance Requirements.

4.1.5.13 Radiation Protection

10 CFR 835, Occupational Radiation Protection, and DOE 5400.5, Radiation Protection for the Public and Environment, are fully implemented under the existing contract through Boeing SSFL SOP C401, Radioactive Materials and Ionizing Radiation, its sub-tier guidance documents and program specific procedures. Program specific implementation guidance is

[3] Contract DE-AC03-99SF21530 was revised to replace DOE 5700.6c with DOE O 414.1A.

provided in RS-00014, Radiation Protection Plan for the Implementation of 10 CFR 835. The Radiation Protection function is performed by the Radiation Safety group of the Boeing SSFL EHS organization.

4.1.5.14 Records Management

DOE O 200.1, Information Management Program, and DOE O 414.1 requirements for records management are implemented under PMP-00001, ETEC Closure Program Management Plan, PMP-00003, Radioactive Waste Management Plan and EID-04486, Procedure for using the RMHF Tracking System (RTS). The three primary components of the RMHF operating records are the RTS, the facility-logbook and the individual waste package (container) tracking documents (commonly referred to as "Lot Followers"). Quality Assurance oversight for record management is implemented through document QA-00001, Quality Assurance Program for ETEC Closure.

4.1.5.15 Release of Waste Containing Residual Radioactive Material

All materials and/or waste containing detectable levels of radioactivity are managed in accordance with Boeing SSFL SOP C-401, Radioactive Materials and Ionizing Radiation which implements and flows down requirements of DOE 5400.5, Radiation Protection of the Public and Environment. Release of materials from controlled areas is handled in strict accordance with Boeing SSFL SOP C-401 and its sub-tier documents.

4.1.5.16 Safeguards and Security

The Safeguards & Security Plan for SSFL is maintained current by Boeing. It describes the SSFL site and RMHF specific safeguards & security in place to ensure protection of radiological material and waste in response to the requirements of DOE O 470.1 Safeguards and Security Program.

The SSFL site is a fenced, gated and vehicle entry point controlled facility. The RMHF, the radioactive waste storage and management facility, is also fenced, gated and secured during off-shift hours. Operations, ALARA, and material control at the RMHF are conducted in accordance with document EID-04494, RMHF Radioactive Materials and Waste Acceptance Criteria and referenced documents.

Material accountability is under the Nuclear Materials Management function of the EHS Radiation Safety manager in accordance with SOP C-400 and its sub tier SOPs.

4.1.5.17 Safety Management System

Boeing document EID-04694, ETEC Closure Contract Integrated Safety Management System Description documents the ETEC Closure program safety management system. EID-04694 further describes how Boeing procedures and ETEC Closure program documents meet the DOE 450.4G-1A ISMS seven guiding principles and five core functions. EID-04694 provides a list of the ISMS guiding principles and core functions, grouped per guidance

documents, and the corresponding Boeing and program documents that address individual ISMS points for the ETEC Waste Management Basis.

EID-04694 highlights how the requirements of DOE P450.4, Safety Management System Policy, DOE P 450.5, Line Environment, Safety & Health Oversight, 48 CFR Chapter 9, Department of Energy Acquisition Regulations and DOE M411.1-1, Manual of Safety Management Functions, Responsibilities, and Authorities are implemented.

EPA-00062, 10 CFR 851 Compliance Plan documents the ETEC program's compliance with 10 CFR 851, Worker Safety and Health Program.

4.1.5.18 Site-Evaluation and Facility Design

No new facilities are planned or anticipated. Maintenance of existing facilities is managed in accordance with the existing Conduct of Operations matrix (refer to section 4.1.5.3). Facility operations and/or modifications to support D&D activities will be reviewed against requirements of PMP-00001. Facility personnel perform general maintenance and Plant Services personnel perform maintenance on specialized equipment based on established schedules for existing equipment.

In the event that a requirement for a new facility or major modification to an existing facility is identified, the site selection and design will be performed in compliance with DOE O 420.1, DOE O 430.1, and PMP-00001.

4.1.5.19 Training and Qualification

The requirements of DOE O 360.1, Training, are implemented through EID-04450, DOE-Site Restoration Training Plan. EID-04450 identifies, in matrix form, a comprehensive list of required training based on job description and/or facility assignment. Specialty training is also identified for various functions including the designated Waste Certification Official (WCO) for certifying shipments of LLW and MLLW to DOE approved disposal and /or treatment facilities. Training consists of class attendance, document reading and On-the-Job (OJT) training. The training and certification process uses an electronic database program to provide current personnel certification lists, maintain class schedules and notify management and personnel of scheduled classes, pending certification expiration and delinquent certifications. Personnel may not be assigned to perform tasks unless required certifications are current. The database is available on the Boeing Company Intranet for management and employees to review current certification and future certification expiration dates.

The RMHF is categorized as a Radiological and not a Nuclear Facility, reference letter 2002RC04885 (refer to section 4.2.4.8) and therefore 5480.20A, Personnel Selection, Qualification and Training Requirements for DOE Nuclear Facilities, requirements are not applicable.

4.1.5.20 Waste Minimization and Pollution Prevention

Under the existing contract, DOE 5400.1 guidance is implemented through document EID-04488, Waste Minimization and Pollution Prevention Awareness Plan. Requirements of Executive Order 12856, Federal Compliance with Right-to-Know Laws & Pollution Prevention Requirements, and Executive Order 13101, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, implemented under DOE O 435.1 are also addressed in EID-04488. Under the guidance of EID-04488, Boeing SSFL incorporates waste minimization into every aspect of D&D operations. Waste minimization is included in D&D project planning and opportunities for waste minimization are identified in project and/or facility D&D plans.

4.1.5.21 Worker Protection

Worker Protection is implemented by Boeing SSFL EHS Health & Safety Programs and the SOP C-400 Series (Radiological Health). The SSFL Health & Safety Programs comply with the guidance of 29 CFR Part 1910, Occupational Health and Safety Standards and California Code of Regulations, Title 8, California Occupational Health and Safety Standards. The Health & Safety Programs also meet the intent of DOE 440.1A, Worker Protection Management for DOE Federal and Contractor Employees. Worker protection is the direct responsibility of line management and of every individual. Worker protection is ensured through training and other Boeing initiatives, discussed in section 4.1.5.6, including the management Behavior Based Safety (BBS) observation program. Worker protection oversight is performed by the Environmental Protection and Health & Safety groups of the Boeing SSFL EHS organization. At the program level, each facility performing work in support of the ETEC Closure program, including generating facilities and the RMHF, is required to implement ETEC program documents EPA-00060, Health & Safety Plan for Environmental Restoration Activities in Area IV, EPA-00061, ISMS Program Description and EPA-00062, 10CFR851 Compliance Plan. The plan flows down regulatory and company H&S guidance. It covers management and personnel responsibilities, hazard mitigation, training requirements, medical surveillance, health & safety procedures, radiological procedures and emergency response/action procedures.

4.1.6 Field Element Managers

DOE O 435.1, section I.1.F details the responsibilities of DOE Field Element Managers. Boeing SSFL management and staff will continue to work with the DOE-OAK Field Element Manager, the DOE ETEC site Waste Management Program Manager and other delegated DOE personnel to ensure that information and action required from Boeing SSFL is provided and tasks performed to contract requirements on a timely basis to assist the DOE in meeting its responsibilities.

4.1.7 Responsibilities of All Personnel

Boeing SSFL has in place a comprehensive system for identification, reporting and correction of problems, potential problems and near misses in compliance with DOE O 435.1. The system is based on full participation by EHS trained safety professionals, management and all Boeing SSFL employees. Personnel are provided the training, the tools and the awareness that safety is everyone's responsibility.

4.1.7.1 Problem Identification

All employees are responsible for identifying and reporting near miss and/or actual incidents per Boeing BPI-1906, Incident Notification, Investigation and Corrective Action. Emergency Incidents must be reported immediately to the Security Control Center and the affected departmental management. Incident reports are required to be electronically filed (including near misses) using the Boeing Incident Reporting System. The electronic reports are immediately transmitted to affected management. Corrective Action Investigation Reports (CAIR) are then prepared as part of the corrective action review.

In addition, all employees assigned to DOE programs are responsible for reviewing the reporting requirements and reporting incidents in accordance with DOE O 232.1A as implemented through document PMP-00001 and QA-00003.

4.1.7.2 Shutdown or Curtailment of Activities

Boeing BPI-1906, Incident Notification, Investigation and Corrective Action initiates an investigation process that includes management review and approval for resumption of work. The DOE O 232.1A occurrence reporting process includes making an evaluation of the root cause analysis and immediate corrective action prior to allowing resumption of work.

4.2 High-Level Waste Requirements

This section is not applicable, as the ETEC site has no high-level wastes.

4.3 Transuranic Waste Requirements

This section is not applicable, as the ETEC site has no Transuranic (TRU) wastes. All TRU and MTRU waste was repackaged into twenty 1A2 certified drums and transferred in Type B shipping casks to the DOE Hanford site in December, 2002 for final characterization and ultimate disposal at DOE-WIPP.

4.4 Low Level Waste Requirements

4.4.1 Definition of Low Level Waste

As discussed in DOE G 435.1, low level waste (LLW) is defined by what it is not. LLW is waste that is not:

- High Level Waste (defined in chapter II of DOE G 435.1);
- Spent Nuclear Fuel is defined in the Nuclear Waste Policy Act of 1982, as amended, as"...fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing.";
- Transuranic waste is defined in DOE G-435.1, Chapter III (see 4.3.1)]
- Byproduct waste as defined in Section 11e.(2) of the Atomic Energy Act of 1954, as amended, is ". . The tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.";
- Naturally occurring radioactive material, or NORM, is material that contains natural radioactivity and is not regulated by NRC under the Atomic Energy Act of 1954, as amended.

However, LLW containing small quantities of Byproduct or NORM may be disposed in DOE low-level waste disposal facilities provided that the requirements for disposal of low-level waste are met. All radioactive waste currently on-site at Boeing SSFL or anticipated to be generated during D&D of the remaining two facilities, except for that identified in Section 4.3, meets the definition of and is managed as LLW.

4.4.2 Management of Specific Wastes

LLW is managed in accordance with document PMP-00003, Radioactive Waste Management Plan. Flow down requirements for managing, tracking, characterization, packaging and shipping LLW are provided in EID-04494, RMHF Radioactive Materials Management and Waste Acceptance Criteria, EID-04486, Procedure for Using the RMHF Tracking System (RTS), EID-04360, Sampling Procedure for Containerized Materials and EID-04482, Packaging and Shipment of Radioactive Waste.

The LLW waste is typically concrete rubble, asphalt, steel, including rebar, ducting from ventilation systems, beams and other structural building debris; and secondary waste streams including filters, plastic and trash. The waste is segregated into several waste streams and by facility of origin. The waste inventory varies according to D&D and shipping activities. A detailed list of all packaged waste is maintained on the RMHF RTS system and is updated and archived weekly.

4.4.2.1 Mixed Low Level Waste

The hazardous component (of any mixed LLW) is managed in accordance with RCRA (40 CFR), TSCA as applicable, and State of California (CCR Title 22) regulations as implemented through the RMHF Part A Interim Status permit. Packaging and shipment of mixed-LLW for disposal at the EnergySolutions site is performed in accordance with EID-04495, Qualification and Shipment of LLW and MLLW to Envirocare. Treatment and/or disposal of MLLW at any other DOE-approved commercial facility is performed in accordance with EID-04493, Procedure for Packaging & Shipping Radioactive Materials, to ensure compliance with receiving site acceptance criteria and host state regulations. The MLLW waste streams on-site pending final characterization, treatment and/or shipment for off-site treatment and/or disposal are identified in DOE 95-W-305/5400.2.1.3.4 (site STP) and its periodic updates.

4.4.2.2 TSCA-Regulated Waste

The ETEC site is well characterized. All new waste streams will be analyzed in accordance with EID-04487 to fully characterize potential hazardous components.

4.4.2.3 Accelerator-Produced Waste

This section is not applicable. The ETEC site does not manage any Accelerator-Produced waste.

4.4.2.4 Naturally Occurring Waste

This section is not applicable. The ETEC site does not manage any Naturally Occurring Radioactive Material.

4.4.3 Complex-Wide Low-Level Waste Management Program.

ETEC is an approved generator for disposal at the DOE-Hanford and the DOE-NTS disposal sites. ETEC project personnel participate in scheduled meetings with DOE and contractor disposal site contractor staffs to maintain currency with DOE complex-wide mission and guidance.

4.4.3.1 Mixed Low-Level Waste Management Program

MLLW is managed in accordance with the site treatment plan as described in DOE 95-W-305/5400.2.1.3.4 (STP). On a case by case basis, MLLW is treated and/or disposed of at the DOE approved EnergySolutions commercial site in Clive, Utah. ETEC personnel meet regularly with DOE-OAK Waste Management staff and with EnergySolutions personnel to ensure that MLLW is managed in compliance with all applicable regulations and in accordance with the EnergySolutions Waste Acceptance Criteria (available on their web site

at http://www.energysolutions.com/). On an as needed basis, DOE approval is obtained for treatment and disposal of MLLW at other DOE approved commercial disposal facilities.

4.4.3.2 Greater Than Class C

This section is not applicable. Boeing SSFL is not a NRC licensee and does not have material that would be classified as Greater than Class C.

4.4.3.3 Performance Assessment and Composite Analysis Maintenance

This section is not applicable.

4.4.4 Radioactive Waste Management Basis

The ETEC Closure program has in place the facilities, operations and documentation required to implement a comprehensive LLW (and MLLW) Radioactive Waste Management Basis incorporating physical and administrative controls to ensure the protection of workers, the public, and the environment. The LLW Radioactive Waste Management Basis is defined in document PMP-00003 that flows down from the overall program management plan, document PMP-00001, "ETEC Closure Program Management Plan."

4.4.4.1 Generators

As described in PMP-00003, the LLW Radioactive Waste Management Basis consists of two principal areas, waste certification and waste management. The LLW certification program incorporates thirteen internal documents that in total address all government, corporate and DOE approved LLW disposal site regulations and requirements. The LLW management program incorporates eleven additional internal documents that control general waste management operations. Table 1 (Table 4.3.4.1 from Appendix A of PMP-00003) lists these program guidance documents. Together, these documents ensure consistent application of program management, quality assurance, waste tracking, personnel training, safety, environmental protection and all other elements of the LLW radioactive waste management basis.

Table 1: LLW Waste Certification Program Plan (WCPP) and Waste Management Document Matrix

Document	
No.	**Title**
Waste Certification Program Plan (WCPP) Documents	
PMP-00001	Program Management Plan for ETEC Closure
PMP-00003	LLW Radioactive Waste Management Plan
QA-00001	Quality Assurance Program Plan for ETEC Closure
QA-00003	QA Inspection Requirements for RA Shipments
RPA-00091	Closure of ETEC Release Plan of Action
EID-04450	DOE-Site Restoration Training Plan
EID-04360	Sampling Procedure for Containerized Materials
EID-04482	Packaging and Shipment of Radioactive Material
EID-04486	Procedure for Using the RMHF Tracking System (RTS)
EID-04487	Sampling and Analysis Plan for Radioactive Wastes
EID-04489	Waste Containers Specification
RS-00011	Procedures for Surveys of Radioactive Shipments
RS-00012	Methods and Procedures for Radiological Monitoring
Waste Management Documents	
EID-04446	Process Hazard Analysis for the RMHF
EID-04451	On-Site Radioactive Materials Transfer Plan
EID-04452	Transportation Safety Document
EID-04361	Approved Waste Streams for NTS and Hanford
EID-04488	Waste Minimization & Pollution Prevention Awareness Plan
EID-04493	Procedure for Packaging & Shipping RA Materials
EID-04494	RA Materials Management Plan for the RMHF
EID-04495	Qualification & Shipping to Envirocare
None	RMHF Part A Interim Status Document

Waste management incorporates a system of checks and balances to ensure that all necessary controls are in place for safe operation. RMHF facility operations and management are under the SSFL Support Services group with support in key disciplines by personnel in the Health, Safety & Radiation Services, and Environmental Protection groups. The facility Health Physicist and other Radiation Safety personnel are responsible for facility posting, routine and special facility surveys, and maintenance of radiological instrumentation. Health & Safety personnel perform routine facility audits and provide support and input in planning new or unusual operations. Environmental Protection specialists provide support and guidance for compliance with mixed waste compliance. Independent overview by Quality Assurance further ensures each group is meeting their individual responsibilities for safe and compliant LLW management.

4.4.4.2 Treatment Facilities

Management of the hazardous component of the MLLW is in accordance with the RMHF Part A Interim Status Permit and the Operations Plan.

MLLW is managed in accordance with DOE/OAK Doc. No. 95-W-307/5400.2.1.3.4, "Site Treatment Plan for the Energy Technology Engineering Center Canoga Park, California," (STP) dated 10/95 and its periodic updates as mandated by the FFCAct. The STP identifies the planned schedule and actions for each waste stream relative to their proposed treatment and disposal. STP updates and periodic progress reports highlight accomplishments and any changes in the plans and schedules.

4.4.4.3 Storage Facilities

The "Final Hazard Categorization," per DOE STD-1027-92, Change 1, para 3.1.2, has been made for the RMHF. A hazard analysis was performed in accordance with DOE-STD-1027-92, Change 1, para 4.1.1 [reference: Boeing letter 2002RC04885, M. Lee to James James S. Hirahara, "Supplemental Information on Recategorization of Building 4022 of RMHF," dated 12/20/02. Updated calculations of facility inventories for Category 3 threshold quantities (TQs) yield a "sum of fractions" of 0.227 resulting in the RMHF being given a "Radiological Facility" status as opposed to the higher risk Nuclear Facility status. The RMHF Radioactive Material Tracking Sytsem (RTS) and document EID-04486 were upgraded as part of the 435.1 Implementation Plan to include an automatic flag for any increase in the radioactive material "sum of fractions" to ensure that the material in storage does not approach the "Radiological Facility" category limits.

A Safety Analysis / Process Hazard Analysis was also performed in accordance with the guidelines of DOE-EM-STD-5502-94 and is documented in EID-04446, "Safety Analysis Document (SAD) / Process Hazard Analysis (PHA) for RMHF Operations." The analysis identified ten hazards for review and concluded that the overall facility hazard category is "Low." Appendix summarizes the potential hazards, the individual initiating events, potential effect, protective action, and risk assessment. The RMHF was determined to have a "Low" risk classification rating based on the reference consequence rating levels and risk matrix.

4.4.4.4 Disposal Facilities

No LLW or MLLW is disposed of on site. Boeing SSFL is an approved generator for disposal of LLW at the DOE-Hanford and DOE-NTS disposal sites. On a case by case basis, MLLW is treated and/or disposed of at the DOE approved EnergySolutions commercial site in Clive, Utah. On an as needed basis, DOE approval is obtained for treatment and disposal of MLLW at other DOE approved commercial disposal facilities.

4.4.5 Contingency Actions

Any required contingency actions are implemented in accordance with document EID-04494, RMHF Radioactive Materials Management and Waste Acceptance Criteria based on the findings and criteria identified in document EID-04446, Safety Analysis Document (SAD) / Process Hazard Analysis (PHA) for RMHF. Other contingency actions may be required based on the findings of routine inspections by facility personnel, periodic QA surveillance audits, and audits by the DOE, DTSC or other government agencies.

4.4.5.1 Contingency Storage

Adequate spare capacity exists for all liquid LLW waste stored at the RMHF. Sufficient facility capacity exists to meet all contingency storage requirements.

4.4.5.2 Transfer Equipment

Non-hazardous radioactive water generated during facility operations is stored in a 1,800-gallon double-wall poly tank. Water can be transferred into or out of the tank via a portable 250-gallon poly tank. Radioactive water is transferred to a portable evaporator system on an as needed basis. During evaporator operations, water level is automatically maintained with over-temperature and high-water shutdown controls. In the event of an evaporator overflow, excess water is captured in an integrated containment. Evaporator conditions are monitored routinely during operation.

4.4.6 Corrective Actions

Boeing implements an on-line Incident Reporting System (IRS) to report and disseminate incident information, and to track corrective action to completion. Incidents that invoke DOE O 232.1A initiate a parallel process through the ORPS root cause and corrective action review process implemented through QA-00003.

4.4.6.1 Order Compliance

The Boeing on-line IRS system includes tracking of corrective actions until closure. Incidents that invoke DOE O 232.1A initiate a parallel process through the ORPS root cause and corrective action review process.

4.4.6.2 Operations Curtailment

The DOE O 232.1A review process incorporate steps to ensure operations are curtailed or shutdown as appropriate to the incident until the root cause has been identified and the corrective action completed. ETEC management is responsible to curtail operations until it can be assured that it is safe and prudent to resume operations.

4.4.7 Waste Acceptance:

Remediation of former nuclear facilities is in its final stages at SSFL. There are currently only two facilities (Building 4024 and the RMHF) with any residual radiological contamination and/or activation. A project (facility) D&D Plan will be prepared for each significant activity prior to initiating D&D tasks. The D&D plan delineates the basic plan and methodologies to be used during the D&D process. It identifies the resources (personnel, training, technical specialists, equipment, materials, etc.) required to support D&D. It identifies key facility systems (i.e., HEPA, fire protection) that must be protected and maintained during D&D and equipment categories to be surplused and materials to be recycled. It specifies the types and estimated volumes of waste streams to be generated including packaging and special handling requirements and/or treatment and disposal (i.e., mixed wastes and TRU) issues. LLW and any MLLW generated from D&D of the facilities will be managed in accordance with documents PMP-00001, PMP-00003 (including the sub-tier documents identified in Table 1 of section 4.4.4), the D&D Plan and existing or new detailed task specific procedures.

4.4.7.1 Technical and Administrative

PMP-00003 and its sub-tier documents will be revised as required to ensure incorporation of the latest federal, state and local agency regulations; and DOE-approved waste disposal sites. Documentation will be checked against DOE O 435.1 criteria to ensure that: (a) activities and/or concentrations of radionuclides, (b) waste forms and container requirements, (c) prohibited materials and container limitations, and (d) verification of defense waste status are properly addressed. No exception requests are anticipated to be required, but will be reviewed during D&D planning process.

4.4.7.2 Evaluation and Acceptance

As part of the DOE O435.1 implementation plan, document EID-04758, "Radioactive Waste Certification Plan (WCP) for ETEC Facilities," was prepared to address D&D operations and reflects RMHF WAC requirements incorporated into the latest revision of EID-04494. As the RMHF will be both the generating and the accepting facility during its D&D, RMHF WAC requirements of EID-04494 will be imposed on the RMHF facility D&D plan. Non-conforming waste is not expected since the facilities are generally well characterized and any new LLW waste would be from the same source as LLW waste in storage. However, current programmatic and QA documents incorporate the necessary administrative controls to identify and handle non-conforming waste on a case-by-case basis.

4.4.8 Waste Generation Planning

Waste generation planning is a major aspect of D&D planning. D&D of facilities, the only source of LLW generation, is performed in accordance with document PMP-00001 and PMP-00003 and the facility or project specific D&D Plan. As discussed in 4.4.7 the facility D&D Plan documents the facility specifics for waste generation planning. As required by document

PMP-00001 appropriate levels of planning to meet contract requirements will be addressed. As required, existing documents will be revised and/or new documents prepared to direct the specific D&D activities.

4.4.8.1 Life-Cycle Planning

The project specific procedures will implement the specific requirements of the facility and/or project specific D&D Plan (see 4.1.5.9 and 4.4.7) to ensure that waste management life-cycle planning is incorporated into the D&D process. All current and future D&D projects are well characterized and the waste streams are expected to be essentially the same as existing and/or past waste streams. Life-cycle planning for those D&D projects should, therefore, closely parallel that of existing projects.

4.4.8.2 Waste With No Identified Path to Disposal

There is currently no LLW or MLLW on site without an identified path to disposal. All LLW generated at the site is disposed of at approved DOE disposal sites, either DOE-Hanford, DOE-NTS for LLW or Energy Solutions of Clive, Utah for LLW and MLLW. On a case by case basis, small quantities of MLLW may be sent to alternate DOE-approved treatment and disposal sites. Based on comprehensive process knowledge and historical documentation of activities at the remaining and former facilities, all anticipated LLW and potential MLLW will be of the same general waste stream characteristics as that of the current waste streams. All known potential waste at RMHF will be generated based on activities that supported operations at or D&D of former nuclear facilities.

4.4.9 Waste Characterization

Characterization is performed using a combination of process knowledge, based on historical documentation and radiological and chemical analysis in accordance with document EID-04487. Rigid requirements for tracking waste from the point of generation through characterization to final packaging are identified in ETEC document EID-04486. Data include physical and chemical characteristics; volume of the waste package contents by component; tare and gross weight of the package; activity by isotope; generation information (including facility, process, procedure, date); and all other available information that could aid in characterization/certification of the waste.

The major portion of all waste streams from D&D of the two remaining facilities will be construction debris, principally concrete and steel. Based on D&D of the RIHL and the current status of Building 4059 D&D (all non-structural equipment and materials have been removed, characterized, packaged and disposed of at the DOE-Hanford or DOE-NTS disposal sites) the waste forms are well known and easily managed. Characterization of the remaining waste streams from the RMHF is expected to be routine based on existing process knowledge and D&D of other site facilities.

The facility D&D Plans (see sections 4.4.7 and 4.4.8) will address all areas of waste characterization. The set of Waste Certification and Management procedures identified in

Table 1 will form the basis for waste management. Any new procedures required will be identified in the facility D&D Plan.

4.4.9.1 Data Quality Objectives

Radiological and chemical analyses of LLW wastes are performed in accordance with document EID-04487. EID-04487 incorporates a statistical sampling basis for determining acceptable levels of uncertainty. It specifies a process to be followed to evaluate individual waste streams and define the minimum number of samples and the sampling basis to achieve the desired level of confidence. Analytical results are reviewed to determine whether the required level of confidence has been achieved or whether additional sampling and analysis is required. Independent Boeing EHS Radiation Safety and Environmental Protection specialists respectively, review radiological and chemical analyses and their results. Oversight of all data collection and documentation is provided by QA surveillance and audits.

4.4.9.2 Minimum Waste Characterization

Minimum characterization data are provided through the RMHF electronic data tracking system (RTS) as implemented by document EID-4486. The RTS database includes all required minimum characterization parameters including: (a) physical and chemical descriptions and characteristics; (b) waste component volume by description (i.e., steel, copper, rubber, plastic) including void volume filler and/or stabilizing material; (c) container tare and gross weights; (d) concentrations by isotope of all major radionuclides; (e) characterization data (including process knowledge from generating facility documentation and radiological and chemical analytical results); (f) generating facility information; (g) chronological history of waste packaging and (h) all other available information needed to satisfy minimum waste characterization criteria. Data requirements are based on DOE approved disposal site WAC as identified in documents EID-04482 and EID-04495.

4.4.10 Waste Certification

The SSFL LLW Certification Program is implemented through PMP-00003 and the associated documents identified in Table 1 of section 4.4.4 (Appendix A of PMP-00003).

4.4.10.1 Certification Program

The objectives of the Certification Program are to comply with Federal, State, and Local government regulations; Boeing corporate policies and DOE disposal site WAC related to the generation, storage, shipment and disposal of LLW and MLLW. The program is designed to certify radioactive waste destined for disposal at any site, but it addresses specifically the DOE-NTS, DOE-Hanford and the EnergySolutions (Clive, Utah) commercial sites waste acceptance criteria. The WCO is identified in RPA-00091, Closure of ETEC Release Plan of Action and QA/Certification documentation requirements are specified in QA-00002. All other requirements are in the documents of Appendix A, PMP-00003. The ETEC waste certification program has been audited and approved by DOE-Hanford and DOE-NTS site audit teams. ETEC is on the approved generator lists of DOE-NTS and DOE-Hanford

disposal sites. On a case by case basis, LLW is shipped to and MLLW is treated at and/or disposed of at the DOE approved EnergySolutions (Clive, Utah) commercial site.

4.4.10.2 Certification Before Transfer

Certification currently may be performed at the generating facility or may require completion at the RMHF and is performed in accordance with PMP-00003 using the flow process of EID-04494. As part of the DOE O 435.1 implementation plan, a generic generator Waste Certification Plan, EID-04758, and RMHF WAC, incorporated into EID-04494, were implemented to ensure waste meets RMHF WAC prior to transfer to the RMHF.

4.4.10.3 Maintaining Certification

PMP-00003 incorporates all programmatic and quality assurance requirements necessary to maintain certification of previously certified waste current stored at the RMHF future waste that will be generated at the remaining facilities scheduled for D&D. The RMHF RTS, facility logbooks and waste container lot followers will continue to be utilized to ensure tractability and completeness of certification data. Facility D&D Plans will flow down and incorporate certification requirements from PMP-00003 and other requirement documents.

4.4.11 Waste Transfer

Management authority for LLW is documented in EID-04494. LLW (including MLLW) data are maintained electronically in accordance with EID-04486.

4.4.11.1 Authorization

Criteria and authorization to transfer waste to the RMHF (a permitted Treatment and Storage facility) are implemented through the RMHF Operations Plan and EID-04494. The RMHF WAC will establish the required controls and authorization to fully implement DOE O 435.1 criteria.

4.4.11.2 Data

The three primary components of the RMHF LLW operating records are the RTS, the facility logbook and the individual waste package (container) tracking documents (commonly referred to as “Lot Followers”). RTS data are maintained electronically in accordance with EID-04486. Data include container traceability, waste characterization, any treatment performed and both on-site and off-site shipment records as identified (process & forms) in documents EID-04482 and EID-04495.

4.4.12 Packaging and Transportation

ETEC is currently on the approved generator list of both the DOE-Hanford and DOE-NTS sites. ETEC also ships LLW and MLLW to the DOE approved EnergySolutions commercial disposal site at Clive, Utah on a case-by-case authorization basis by the disposal site. On an as needed basis, DOE approval is obtained to send other waste streams to appropriate commercial sites. As discussed in section 4.1.5.11 ETEC will not utilize the DOE Automated Transportation Management System (ATMS). It is not cost effective for DOE related shipments (< 1% of Boeing freight) and does not apply to general Boeing shipments. Boeing hazardous material transportation specialists will take equivalent precautions to ensure that shipment of hazardous and/or radioactive materials are consigned to qualified carriers at competitive prices. An exemption request (following the guidelines of DOE O 414.1A), included in Appendix was submitted as part of the initial release of this DOE O 435.1 Implementation Plan.

4.4.12.1 Packaging

LLW container selection, identification, packaging and interim storage prior to shipment is conducted in accordance with EID-04482 or EID-04495 using containers (Type III & IV steel boxes) purchased to the requirements of EID-04489, Procurement Specification for Type-1 Industrial Packaging (IP-1). As appropriate for smaller waste volumes, standard 55-gal. IP2 drums are utilized. Bulk waste is shipped to either DOE-Hanford or DOE-NTS in “burrito wraps” (90-mil plastic wraps with closures) inside 12 to 15-yard covered roll off containers in accordance with the respective disposal site WAC. Bulk waste (e.g. large concrete and/or steel blocks) may also be individually double wrapped and shipped on flat-bed trucks to the disposal sites in accordance with disposal site WAC.

Documents EID-04482 and EID-04495 include rigorous QA inspection and verification processes of waste packages, their contents and documentation. All packages and their documentation are reviewed and signed off by the ETEC program WCO prior to shipment for disposal.

4.4.12.2 Transportation

LLW is staged for shipment in truck-load to the extent possible. Containerized waste, IP-2 boxes and drums, is shipped in enclosed vans (~40,000-lb. loads). Bulk waste, as discussed in 4.5.10.1, is shipped in standard size roll off containers or on tarped flat bed trailers.

Waste minimization is emphasized and conducted in compliance with EID-04488. It is also identified as a policy in EID-04482.

4.4.13 Site Evaluation and Facility Design

D&D, the only source of LLW, is in its final stages at the ETEC site. Existing facilities have been evaluated and their design features determined to be adequate to manage all existing and planned future LLW and MLLW. No new or significant modifications to existing facilities are planned as part of the ETEC Closure program. Adequate administrative controls are in

place through the RMHF Operations Plan and physical design features exist to provide separation and maintain control of LLW and MLLW waste streams.

4.4.13.1 Site Evaluation

Many ETEC Closure activities, including radiological D&D and other building demolition, are currently on hold, pending completion of an Area IV-wide Environmental Impact Statement (EIS).

4.4.13.2 Low Level Waste Treatment & Storage Facility Design

No new TSD facilities will be constructed as part of the ETEC Site Closure Program. The existing Treatment and Storage facility (RMHF) is in compliance with listed DOE, EPA and State of California requirements as documented in the RMHF Operations Plan.

4.4.13.3 Low Level Waste Disposal Facility Design

This section is not applicable. No LLW is disposed of on-site.

4.4.14 Storage and Staging

LLW storage and staging is performed in accordance with document EID-04482 and MLLW storage is performed in accordance with the RMHF Operations Plan. All packaged LLW is normally stored, staged and shipped from the RMHF for off-site disposal. On a project by project basis, bulk LLW consisting of concrete rubble or steel structure may be staged and shipped from the generating facility directly to the approved disposal site. All requirements, constraints, administrative controls and QA oversight used for shipments from the RMHF will be imposed on direct shipments through the project D&D Plan.

All waste that is received from generating facilities is moved to the “Waste Receiving Area” of the RMHF. The packages are placed on administrative hold until all required information is entered into the RMHF RTS database; the packages are visually inspected and tagged; all documentation is reviewed and the packaged waste is verified to be acceptable for management at the RMHF.

4.4.14.1 Storage Prohibitions

Waste prohibitions are defined in document EID-04482 and EID-04495. Reactive, identified ion-exchange resins, pyrophoric, pressure sensitive and other types of potentially dangerous waste are strictly prohibited from being packaged in the approved waste streams. No prohibited wastes are currently in storage or expected to be generated during the balance of the ETEC Closure D&D program. The waste management QA oversight, procedures and forms of EID-04482 and EID-04495 are designed to ensure that prohibited materials and articles do not enter the LLW waste streams. Any identified prohibited waste will be

reviewed on a case-by-case basis and managed under authorization of a task specific procedure.

4.4.14.2 Storage Limit

All LLW is shipped off-site and disposed of as soon as practical within DOE funding limitations. All mixed-LLW is managed in accordance with the site DOE No. 95-W-307/5400.2.1.3.4, "Site Treatment Plan for the Energy Technology Engineering Center Canoga Park, California," (STP) and its periodic updates in accordance with the FFCAct. As part of the implementation plan for DOE O 435.1, document PMP-00003 will be revised to include requirements for a one-year LLW storage limit and shipment for off-site disposal within the one-year limit within program constraints. The RMHF RTS flags any waste that is approaching the one-year storage limit imposed under section IV.N.2 of DOE O 435.1.

All current and planned LLW is from D&D of former radiological facilities and is predominately construction debris (concrete and steel). None of the waste is currently in "storage for decay" and none is anticipated in the future. All currently stored and planned LLW has a path to disposal. Current and anticipated MLLW constitutes a small fraction of LLW is managed (stored, treated and shipped for off-site treatment and/or disposal) in accordance with the STP. Anticipate storage beyond the one-year limit (for characterization and treatment) is identified in the STP. Any special cases (e.g., California only MLLW) requiring storage beyond the one-year limit will be justified and approval requested from the DOE Field Element or their designee on an as needed basis.

4.4.14.3 Storage Integrity

All LLW and MLLW is managed and stored to protect the integrity of the waste and maintain ALARA standards in accordance with document PMP-00003 and SOP C-400, Radiological Health. All waste is stored in designated areas within controlled radiological facilities. LLW is segregated from MLLW using administrative controls and stored in designated areas in accordance with the RMHF Operations Plan.
of section 4.1.3 shows the general facility layout. LLW may be stored in the covered shed and yard adjacent to Building 4075. LLW may also be stored and pre-staged for shipment in Building 4022 and the adjacent yards. The "Waste Receiving Area" is a "hold area" where all waste received from generating facilities is placed on administrative hold until all packages and documentation are reviewed and verified to be acceptable for management at the RMHF.

MLLW may be stored in Building 4621 and the adjacent yard that are separated from the LLW storage area by a gated fence.

4.4.14.4 Waste Characterization for Storage

Waste characterization is performed and records maintained in compliance with documents EID-04486 and EID-04482. Data are available in real time on the RMHF RTS dedicated terminal and at other computers at Boeing SSFL through the company internal web-site. The WCO maintains the ETEC Closure program waste management QA files. The WCO transfers the entire data package for each shipment (and each container/package in the shipment) into the program QA file located in Building 1436 once the shipment reaches the designated disposal site. Hard copies of waste management forms (i.e., radiological survey forms, hazardous waste manifests, DOT proper shipping papers, etc.) are maintained by EHS in Building 1436.

4.4.14.5 Container Inspection

Document EID-04482 requires QA inspection of containers upon receipt (new), during the loading process, at the completion of the loading process, during package certification and at the time of loading on the transport vehicle. Upon receipt, all new containers are inspected for damage and manufacture's identification. At that time a unique serial number is painted on the container and entered into the RMHF RTS. All future container management, including inspections, is tracked by the RMHF RTS identification number.

During loading of the waste container and prior to final closure physical condition, verification of contents and evidence of improper loading is documented on waste container travelers (lot followers). All packaged waste received from generating facilities is placed on administrative hold, inspected, and documentation is reviewed prior to acceptance for management at the RMHF. All disposal-site required identification is added during staging, waste container closures are secured, tamper-resistant seals are applied and a final inspection using a detailed checklist is performed by the WCO prior to shipment for disposal. A "hold tag" is applied by the WCO to any container that has physical damage (dents, punctures, buckling, split seams, etc.), suspect contents, and incomplete documentation (inadequate or unclear description of contents, insufficient void filler) or otherwise does not meet shipping criteria.

Maintenance is performed on containers on an as needed basis. Containers and packaged waste are stored indoors to the degree possible. Weather related problems are minimal due to the generally mild climate of the area. Containers are spot painted, as required, during pre-shipment staging and inspection. The facility Health Physicist performs routine radiological surveys at the RMHF. These routine surveys include checking for degradation of radiological information tags [listing surface and 1-meter radiation levels, surface contamination levels (all containers stored at the RMHF are required to be externally "clean"), and major isotopes and their concentrations], smear surveys for surface contamination and dosimetry readings. Any physical damage is noted and reported to facility operations personnel.

MLLW goes through the same process as LLW. In addition, routine inspection of MLLW containers is also performed weekly as required by document EID-06142, RMHF Maintenance & Surveillance and by the RMHF Operations Plan. Appendix shows typical MLLW container inspection forms.

4.4.14.6 Storage Management

All LLW and mixed LLW storage is segregated in accordance with the RMHF Operations Plan. Areas are clearly marked for storage of LLW and MLLW within the RMHF compound. Locations of stored waste are entered into the RTS system to ensure administrative overview. **Error! Reference source not found.** of 4.1.3 shows a general layout of the RMHF and the designated storage areas.

4.4.14.7 Staging

ETEC has historically used the term "staging" to describe the pre-shipment activities associated with final container inspection; application of disposal site DOT labeling and marking; and final shipping document review. A review of current practices determined that there is no obvious cost benefit to the program to distinguish between "staged" or "stored" waste as defined by O 435.1 since the same waste management requirements and levels of QA are applied to both cases. Where applicable, "staging" of waste will be distinguished from "storing" waste for the purpose of determining the one-year waste storage limit.

LLW is managed in accordance with document EID-04494 that requires final staging for shipment, including radiological measurements and container inspections, to be performed within 48 hours of off-site shipment. Packaging of LLW at generator facilities and management "staging" as defined by DOE O 435.1, storage and staging for shipment, of LLW at the RMHF are performed under the same procedures and controls.

MLLW is managed in accordance with the RMHF Operations Plan and the STP. The process of procedure preparation, chemical and radiological characterization, treatment and off-site shipment generally exceeds 90-days for MLLW management. Where applicable, "staging" as defined by DOE O 435.1 will be utilized and documented.

4.4.15 Treatment

Stabilization of LLW will be performed as necessary to meet disposal site performance objectives and will be in accordance with requirements of EID-04482. All LLW is basically construction debris (principally concrete rubble, metal building materials, and associated misc. debris) and is identified under one "Waste Profile" each at the DOE-Hanford and DOE-disposal sites. Any material/waste that is prohibited under EID-04482 or the respective disposal site Waste Profile is segregated out. All liquids are stabilization prior to packaging.

Any stabilization or other treatment of MLLW will be in accordance with the requirements of the RMHF Part A Interim Status Permit, the Operations Plan, the site STP and EID-04495. All treatment is performed in close coordination and with the approval of the designated disposal site. In some cases, MLLW is shipped to EnergySolutions, the DOE approved commercial disposal site at Clive, Utah for final treatment and disposal. All wastes are characterized by Boeing SSFL; profiles established and approved by EnergySolutions; and

samples tested and verified by EnergySolutions to meet the approved profile prior to shipment of the MLLW to EnergySolutions for final treatment and disposal.

4.4.16 Disposal

This section is not applicable. No LLW or MLLW is disposed of on-site.

4.4.17 Closure

Under the guidelines of the state of California, Boeing submitted a closure plan for RMHF to the California DTSC for review. Approval of the plan is pending.

4.4.18 Monitoring

Facility monitoring is performed in accordance with SOP 400, Radiological Health and ETEC document PMP-00003.

4.4.18.1 All Waste Facilities

Routine monitoring and inspection of the RMHF is required by document EID-06142 and by the RMHF Part B Operations Plan. Inspection frequencies for various category items are based on the level of impact of the degradation of the system being inspected. Tables 1 through 4 of EID-06142 (examples illustrated in Appendix) detail the systems to be inspected, the frequency of inspections and the inspection criteria.

4.4.18.2 Liquid Waste Storage Facilities

Routine inspection of the RMHF, including any liquid-containing waste containers is required by document EID-06142. Any containerized liquid-containing waste is stored in double containment. Analysis of liquid-containing waste is performed in accordance with EID-04487 prior to and following stabilization to verify treatment effectiveness prior to final packaging for off-site shipment for disposal.

4.4.18.3 Disposal Facilities

This section is not applicable. No LLW or MLLW is disposed of on-site.

Appendix 1: DOE Exemption Request

DOE Order 435.1 Exemption Request Form		
Requestor: Boeing Canoga Park	Request No.:ETEC-00-01	Date 10/10/00
Title: Exemption from the DOE Automated Transportation Management System (ATMS)		

Item	Description	Requested Information
1	Site / Facility	Boeing Canoga Park SSFL, ETEC Closure Program
2	Identification & Justification of Risks	Boeing "Shared Services" manages off-site transportation for all Boeing Southern California facilities. DOE hazardous material shipment comprise <1% of Boeing Canoga Park shipments. It is not cost effective to superimpose the ATMS on top of Boeing shipping policies. Boeing uses equivalent methods to ensure hazardous and/or radioactive materials are consigned to qualified carriers at competitive prices. The Boeing Canoga Park SHEA Transportation Specialist under the guidelines of SOP C-404 approves all such shipments and carriers. Boeing will continue to select carriers from the DOE approved carriers list except when available equipment does not meet material containment requirements or when costs are excessive and non-ATMS carriers with equivalent qualifications are available.
3	Benefits	The existing Boeing policies will provide an equivalent level of safety at a substantial cost savings to DOE
4	Duration & Compliance Date	Indefinite
5	Other Data	NA
6	ES&H Exemptions	NA
7a	Special Circumstances	NA
7a1	Conflicts	NA
7a2	Unnecessary	NA
7a3	Benefits	NA
7a4	Compensations	NA
7a5	Not Considered	NA
7b	Adequate Protection	Boeing transportation specialists will select carriers with demonstrated safety records and expertise and experience with the designated loads to ensure adequate protection to the environment and employee and the public health & safety.
7c	Alternate Actions	NA

I.1.E. (11) (refer to section 4.1.5.11): The SSFL site will not utilize the DOE Automated Transportation Management System (ATMS). It is not cost effective for DOE related shipments (< 1% of Boeing Canoga Park freight) and does not apply to general Boeing shipments. The above Exemption Request is submitted as part of this DOE 435.1 Implementation Plan.

Appendix 2: RMHF Process Hazard Analysis Risk Assessment

(Table 4 of EID-04446)

Sheet 1 of 4

Potential Hazard	Initiating Event	Potential Effect	Protective Action	Risk Assessment Probability	Consequence	Risk
1. Radiation exposure above occupational limit	Improper storage or handling of radioactive material/waste	Possible cancer	Training, procedures shielding, and radiation alarms	Extremely low	Low	Negligible
	Prolonged exposure to radioactive Materials		Procedures, monitoring, posting, film badges, and dosimeters	Low	Low	Negligible
2. Inhalation of airborne radioactive materials above occupational limit	Release of radioactive particles in air during handling or decontamination	Possible cancer	Breathing zone and continuous air sampling, training, procedures, protective clothing, respiratory devices	Low	Low	Negligible
	Ventilation system failure		Automatic backup blower and alarm	Extremely low	Low	Negligible
	Leakage in evaporator system		Evaporator automatic shutdown	Extremely low	Low	Negligible
	Fire involving radioactive materials		Smoke detectors, procedures, sprinklers, extinguishers	Extremely low	Low	Negligible

Sheet 2 of 4

Potential Hazard	Initiating Event	Potential Effect	Protective Action	Risk Assessment Probability	Consequence	Risk
3. Skin contamination with radioactive material	Transfer of radioactive water into 8,000 gallon tank	Skin damage or skin cancer	Procedures, training, and protective clothing	Med	Low	Low
	Leakage of container or vault		Procedures, training, and protective clothing	Med	Low	Low
	Skin injury while working in contaminated areas		Procedures, training, and protective clothing	Med	Low	Low
	Evaporator over flow or leak		Overflow line or leakage to sump tank	Med	Low	Low
	Accidental spillage of liquid waste		Procedures, training, and protective clothing	Med	Low	Low
4. Ingestion of radioactive material	Smoking or eating in radioactive area	Possible cancer	Procedures and training	Low	Low	Negligible
5. Injury from operation of equipment	Operation of size reduction equipment	Injury to personnel	Procedures, training, and monitoring	Low	Low	Negligible
6. Heat/cold/work stress	Working conditions	Minor occupational illness	Procedures and monitoring	Low	Low	Negligible

Sheet 3 of 4

Potential Hazard	Initiating Event	Potential Effect	Protective Action	Risk Assessment		
				Probability	Consequence	Risk
7. Reduction of hearing ability	Noise	Injury to personnel	Monitoring and hearing protection if required	Low	Low	Negligible
8. Burns to personnel	Overflow of evaporator	Injury to personnel	Overflow line to sump tank, procedures	Low	Low	Negligible
	Electrical shorts/arcing		Procedures			
9. Fire	Overloading circuits	Injury to personnel	Transformer overtemp alarm, fire extinguishers	Low	Low	Negligible
	Ignition of combustible material	Injury to personnel	Smoke detectors, procedures, sprinkler systems, and extinguishers	Low	Low	Negligible
	Electrical shorts/arcing		Smoke detectors, procedures, sprinkler systems, and extinguishers	Low	Low	Negligible
10. Off-site Contamination	Fire involving radioactive materials	Insignificant impact on environment	Fire extinguishing equipment and perimeter sprinklers	Med	Extremely Low	Negligible

Sheet 4 of 4

Potential Hazard	Initiating Event	Potential Effect	Protective Action	Risk Assessment		
				Probability	Consequence	Risk
10. Off-site Contamination (continued)	Failure of HEPA stack filter	Insignificant impact on environment	Stack radioactive exhaust monitor and alarm, and periodic filter checks	Med	Extremely Low	Negligible
	Overflow of RMHF catch basin		Manual level checks during rainy periods and emergency pumps, hoses. Overflow alarm	Med	Extremely Low	Negligible
	Spillage or accident during on-site or off-site transfer of radioactive material		Procedures, training, regulations and on-site emergency response team	Med	Extremely Low	Negligible
	Pumping radioactive water from RMHF catch basin to SSFL holding pond		Radiation alarm for RMHF catch basin and monthly sampling	Med	Extremely Low	Negligible
	HEPA filter ducting leak		Negative pressure maintained in duct	Med	Extremely Low	Negligible
	Insufficient decontamination of personnel		Decontamination procedures and monitoring	Low	Extremely Low	Negligible
	Incorrect disposal of waste off-site		Surveying and documentation	Low	Extremely Low	Negligible

Appendix 3: Examples RMHF Inspection Forms

RMHF WASTE CONTAINER AND WEEKLY INSPECTION FORM

Date of Inspection:_____ Time of Inspection:_____

Inspector's Name:_____ Inspector's Signature:_____

All "yes" answers mean no discrepancy exists. A "no" answer to any question means a discrepancy exists and requires immediate corrective action. Notify the area manager of the discrepancy. The area manager must co-sign the inspection checklist whenever a discrepancy exists. Indicate required corrective action and completion date. Copies of any such checklists shall be forwarded to the Environmental Control and Energy Conservation group, Dept 543, 055-T485.

EXAMPLE

BUILDING 21

CONTAINERS

	YES	NO
1. Are all containers free of leaks and residues?	_____	_____
2. Are drum bung lids securely fastened?	_____	_____
4. Are 642-J form attached to all items and in plastic?	_____	_____
5. Are 642-J forms completely filled out?	_____	_____
6. Is access to containers unobstructed?	_____	_____
7. Are container areas free of standing liquids?	_____	_____
8. Total number of containers inspected_____		

EMERGENCY EQUIPMENT

	YES	NO
1. Is emergency telephone operational?	_____	_____
2. Is public address system operational?	_____	_____
3. Is safety shower operational?	_____	_____
4. Is emergency eyewash operational?	_____	_____
5. ABC fire extinguisher last certified on_____		

REQUIRED CORECTIVE ACTON AND COMPLETION DATE:_____

_____

_____

NOTE: Sheet 1 of 3, sheets 2 and 3 are repeat inspections for Bldgs.4 022, 4075 and 4621

RMHF SPILL CONTROL MONTHLY INSPECTION CHECKLIST

Date of Inspection: _____ Time of Inspection: _____
Inspector's Name: _____ Inspector's Signature: _____

Any missing equipment must be replaced> Multiple items must be inventoried to ensure the numbers are available Spill control equipment must be retained in area within each building.

BUILDING 621

Push Broom (1) ___
Absorbent (1) ___
Face mask (2) ___
Paper Towels (1 Bundle) ___
5-Gallon Buckets (5) ___
Plastic Garbage Bags (1 Box) ___

Shovel (1) ___
Safety Gloves (2 Pair) ___
Whisk Broom (1) ___
Mop (1) ___
Dust Pan (1) ___

BUILDING 22

Push Broom (1) ___
Absorbent (1) ___
Face mask (2) ___
Paper Towels (1 Bundle) ___
5-Gallon Buckets (2) ___
Plastic Garbage Bags (1 Box) ___

Shovel (1) ___
Safety Gloves (2 Pair) ___
Whisk Broom (1) ___
Mop (1) ___
Dust Pan (1) ___

EXAMPLE

RMHF QUARTERLY SURVEILLANCE CHECK LIST

Surveyor: _____ **Date:** _____

Facility Inspection (✓ = OK, = Action required, see comments section)

Facility Grounds and Building: Check for adequate lighting, good houskeeping, and no unsafe conditions.

Facility Grounds: Main Area _____ T075 Enclosure _____ T621 Enclosure _____

Buildings: T021 _____ T022 _____ T034 _____ T044 _____
T075 _____ T621 _____ T665 _____ T668 _____

Ventilation, heating, cooling systems operational
Buildings: T021 _____ T022 _____ T034 _____ T044 _____

Safety Showers and Eye Washes operational
Buildings: T021 _____ T044 _____

Restrooms sanitary, no leaking fixtures
Buildings: T021 _____ T034 _____ T044 _____

Emergency generator performance check satisfactory: Yes___ No___
Emergency telephones operational: Yes___ No___
Public address system operational, speakers clear: Yes___ No___
HEPA exhaust blowers operating: Yes___ No___
T021 water pumps operational and alarm status clear: Yes___ No___
T022 water pumps operational and alarm status clear: Yes___ No___
RMHF pond pumps operational and alarm status clear: Yes___ No___
Air sample pumps operational and alarm status clear: Yes___ No___
Flammables and chemicals properly stored in identified cabinets: Yes___ No___

COMMENTS

_____
_____
_____
_____
_____

Surveyor _____ Facility Manager _____

EXAMPLE

Prod/251-01 DOE\telec\draft 3 figs\FIGVIII_8.h7\05/03/99 SS

Appendix 4: List of Acronyms

AEC	Atomic Energy Commission
AI	Atomics International
AK	Acceptable Knowledge
ALARA	As Low As Reasonably Achievable
ATMS	DOE Automated Transportation Management System
CAB	Corrective Action Board
CAIR	Corrective Action Investigation Report
CAM	Continuous Air Monitor filter
CCR	California Code of Regulations
C of C	Certificate of Compliance
CFR	Code of Federal Regulations
CH	Contact Handled Transuranic
CT	Computed Tomography
D&D	Decontamination, Decommissioning and/or Dismantlement
DOE-OAK	Department of Energy-Oakland Operations Office
DTSC	State of California, Department of Toxic Substances
EMI	DOE Environmental Management Integration team
ERAP	Emergency Readiness Assurance Plan
ESG	Energy Systems Group
ETEC	Energy Technology Engineering Center
FFCAct	Federal Facilities Compliance Act
GOCO	DOE owned, company operated
HAZWOPER	– 40CFR (24-hr hazardous worker training/certification course)
ISO	International Organization of Standardization
JEMS	Joint Employees & Management Safety
LLW	Low Level Radioactive waste
LLTR	Large Leak Test Rig (later designation of Building 4059)
MLLW	mixed-LLW waste
MSDS	Material Safety Data Sheets
MTRU	mixed-TRU waste
NAA	North American Aviation
NORM	Naturally Occurring Radioactive Material
ORPS	Occurrence Reporting and Processing System
POL	Boeing Policies and Procedures
QA	Quality Assurance
RI	Rockwell International
RIHL	Rockwell International Hot Laboratory (Building 4020)
NMDF	Nuclear Materials Development Facility (Building 4055)
RH	Remote Handled Transuranics
RMHF	Radioactive Materials Handling Facility
RTS	RMHF Radioactive Materials Tracking System
SAR	Safety Analysis Report
SHEA	Safety, Health & Environmental Affairs
SNAP	System for Nuclear Auxiliary Power
SOP	Canoga Park System of Procedures
SQS	Small Quantity Site SSFL Santa Susana Field Laboratory
STOP	Safety Training Observation Program
STP	Site Treatment Plan for the Energy Technology Engineering Center Canoga Park, CA

TIC	Technical Information Center
TQ	threshold quantities
TRU	transuranic
TSCA	Toxic Substance Control Act
WAC	Waste Acceptance Criteria
WIPP	Waste Isolation Pilot Plant
WIPP WAC	Waste Acceptance Criteria for the Waste Isolation Pilot Plant (WIPP)