LOCKHEED MARTIN

ORNL/ER-406

**ENVIRONMENTAL
RESTORATION
PROGRAM**

**Final Deactivation Report
on the Tritium Target Facility,
Building 7025,
at Oak Ridge National Laboratory,
Oak Ridge, Tennessee**

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LOCKHEED MARTIN ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

ENERGY SYSTEMS

**Final Deactivation Report
on the Tritium Target Facility,
Building 7025,
at Oak Ridge National Laboratory,
Oak Ridge, Tennessee**

Date Issued—August 1997

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Environmental Management Activities at the
OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37831
managed by
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
for the
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PREFACE

This is the *Final Deactivation Project Report on the Tritium Target Facility, Building 7025, at Oak Ridge National Laboratory, Oak Ridge, Tennessee* (ORNL/ER-406). Although this element of work is not part of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, it was accomplished in accordance with the substantive requirements of the Act. This work was performed under Work Breakdown Structure 1.6.6.2.10.02, Activity Data Sheet 6504IS, "Isotopes Facilities Deactivation Project." This document provides the Environmental Management and Enrichment Facilities Program with the final report on the deactivation of Bldg. 7025.

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ABBREVIATIONS

DOE	U.S. Department of Energy
EM-40	Department of Energy Office of Environmental Restoration
EM-60	Department of Energy Office of Nuclear Materials and Facility Stabilization Program
FDPR	Final Deactivation Project Report
MOA	Memorandum of Agreement
ORNL	Oak Ridge National Laboratory
S&M	Surveillance and Maintenance

DEFINITIONS

Commitments	Tasks required to be accomplished to meet non-regulatory requirements. (site, stakeholders, etc.)
Deactivation	The process of placing a facility in a safe and stable condition to minimize the long-term cost of a S&M program that is protective of workers, the public, and the environment until decommissioning is completed.
Decommissioning	Refers to the ultimate disposition of a facility. Also substitutes for previously used "D&D."
Decontamination	The removal or reduction of radioactive or hazardous contamination from facilities, equipment, or soils by washing, heating, chemical or electro-chemical action, mechanical cleaning or other techniques to achieve a stated objective or end condition.
End Point	A detailed specification for the final deactivation condition of areas and hardware within a facility and related documentation. An individual milestone towards the deactivation and/or the decommissioning of a facility.
Stakeholder	Individuals and organizations (i.e. regulators, local municipalities, the public, etc.) who may be directly or indirectly impacted by activities associated with the IFDP.
Turnover Package	A compilation of project related documents to be given to a postdeactivation organization.

EXECUTIVE SUMMARY

This report documents the condition of Bldg. 7025 after completion of deactivation activities as outlined by the Department of Energy Office of Nuclear Materials and Facility Stabilization (EM-60) Program guidance documentation. The report also outlines the activities conducted to place the facility in a safe and environmentally sound condition for transfer to the Department of Energy Office of Environmental Restoration (EM-40) Program.

This report includes a history and profile of Bldg. 7025 before and after completion of deactivation activities. This report also discusses turnover items, such as the Postdeactivation Surveillance & Maintenance Plan, remaining hazardous materials, radiological controls, Safeguards and Security, quality assurance, facility operations, and supporting documentation provided in the EM-60 Turnover package.

Access to Bldg. 7025 will be necessary to facilitate the required S&M activities to maintain the building safety envelope. Building 7025 was stabilized during deactivation so that only a minimal S&M effort would be required to maintain its safety envelope when the building was transferred to the EM-40 program. Other than the minimal S&M activities, the building will be unoccupied and the exterior doors locked to prevent unauthorized access. The building will be entered only to perform the required S&M.

1. INTRODUCTION

1.1 PURPOSE

This report documents the condition of Bldg. 7025 after completion of deactivation activities as outlined by the Department of Energy (DOE) Office of Nuclear Materials and Facility Stabilization (EM-60) Program guidance documentation. The report also outlines the activities conducted to place the facility in a safe and environmentally sound condition for transfer to the DOE Office of Environmental Restoration (EM-40) Program.

A history and profile of the facility before and after completion of deactivation activities are included. This report also discusses turnover items, such as the Postdeactivation Surveillance & Maintenance Plan, remaining hazardous materials, radiological controls, Safeguards and Security, quality assurance, facility operations, and supporting documentation provided in the EM-60 Turnover package.

1.2 SCOPE

This report addresses the activities performed during deactivation associated with Bldg. 7025 to place the facility in a safe and environmentally sound condition to await decommissioning, the status of the facility, and the activities required to maintain the facility following deactivation. Attachment 1, "Building 7025 Floor Plan," illustrates the physical boundaries and scope of this Final Deactivation Project Report (FDPR). The scope of this FDPR is limited to Bldg. 7025.

2. BACKGROUND

2.1 FACILITY DESCRIPTION

Building 7025 is about 1.4 miles northeast of the central Oak Ridge National Laboratory (ORNL) site. It is within the perimeter fence of the ORNL 7000 area but is isolated from the main 7000 area buildings. The facility is a prefabricated metal-sided building with a total floor area of 590 ft² and a total free space volume of approximately 6000 ft³.

Tritium target fabrication equipment was housed in a 26-ft-long stainless steel hood, which was exhausted by a 2000-ft³/min fan. The tritium hood exhaust was not filtered because no solid radioactive species were present in the air stream. A high vacuum evaporator system was used in the building for the preparation of uranium and thorium targets. The vacuum evaporator was operated in a high efficiency particulate air (HEPA)-filtered hood for contamination control. Only bench-top quantities of uranium and thorium were handled.

A forced air exhaust system (at the rear of the building) ran continuously in combination with a forced air intake system (at the front of the building) to prevent the buildup of any concentration of tritium gas in the occupied areas of the building.

2.2 FACILITY HISTORY

Building 7025, which was a Tennessee Valley Authority surplus building, was installed in 1968 to house a tritium target fabrication system. It was programmatically funded into the early 1980s by the Lawrence Livermore National Laboratory.

As a result of the overcrowding in Bldg. 3550, the ThO_2/UO_2 evaporator was moved to building 7025 in the late 1970s and was used to prepare hundreds of thin film oxide targets for a variety of customers around the world.

The building was used for fabricating titanium tritide targets, for preparing metallurgical samples for helium embrittlement studies by diffusing tritium into the samples and allowing it to decay to helium, and for preparing thin films of ThO_2/UO_2 by vacuum evaporation.

All tritium processing activities in this facility were halted in October 1989. All bulk tritium and the uranium storage traps have been removed from Bldg. 7025. Operation of the ThO_2/UO_2 high vacuum system was continued until January 1990.

3. FACILITY STATUS

3.1 PREDEACTIVATION FACILITY STATUS

Following approximately 22 years of operation and processing, Bldg. 7025 was surplus and many of the process systems were abandoned in place. General housekeeping was not maintained and the building's structural integrity was allowed to lapse.

Attachment 2, "Predeactivation Facility Photographs," contains photographs of the building conditions prior to deactivation activities. Attachment 3 lists drawings associated with Bldg. 7025. No attempt has been made to verify the accuracy of these drawings.

3.1.1 Hazards Analysis

Based on the "SARUP Hazard Screening Document, Tritium Target Facility, Building 7025," HS/7025/F/RT-33, this facility is classified "RADIOLOGICAL" in accordance with DOE Standard DOE-STD-1027-92.

3.1.2 Internal Spaces

3.1.2.1 General area

The general area of Bldg. 7025 contained the operating consoles and control cabinets for the tritium processes and the uranium/thorium processes conducted in the building. In addition, the general area contained a desk and cabinets used in support of operating activities within the building.

Tables 1 and 2 list predeactivation radioactive contamination levels and radiation levels for these areas, respectively.

Predeactivation hazardous materials and waste located in these areas are listed in Table 3, "Building 7025 Predeactivation Hazardous Materials and Waste."

3.1.2.2 Tritium hood

Except for mass spectrometric analysis, all tritium process activities were conducted in the tritium hood, a stainless steel hood on the south wall of Bldg. 7025. Six fire-retardant doors divide the hood into operating areas. Below the doors is a 10-cm-high by 8-m-long opening with movable shutters.

The tritium hood contained a hot sink for use in decontaminating process equipment. The hot sink drained to a 1500-L underground storage tank, which was pumped to a low-level liquid waste (LLW) system truck for disposal as necessary during the operational period of the building.

The tritium hood provided primary containment for the tritium process equipment. The hood was vented by the building exhaust system to a short stack adjacent to the building on the south side.

Tables 1 and 2 list predeactivation radioactive contamination levels and radiation levels for these areas. Table 3 lists predeactivation hazardous materials and waste located in these areas.

3.1.3 Building Structure and External Spaces

3.1.3.1 Bldg. 7025 structure

The exterior of Bldg. 7025 was inspected and found to be in generally good structural condition. The Bldg. 7025 structure and exterior provided secondary containment for the process equipment in conjunction with the building's roof.

3.1.3.2 Bldg. 7025 roof

The roof of Bldg. 7025 was inspected and found to be in generally good structural condition, with the exception of air inleakage through various paths. The roof provided secondary containment for the process equipment in conjunction with the structure and exterior.

3.1.3.3 Storage shed

The storage shed adjacent to Bldg. 7025 is a pre-fabricated mobile shed that was used to store spare parts and materials used in the performance of process operations conducted in Bldg. 7025. The storage shed is not believed to be contaminated.

3.1.3.4 Underground storage tank

A 1500-L stainless steel tank is buried underground outside the east wall of the building. When the full operational level of the waste tank was reached, a liquid level gage was activated, and a visual signal was delivered inside the building. The tank contents were then pumped into a liquid waste disposal truck for disposal in the ORNL LLW system.

The underground storage tank was emptied prior to deactivation and is assumed to be contaminated internally. The tank was filled with grout to prevent the accumulation of groundwater.

3.1.3.5 Stack monitoring shed

The stack monitoring shed houses the detectors and equipment for monitoring the building exhaust system stack. The stack monitoring shed is adjacent to the stack and Bldg. 7025 on the south side of the building. The stack monitoring shed is assumed to be contaminated internally.

3.1.4 Process, Utility, and Support Systems

3.1.4.1 Alpha hood

The ThO_2/UO_2 process was conducted within the Alpha hood located in Bldg. 7025 on the east side of the general area. The alpha hood was independently exhausted by a 600-cfm blower to the atmosphere.

The alpha hood and ThO_2/UO_2 process were only moderately contaminated due to process methodology and the small quantities of radioactive material processed.

3.1.4.2 Building exhaust system

Before deactivation, the building exhaust system provided ventilation services at 2000 cfm to the tritium hood in Bldg. 7025. The building exhaust system for Bldg. 7025 is connected to a small stack, which was located on the south side of the building. The exhaust from the tritium hood was not filtered because no particulate contaminants were generated in the tritium process.

The building exhaust system is contaminated from the process activities performed prior to deactivation.

3.1.4.3 Building intake system

The building intake system provided positive air flow into the building as well as heating and cooling for the building's general area. The building intake system was not required for containment of the tritium process or the uranium/thorium process.

The building intake system consisted of a heating unit, cooling unit, evaporator, and blower. The heating unit, cooling unit, and blower were located on the north side of the building adjacent to the entrance, while the evaporator was adjacent to the west side of the building.

The building intake system is not believed to be contaminated.

3.1.4.4 Stack monitoring system

The stack monitoring system provided sampling and monitoring of the exhaust flow from the tritium hood. The stack monitoring system is primarily located in a shed adjacent to the Bldg. 7025 stack.

The stack monitoring system is believed to be contaminated as a result of process activities within the tritium hood.

3.1.4.5 Process water system

Before it was deactivated, the process water system provided process water and cooling water to the processes conducted in Bldg. 7025. The process water system was fed from the potable water system through a backflow preventer. The process water system is not believed to be contaminated.

3.1.4.6 Electrical power system

Before deactivation, the electrical power system provided power and distribution for the electrical service to Bldg. 7025. Typical electrical loads were lighting, pumps, compressors, heaters, and exhaust fans. A 440-VAC system was used for the vacuum evaporators.

3.1.4.7 Potable water system

Before deactivation, the potable water system provided water to the Bldg. 7025 water fountain and lavatory and fed the process water system through a backflow preventer. The potable water system is not believed to be contaminated.

3.1.4.8 Process gas systems

Building 7025 used argon, nitrogen, and air for process activities and personnel contamination protection. The process gases were delivered to the building in pressurized cylinders, which were located outside the building. The argon and nitrogen were used in the process, while the air was used for positive pressure respirators as breathing air. All the cylinders have been removed and returned to the vendors.

The process gas systems are not believed to be contaminated.

3.1.5 Radioactive Material, Contamination, and Waste

Table 1 lists the radioactive contamination levels identified on radiation surveys conducted prior to deactivation:

Table 1. Predeactivation Radioactive Contamination Levels

Identification	Description	Quantity
General area	Alpha smear - transferable contamination	Up to 374 dpm/100cm ²
General area	Tritium smear - transferable contamination	Up to 4673 dpm/100cm ²
Tritium hood	Alpha smear - transferable contamination	Up to 43 dpm/100cm ²
Tritium hood	Tritium smear - transferable contamination	Up to 7496 dpm/100cm ²
Stack monitoring shed	Alpha smear - transferable contamination	Unknown
Stack monitoring shed	Tritium smear - transferable contamination	Unknown
Underground storage tank	Alpha smear - transferable contamination	Unknown
Underground storage tank	Tritium smear - transferable contamination	Unknown
Storage shed	Alpha smear - transferable contamination	Unknown
Storage shed	Tritium smear - transferable contamination	Unknown

Table 2 lists radiation levels identified on radiation surveys conducted prior to deactivation:

Table 2. Predeactivation Radiation Levels

Identification	Description	Quantity
General area	Fixed and transferable radiation levels	Less than 0.1 mRem/hr
Tritium hood	Fixed and transferable radiation levels	Less than 0.1 mRem/hr
Stack monitoring shed	Fixed and transferable radiation levels	Less than 0.1 mRem/hr
Underground storage tank	Fixed and transferable radiation levels	Less than 0.1 mRem/hr
Storage shed	Fixed and transferable radiation levels	Less than 0.1 mRem/hr

3.1.6 Hazardous Materials and Waste

Table 3 lists the hazardous materials and waste identified during facility walkdowns prior to deactivation:

Table 3. Bldg. 7025 Predeactivation Hazardous Materials and Waste

Identification	Description	Quantity
Lead-based paint	Used as wall covering throughout building.	Indeterminate
PCBs	Electrical devices and transformers	indeterminate

3.2 POSTDEACTIVATION FACILITY STATUS

Attachment 4, "Postdeactivation Facility Photographs," contains photographs of the building conditions following deactivation activities.

3.2.1 Deactivation End Point Completion

End point criteria for deactivation activities and end point completion documentation are not applicable for Bldg. 7025. The requirements and guidance for these program elements were not developed prior to Bldg. 7025 deactivation.

3.2.2 Hazards Analysis

A postdeactivation hazard screening has not been performed for this facility. Therefore Hazards Screening HS/7025/F/RT-33, Rev. 0, remains the current hazard screening for the facility with a Hazard Level Classification for this facility of "radiological."

3.2.3 Internal Spaces

3.2.3.1 General areas

The miscellaneous items abandoned when the facility was no longer in use have been removed from general areas. No significant combustibles remain in the general areas.

The general areas of Bldg. 7025 were decontaminated to remove transferable contamination from access-required spaces.

Postdeactivation radioactive contamination levels and radiation levels for this area are listed in Attachment 5, "Postdeactivation Radiological Surveys."

3.2.3.2 Tritium hood

All process equipment and debris have been removed from the tritium hood. The tritium hood was decontaminated to remove transferable contamination from the surfaces.

Postdeactivation radioactive contamination levels and radiation levels for this area are listed in Attachment 5, "Postdeactivation Radiological Surveys."

3.2.4 Building Structure and External Spaces

3.2.4.1 Bldg. 7025 structure

The exterior of Bldg. 7025 was inspected and found to be in generally good structural condition. The building exterior has been sealed to eliminate air inleakage and to provide an effective containment for the building.

3.2.4.2 Bldg. 7025 roof

The roof of Bldg. 7025 was inspected and found to be in generally good structural condition. The building exterior has been sealed at the lower levels in an attempt to keep small animals from entering the building.

3.2.4.3 Storage shed

The storage shed remains in place and abandoned. No decontamination has been performed. Contaminated materials were not stored in this shed.

3.2.4.4 Underground storage tank

The underground storage tank remains in place and abandoned. No decontamination has been performed.

3.2.4.5 Stack monitoring shed

The stack monitoring shed remains in place and in use. No decontamination has been performed.

3.2.5 Process, Utility and Support Systems

3.2.5.1 Alpha hood

The alpha hood has been disassembled and removed from the facility.

3.2.5.2 Building exhaust system

The building exhaust system has been shut down and abandoned in place. The tritium hood exhaust system remains in use to minimize the spread of tritium contamination to the facility.

3.2.5.3 Building intake system

The building intake system has been isolated, de-energized, and abandoned in place.

3.2.5.4 Stack monitoring system

The stack monitoring system has been deactivated and abandoned in place.

3.2.5.5 Process water system

The process water system has been isolated, drained, and abandoned in place.

3.2.5.6 Electrical power system

All electrical services, with the exception of lighting, have been disconnected or de-energized at the main breaker box.

3.2.5.7 Potable water system

The potable water system has been isolated, drained, and abandoned in place.

3.2.5.8 Process gas systems

The process gas systems have been isolated, drained, and abandoned in place.

3.2.6 Hazardous Materials and Waste

Table 4 lists the hazardous materials and waste identified during facility walkdowns following deactivation:

Table 4. Bldg. 7025 Predeactivation Hazardous Materials and Waste

Identification	Description	Quantity
Lead-based paint	Used as wall covering throughout building.	Indeterminate
PCBs	Electrical devices and transformers	Indeterminate

4. BLDG. 7025 DEACTIVATION ACTIVITIES

The following section addresses the major activities performed during the deactivation of Bldg. 7025. The objectives of deactivation were to place the facility in a passively safe and environmentally stable configuration that can be efficiently and cost-effectively maintained for an indefinite period. The major deactivation issues, with regard to Bldg. 7025, are listed below.

4.1 INTERNAL SPACES; ACCESS REQUIRED

4.1.1 General Areas

All storage cabinets, desks, file cabinets and miscellaneous office materials were removed from the building. Some were green-tagged for reuse. The remaining items were disposed of.

Asbestos insulation on steam lines, etc., was not removed. The asbestos floor tiles were not removed and are not intended to be removed until facility decontamination and decommissioning.

The walls throughout the building are covered with lead-based paint. Peeling and flaking areas were repaired, but the remainder of the paint will remain as is. Paint condition is an inspection item in the surveillance and maintenance (S&M) plan for Bldg. 7025.

4.2 INTERNAL SPACES; NO ACCESS REQUIRED

4.2.1 Tritium Hood

All process equipment and debris have been removed from the tritium hood, which was decontaminated to remove transferable contamination from the surfaces. The exhaust system for the hood remains in service to prevent spread of tritium contamination to the remainder of the building.

4.3 EXTERNAL SPACES

4.3.1 Bldg. 7025 Structure

The building structure was inspected and repaired, as necessary, to provide structural stability for the next 5 years. The building was sealed to provide an effective secondary containment boundary and to prevent animal intrusion to the interior during the postdeactivation S&M period.

4.3.2 Bldg. 7025 Roof

The building roof was repaired and sealed, as necessary, to provide an effective secondary containment boundary and to minimize the amount of water in leakage during the postdeactivation S&M period.

4.3.3 Storage Shed

The storage shed remains in place and abandoned.

4.3.4 Underground Storage Tank

The underground storage tank remains in place and abandoned.

4.3.5 Stack Monitoring Shed

The stack monitoring shed remains in place and in use.

4.4 OPERATIONAL SYSTEMS

4.4.1 Electrical Power System

All electrical services that were not essential to basic S&M operations were disconnected at the main breaker box.

4.4.2 Building Exhaust System

The building exhaust system has been shutdown. The tritium hood exhaust system remains in use as a means of minimizing the spread of tritium contamination into or out of the facility.

4.4.3 Stack Monitoring System

The stack monitoring system has been shutdown and abandoned in place.

4.5 "MOTHBALLED" SYSTEMS

There are no "mothballed" systems associated with Bldg. 7025.

4.6 ABANDONED SYSTEMS

4.6.1 Building Intake System

The building intake system has been deenergized and abandoned in place.

4.6.2 Process Water System

The process water system has been isolated, drained, and abandoned in place.

4.6.3 Potable Water System

The potable water system has been isolated, drained, and abandoned in place.

4.6.4 Process Gas Systems

The process gas systems have been isolated, drained, and abandoned in place.

4.6.5 Stack Monitoring System

The stack monitoring system has been shut down and abandoned in place.

5. TRANSITION ACTIVITIES

Building 7025 will be officially transferred from the DOE EM-60 program to the EM-40 program by a Memorandum of Agreement (MOA). The building will be accepted "as is" by EM-40 at the time of transfer.

5.1 MEMORANDUM OF AGREEMENT

The MOA documents the requirements agreed upon between EM-40 and EM-60. The signed MOA indicates acceptance by EM-40 that the criteria outlined in the MOA have been completed satisfactorily, with the exception of post-transition punchlist items, and that the level of deactivation of the facility is acceptable for transition to the EM-40 program.

Post-Transition punchlist items will be finished after deactivation is complete. The details of how the punchlist items will be completed and documented will be addressed in the MOA.

5.2 REQUIREMENTS AND COMMITMENTS

5.2.1 Regulatory Requirements

There are no regulatory requirements associated with Bldg. 7025.

5.2.2 Stakeholder Commitments

There are no stakeholder commitments associated with Bldg. 7025.

5.3 POST-TRANSITION ACTIVITIES

No post-transition punchlist items have been identified for Bldg. 7025. All deactivation activities have been completed prior to transfer to EM-40.

6. POSTDEACTIVATION S&M

The "Postdeactivation S&M Plan for Building 7025" covers S&M activities associated with the interior spaces, operational, and "mothballed" systems, and external areas related to Bldg. 7025.

The specific objectives of the S&M program for Bldg. 7025 are as follows:

1. Ensure adequate containment of contamination,
2. Provide physical safety and security control,
3. Maintain the facility in a manner that will minimize potential hazards to the public, and

4. Provide a mechanism for the identification and compliance with applicable environmental, safety, and health requirements.

The "Postdeactivation S&M Plan for Building 7025" details the specific S&M items to be performed.

The S&M activities associated with Bldg. 7025 include the following types of activities:

- Walkdowns and inspections for structural integrity, safety, radioactive contamination, and hazardous material conditions;
- General housekeeping of the interior and exterior of the building as needed; and
- Maintenance activities required to maintain the security and safety envelop of the facility.

7. ABNORMAL ACTIVITIES/CONDITIONS

No abnormal activities/conditions have been identified for Bldg. 7025.

8. TURNOVER PACKAGE DOCUMENTATION

8.1 ADMINISTRATIVE TURNOVER PACKAGE

Administrative turnover consists of a collection of administrative documents. This includes procedures, agreements, permits, and other documents not directly related to the physical facility. The level of detail depends on the conditions, requirements, and agreements specific to the facility. Attachment 6, "Administrative Turnover Package Checklist," reflects the documents required for this facility with respect to administrative turnover. The following sections detail the contents of the applicable sections required for the facility.

8.1.1 Final Deactivation Project Report

The FDPR is a management summary of the facility deactivation completion, general status, and conditions, demonstrating conformance with DOE's specification of the overall end point. It identifies management actions needed that are not routine. Unresolved issues are also described.

8.1.2 Deactivation Locks and Keys

The only locks used in Bldg. 7025 are the one securing the door at the front of the building and the one securing the adjacent storage shed.

8.2 TECHNICAL TURNOVER PACKAGE

Technical turnover consists of a collection of technical documents that describe the facility, its equipment, and the conditions at the completion of all deactivation activities. The level of detail depends on the conditions, requirements, and agreements specific to the facility. Attachment 7, "Technical Turnover Package Checklist" reflects the documents required for this facility with respect to technical turnover. The following sections detail the contents of the applicable sections required for the facility.

8.2.1 Updated Facility Drawings (Arrangement, PID, Loop, etc.)

These are facility, room, and cell arrangement drawings — to the extent they exist. However, except in unique circumstances, as-builts of the deactivated conditions within the facility are not provided.

8.2.2 "As Left" Photos of Spaces and Major Equipment

These are description/photos of spaces for which access is not anticipated during S&M.

8.2.3 Radioactive Materials Inventory and Survey

The inventory lists radioactive and fissile material remaining as contamination with characterization information.

The survey lists final radiological/hazardous materials survey records, final configuration and S&M requirements, available drawings, specifications, procedures, manuals, and unplanned occurrences records applicable to the facility.

8.3 S&M TURNOVER PACKAGE

S&M turnover consists of a collection of documents required to support Postdeactivation S&M activities. The level of detail depends on the S&M specific to the facility. Attachment 8, "S&M Turnover Package Checklist" reflects the documents required for this facility with respect to S&M turnover. The following sections detail the contents of the applicable sections required for the facility.

8.3.1 Postdeactivation S&M Plan

This document describes the S&M plan for the facility after deactivation is complete, up to the initiation of decommissioning. The S&M activities will be integrated into the decommissioning work and phased out as decommissioning is completed.

8.3.2 Postdeactivation S&M Procedures

Table 5 contains a list of procedures required during the postdeactivation S&M period. These procedures outline the maintenance activities and special surveillances required to ensure that the facility conditions and safety envelope remain consistent until decommissioning can take place.

Table 5. Bldg. 7025 S&M Procedures

Number	Procedure Title
IP-402	Bldg. 7025 Check Sheets

9. ASSOCIATED LITERATURE

Document Number	Document Title
Draft	Facility Deactivation End Points Handbook; Volume 1: Method and Examples.
Draft	Facility Deactivation End Points Handbook; Volume 2: Deactivation Practices.
DOE/EM-0246	Decommissioning Resource Manual. August 1995
ORNL/ER-249/R2	Martin Marietta Environmental Restoration Program; Work Plan for the Isotopes Facilities Deactivation Project at ORNL, August 1995
	ORNL; Local Emergency Manual, Isotope Area, Revision 94-1, January 1994

10. ATTACHMENTS

1. Bldg. 7025 Floor Plan
2. Bldg. 7025 Predeactivation Facility Photographs
3. Bldg. 7025 Drawing List
4. Bldg. 7025 Postdeactivation Facility Photographs
5. Bldg. 7025 Radiological Survey Data
6. Administrative Turnover Package Checklist
7. Technical Turnover Package Checklist
8. S&M Turnover Package Checklist

ATTACHMENT 1
BLDG. 7025
FLOOR PLAN

ORNL DWG 97C-256

Building 7025

ATTACHMENT 2
BLDG. 7025
PREDEACTIVATION FACILITY PHOTOGRAPHS

Fig. 1. View of Bldg. 7025 and the adjacent storage shed.

Fig. 2. Bldg. 7025 storage shed: predeactivation.

Fig. 3. Inside Bldg. 7025: predeactivation.

Fig. 4. Inside Bldg. 7025: predeactivation.

ATTACHMENT 3
BLDG. 7025
DRAWING LIST

Bldg. 7025 Drawing List

Document Number	Revision	Title
A3A-21214-B001	z	Tritium Target Facility Roof Maintenance Plan
C3E-21214-A001	002	Env Mon UPG STK7025 S/D S
E21214ED-001-D		Tritium Target Fabrication Bldg. Electrical Plot Plan
E21214ED-002-D	B	Elec. Power Light Fire Alarm
E3E-21214-D003	002	7025 Stack Mon-Power Plan P
H21214EG-001-D		Tritium Target Fabrication Bldg. Air Handling Sects
H21214EG-002-D		Cooling Equip A-H system Plan Sect Det Notes
H3E-21214-G004	001	EMS Stack Air Samp Conn P
P21214EC-001-D		Tritium Target Fabrication 185 Gal SST Waste Tank
P21214EC-002-D		Tritium Target Fabrication Bldg. PLBG Serv Piping Det
P21214EC-003-D	A	Plot Plan
S21214EB-001-D		Tritium Target Fabrication Bldg. Plan ELS Sects & Dets
S211402EB-001-D	001	Tritium Target Fabrication Bldg. - Plan Elevations, Sections - & Details

ATTACHMENT 4
POSTDEACTIVATION FACILITY PHOTOGRAPHS

Fig. 1. Storage shed: postdeactivation.

Fig. 2. Bldg. 7025: postdeactivation.

Fig. 3. Bldg. 7025: postdeactivation.

ATTACHMENT 5
BLDG. 7025
RADIOLOGICAL SURVEY DATA

ORNL Radiological Survey Data

Survey Number: 3038-95-0558

3038 Field Office

Date: 3/24/95

Time: 13:00

Surveyor Badge Number: 626079

☒ Routine Survey

RWP Number: N/A

Building: 7025

Specific Location: General area

Description:

Quarterly contamination survey.

Instruments Used and Calibration Due Date:

Packard 1900 TR

GTA-041 2/20/96

General Description of Radiological Conditions:

The only alpha smear above 200 dpm/100 cm sq. The highest Tritium smear was 27,789 dpm/100 cm sq. When smear areas 3 and 4 are decontaminated the contamination area can be dropped back to the hoods.

Division or Group Needing the Survey: CT

Person-hours spent on the survey: 5

of Pages: 3

Completed By: Deborah Crowder

Reviewed by: Alata

Date: 3-28-95

Smear Results (dpm/100 cm² unless noted)

Smear Number	α	β	Location	Smear Number	α	β	Location	Smear Number	α	β	Location
1	<20	<1000	See map	2	<20	<1000	See map	3	<20	27,789	See map
4	<20	9,758	See map	5	<20	<1000	See map	6	<20	<1000	See map
7	<20	<1000	See map	8	<20	<1000	See map	9	<20	<1000	See map
10	<20	<1000	See map	11	<20	<1000	See map	12	<20	<1000	See map
13	<20	<1000	See map	14	<20	<1000	See map	15	<20	<1000	See map
16	<20	<1000	See map	17	<20	<1000	See map	18	<20	<1000	See map
19	<20	<1000	See map	20	<20	2,222	See map	21	<20	2,024	See map
22	<20	1,698	See map	23	<20	<1000	See map	24	<20	1,121	See map
25	<20	1,479	See map	26	<20	<1000	See map	27	<20	<1000	See map
28	<20	<1000	See map	29	<20	<1000	See map	30	<20	<1000	See map
31	<20	<1000	See map	32	<20	<1000	See map	33	<20	<1000	See map
34	<20	<1000	See map	35	<20	<1000	See map	36	<20	<1000	See map
37	<20	<1000	See map	38	<20	<1000	See map	39	101	<1000	See map

Protocol #: 1 Name: h-3 24-Mar-95 14:14
 Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg=26.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Conventional DPM
 Nuclide 1 = 204383
 Warning: User program changes may have invalidated DPM calculation
 Luminescence Correction On

S#	TIME	CPMA	DPM1	A:2S%	CPMB	SIS	tSIE	LUM	FLAG
1	1.00	183.00	444.92	15.46	200.00	9.072	375.	11	
2	1.00	97.00	257.58	29.94	122.00	8.898	333.	47	
3	1.00	11565.0	27789.0	1.87	11083.0	8.955	382.	1	
4	1.00	3863.00	9758.58	3.23	3710.00	8.688	356.	1	
5	1.00	75.00	184.23	21.60	94.00	8.883	370.	8	
6	1.00	92.00	226.63	20.62	115.00	9.387	368.	11	
7	1.00	255.00	641.02	12.55	265.00	8.105	358.	5	
8	1.00	58.00	140.11	23.33	82.00	9.821	379.	6	
9	1.00	72.00	175.63	21.60	95.00	9.597	373.	6	
10	1.00	33.00	84.57	32.69	61.00	10.525	349.	23	
11	1.00	269.00	677.75	12.52	280.00	8.767	357.	8	
12	1.00	22.00	57.12	35.36	48.00	9.764	343.	20	
13	1.00	52.00	129.93	25.64	77.00	9.482	361.	12	
14	1.00	157.00	429.78	15.26	177.00	8.823	321.	3	
15	1.00	54.00	140.07	23.18	73.00	8.466	344.	4	
16	1.00	266.00	657.95	12.02	284.00	9.168	366.	3	
17	1.00	58.00	145.00	24.05	84.00	9.838	361.	9	
18	1.00	12.00	28.95	34.91	36.00	11.953	379.	8	
19	1.00	96.00	235.59	18.83	115.00	9.444	370.	4	
20	1.00	878.00	2222.23	6.70	862.00	8.739	355.	1	
21	1.00	890.00	2024.52	6.69	865.00	8.770	417.	1	
22	1.00	703.00	1698.84	7.52	684.00	7.732	378.	1	
23	1.00	87.00	233.82	19.79	109.00	9.587	328.	5	
24	1.00	452.00	1121.45	9.52	460.00	9.284	365.	4	
25	1.00	598.00	1479.95	8.12	599.00	8.983	366.	1	
26	1.00	76.00	185.58	20.75	94.00	9.095	373.	4	
27	1.00	60.00	144.94	21.57	83.00	10.712	379.	0	
28	1.00	22.00	55.15	31.73	43.00	9.262	360.	10	
29	1.00	8.00	21.57	42.42	34.00	10.318	327.	23	
30	1.00	73.00	197.38	21.09	95.00	8.220	326.	5	
31	1.00	16.00	42.76	32.99	41.00	10.824	331.	7	
32	1.00	14.00	41.17	37.42	41.00	8.809	294.	18	
33	1.00	25.00	64.30	33.51	51.00	11.203	347.	18	
34	1.00	24.00	62.49	34.87	50.00	8.843	342.	21	
35	1.00	45.00	134.97	24.07	69.00	9.028	288.	2	
36	1.00	22.00	54.19	31.18	47.00	10.023	368.	6	
37	1.00	36.00	84.55	28.12	59.00	10.089	396.	9	
38	1.00	79.00	204.16	19.70	102.00	10.251	345.	1	
39	1.00	276.00	719.34	11.74	287.00	8.960	341.	2	
40	1.00	120894.	183433.	0.58	109318.	19.984	1011	0	H-3 Standard
41	1.00	0.00	0.00	48.99	19.00	21.400	1008	10	Background

Packard 1900TR

ORNL Radiological Survey Data

Survey Number: 3038-96-1657

3038 Field Office

Date: 6/27/96

Time: 10:30

Surveyor Badge Number: 626079

☐ Routine Survey

RWP Number: 3038-96-0007A

Building: 7025

Specific Location: General area.

Description:

Disassembly, segregation and packaging of equipment (H-3 system) in and on top of the hoods.

Instruments Used and Calibration Due Date:

LSC

CTB-047

3/1/97

CTA-041

3/1/97

General Description of Radiological Conditions:

The maximum loose contamination at the beginning of the job was 2.9 billion dpm/100 cm sq beta (H-3). The general area loose contamination levels were < 10,000 dpm/100 cm sq beta (H-3). Only one contamination survey was done in the high contamination area except for the step off pad, during the job due to time considerations, air supply, cost of saranex suits and the amount of waste that would have been generated by trying to keep the high contamination area levels down. The maximum loose contamination in the high contamination area was 118,112 dpm/100 cm sq beta (H-3) on this survey which is included in this paperwork. The contamination area and step off pads were decontaminated repeatedly during the job because of its small size and a need to keep this area at lower levels. Smear data prior to decontaminating is given in the following pages. The highest smear in the high contamination area was 372,028 dpm/100 cm sq beta (H-3) and 42,508 dpm/100 cm sq beta (H-3) in the contamination area at the end of the job the rest of the results are listed below. The air monitor (set at 50 uCi/meters cubed) never went into high level during the job. No personnel were contaminated to a bioassay count level requiring a recount. The maximum skin contamination level found after a job was 5,996 dpm/100 cm sq beta (H-3). The Packard 1900TR liquid scintillation counter was used to count smears.

Division or Group Needing the Survey: CT

Person-hours spent on the survey: 136.6

of Pages: 76 Completed By: Deborah Crossner Reviewed by: J.H. R. Slatts Date: 7-23-96

Smear Results (dpm/100 cm² unless noted)

Smear Number	α	β	Location	Smear Number	α	β	Location	Smear Number	α	β	Location
1	NC	11,073	See map	2	NC	7,484	See map	3	NC	14,593	See map
4	NC	3,565	See map	5	NC	7,349	See map	6	NC	23,268	See map
7	NC	25,180	See map	8	NC	15,446	See map	9	NC	25,079	See map
10	NC	31,858	See map	11	NC	204,276	See map	12	NC	372,028	See map
13	NC	66,624	See map	14	NC	61,325	See map	15	NC	48,266	See map
16	NC	20,447	See map	17	NC	24,299	See map	18	NC	266,104	See map
19	NC	77,183	See map	20	NC	646,327	See map	21	NC	172,936	See map
22	NC	70,721	See map	23	NC	44,021	See map	24	NC	85,36	See map
25	NC	20,224	See map	26	NC	331,599	See map	27	NC	42,508	See map
28	NC	486	See map	29	NC	375	See map	30	NC	525	See map
31	NC	921	See map	32	NC	1,520	See map	33	NC	1,862	See map
34	NC	925	See map	35	NC	790	See map				

3038-96-1657

MARTIN MARIETTA ENERGY SYSTEMS, INC.		☐ GENERAL RWP ☒ JOB-SPECIFIC RWP	RWP NUMBER 3038-96-0007 A ☒ Contamination Area Entry ☐ Radiation Area Entry
1. EFFECTIVE 4/8/96 8:00	2. EXPIRES 4/26/96 16:00	4. EXTENDED TO <u>5-31-96</u> <u>12</u> <u>6-30-96</u>	
3. LOCATION OF WORK Building 7025 tritium hoods.			
5. DESCRIPTION OF WORK Dismantle equipment, segregate, and initiate waste package of equipment located inside and on top of H-3 hoods.			
6. PRE-JOB CONDITIONS Maximum loose contamination in hoods 2.9 Billion dpm/100 cm sq beta (H-3). The general area loose contamination levels are <10,000 dpm/100 cm sq beta (H-3)		7. ANTICIPATED CONDITIONS DURING JOB There is a possibility of spreading contamination out of the hoods into the general area. Possible airborne contamination.	
SEE SURVEY No: _____			
8. REQUIRED DOSIMETER ☒ TLD ☐ Pocket Chamber ☐ Neutron ☐ Extremity ☐ Electronic ☐ Multiple Dosimeters Other Dosimetry _____		9. REQUIRED RESPIRATORY PROTECTION ☐ FullFace ☐ PAPR ☒ Supplied Air ☐ SCBA TYPE OF CARTRIDGE ☐ Particulate ☐ GMHF-C ☐ Other (specify) _____	
10. TRAINING ☐ RWI ☒ RWII ☐ Special RW Training ☐ Respirator Fit Card Required			
11. REQUIRED ANTI-C CLOTHING (NO. OF PAIRS INDICATED IN PARENTHESIS) COVERALLS: ☒ Cloth no hood (1) ☐ Cloth with hood () GLOVES: ☒ Rubber (1) ☐ Surgeon's () SHOE COVERS: ☐ Booties () ☐ Rubber, low top () Other: ☐ Labcoat ☐ Raincoat ☐ Jacket ☐ Hard Hat ☒ Disposable (2) ☐ Hood () ☐ Skull Cap			
12. SPECIAL ANTI-C CLOTHING INSTRUCTIONS: 1 pair of neoprene gloves, tape inner pair of gloves to C-Zone coveralls. One pair of shoe covers under disposable coveralls. <i>Saranex</i>			
13. PRE-JOB BRIEFING REQUIRED? ☒ No ☐ Yes			
14. RCO COVERAGE ☐ Routine Survey Only ☐ Initial ☐ Intermittent ☒ Continuous ☐ Post-Job			
15. SPECIAL INSTRUCTIONS Have workers that entered contamination and high contamination areas smeared by R.C.T. upon exiting work area.			
16. BIOASSAY REQUIREMENTS ☐ None ☐ Routine ☒ Special: Submit H-3 urine sample 90 minutes after each days work.			
17. APPROVALS			
Written/RCO	Signature <i>Deborah Crossno</i>	Badge 626079	Date 4-4-96
Approved/RCO	Signature <i>Deborah Crossno</i>	Badge 626079	Date 4-4-96
ALARA/RCO	<i>N/A</i>		
Work Group Supervisor	Signature <i>[Signature]</i>	Badge 15740	Date 4-8-96
RWP Terminated/ RCO	Signature <i>Deborah Crossno</i>	Badge 626079	Date 6-27-96

Distribution:
RCO-RC
Work Group Supervisors

ORNL Radiological Survey Data

Nelson Cross
626079

Survey Number: 3033-96-1657

3038 Field Office

Date: 6-27-96 Time: 10:30

Packard 1900 TR

Building 7025

Symbol	Smear Location	Boundary Designations	
①	Large Area Smear	RA - Radiation Area	BA - Radiological Buffer Area
②	Contact Dose Rate	HR - High Radiation Area	CA - Contamination Area
③	30 cm Dose Rate	VR - Very High Radiation Area	HC - High Contamination Area
④	General Area Dose Rate	AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
SOP	Step-off Pad	RM - Radioactive Materials Area	SC - Soil Contamination Area
AS	Air Sample Location	UM - Underground Radioactive Materials Area	

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

Deborah Crossno
626079

ORNL Radiological Survey Data

Survey Number: 203896-1657

3038 Field Office

Date: 6-21-96 Time: 1030

B-25 Boxes

Packard 900TR

Give only D.M. on station card	
NA	dpm/100 cm ² s
1,000	dpm/100 cm ² s
B	B
1	34925
2	15790
3	76
4	37
5	38
6	35
7	40
8	41
9	42
10	43
11	44
12	45
13	46
14	47
15	48
16	49
17	50
18	51
19	52
20	53
21	54
22	55
23	56
24	57
25	58
26	59
27	60
28	61
29	375
30	525
31	921
32	1520
33	1862

Box 1

Box 2

Box 3

Box 4

Boundary Designations	
① - Smear Location	RA - Radiation Area
② - Large Area Smear	BA - Radiological Buffer Area
③ - Contact Dose Rate	CA - Contamination Area
④ - 30 cm Dose Rate	HC - High Contamination Area
⑤ - General Area Dose Rate	FC - Fixed Contamination Area
⑥ - Step-off Pad	RM - Radioactive Materials Area
⑦ - Air Sample Location	SC - Soil Contamination Area
	UM - Underground Radioactive Materials Area

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

Protocol #: 2 Name: H-3 DPM 27-Jun-96 11:12
 Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg=26.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Conventional DPM
 Nuclide 1 = 204383
 Warning: User program changes may have invalidated DPM calculation
 Luminescence Correction On

S#	TIME	CPMA	DPM1	A:25%	CPMB	SIS	tSIE	LUM	FLAG
1	1.00	4559.00	11073.3	3.07	4429.00	9.667	376.	4	
2	1.00	3190.00	7464.44	3.67	3098.00	9.993	398.	4	
3	1.00	6174.00	14593.0	2.59	5967.00	9.864	391.	2	
4	1.00	1521.00	3564.71	5.16	1495.00	10.063	397.	1	
5	1.00	3164.00	7349.35	3.60	3052.00	9.400	403.	2	
6	1.00	9965.00	23267.9	2.02	9711.00	10.750	399.	1	
7	1.00	10841.0	25179.9	1.94	10487.0	10.441	403.	1	
8	1.00	6618.00	15446.1	2.49	6370.00	9.607	400.	1	
9	1.00	10839.0	25079.2	1.93	10541.0	10.648	405.	0	
10	1.00	13621.0	31858.3	1.73	13204.0	10.078	398.	1	
11	1.00	87276.0	204276.	0.68	84541.0	10.460	398.	0	
12	1.00	155418.	372028.	0.51	145785.	8.717	384.	1	
13	1.00	28164.0	66624.4	1.20	27021.0	9.603	391.	1	
14	1.00	24843.0	61325.5	1.28	24016.0	9.753	367.	1	
15	1.00	19956.0	48265.8	1.42	19243.0	9.499	378.	1	
16	1.00	8468.00	20447.2	2.19	8187.00	9.608	379.	1	
17	1.00	10235.0	24298.9	1.99	9919.00	9.948	389.	1	
18	1.00	109122.	266104.	0.61	105332.	9.733	374.	0	
19	1.00	32804.0	77182.7	1.11	31652.0	10.128	394.	1	
20	1.00	248641.	646327.	0.40	240717.	9.756	343.	0	
21	1.00	67153.0	172936.	0.78	65002.0	9.517	347.	1	
22	1.00	29612.0	70720.8	1.17	28475.0	9.673	385.	0	
23	1.00	18260.0	44020.8	1.49	17730.0	9.936	380.	0	
24	1.00	3555.00	8536.19	3.37	3483.00	10.211	382.	1	
25	1.00	8531.00	20224.0	2.17	8292.00	10.134	390.	1	
26	1.00	134339.	331599.	0.55	127985.	9.071	367.	1	
27	1.00	17625.0	42507.6	1.52	17122.0	10.171	380.	1	
28	1.00	206.00	486.46	13.52	224.00	10.536	392.	3	
29	1.00	153.00	375.31	15.92	179.00	10.147	370.	6	
30	1.00	225.00	525.31	12.92	242.00	10.426	399.	3	
31	1.00	375.00	920.66	10.23	392.00	10.872	370.	2	
32	1.00	642.00	1520.54	7.91	649.00	10.694	390.	2	
33	1.00	786.00	1862.31	7.10	788.00	10.876	390.	1	
34	1.00	410.00	925.13	9.71	427.00	11.176	423.	1	
35	1.00	325.00	790.93	10.95	342.00	10.260	375.	2	

See
Map
of
Room

See Map
of Boxes
B-25

(1 missing vial)

37 1.00 110465 147541 0.60 99798.0 19.816 1017A 0
 38 1.00 0.00 0.00 50.00 14.00 19.260 1017A 0

Bldg 7025
 Packard 1900TR

Deborah Cussone
 626079
 = RUCP 3038-96-0007A

Box
4

Box
3

Box
2

Box
1

7025

Shed

Protocol #: 3 Name: H-3 DPM 27-Jun-96 12:19
 Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg=26.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Conventional DPM
 Nuclide 1 = 2043B3
 Warning: User program changes may have invalidated DPM calculation
 Luminescence Correction On

S#	TIME	CPMA	DPM1 A:25%	CPMB	SIS tSIE LUM FLAG
1	1.00	47773.0	111419.	0.92 46432.0	10.537 400. 0

0 36 -

See map
of room

Deborah Crossno
 626079

ORNL Radiological Survey Data

Survey Number: 3038-96-1922

3038 Field Office

Date: 10/31/96

Time: 16:00

Surveyor Badge Number: 626079

☐ Routine Survey

RWP Number: 3038-96-0022A

Building: 7025

Specific Location: Building 7025 and B-25 boxes outside of bldg.

Description:

Deconning inside of building and outside of b-25 boxes as needed.

Instruments Used and Calibration Due Date:

LSC

CTB-047

3/1/97

CTA-041

3/1/97

General Description of Radiological Conditions:

Inside building 7025 the highest smear was 446,518 dpm/100 cm sq beta (H-3) on 7/11/96. The higher smears were on and near the H-3 hoods along the south wall. After deconning repeatedly the majority of the room smeared <1,000 dpm/100 cm sq beta on 10/17/96. The area around the hood was roped off as a contamination area and inside this area a high contamination area was placed right at the hoods. The B-25 boxes were smeared after all of them were filled. Four of the boxes had to be roped off as a contamination area the highest the boxes smeared during this time was 672,939 dpm/100 cm sq beta from around the lid on the box with highest contaminated waste. The boxes were deconned but because of the level of contamination and the heat they would repeatedly show up contaminated due to the H-3 off gassing around the gasket on the lid. When it rained the levels would go down, but at no time did the ground around the boxes smear > 1,000 dpm/100 cm sq beta. The B-25 boxes were deconned and smeared <1,000 dpm/100 cm sq beta on 12/20/96, they were picked up and removed from the area shortly after that. The Packard 1900 TR liquid scintillation counter was used to count the H-3 smears. All personnel smeared 1,000 dpm/100 cm sq beta, smear data and sign in sheets contained within this write-up. No airborne contamination was detected during the job.

Division or Group Needing the Survey:

CT

Person-hours spent on the survey:

20.6

of Pages: 63

Completed By:

Delmar Crossina

Reviewed by:

J. Slote

Date: 1-23-97

ORNL Radiological Survey Data

Deborah Crossno
626079

Survey Number: 303816-1822

3038 Field Office

Date: 7-30-96 Time: 1420

Packard 1900 TR

Building 7025

The contamination area boundary will be dropped back to the boundary on the High "C" area. (27) will be deconned.

Boundary Designations	
RA - Radiation Area	BA - Radiological Buffer Area
HR - High Radiation Area	CA - Contamination Area
VR - Very High Radiation Area	HC - High Contamination Area
AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
RM - Radioactive Materials Area	SC - Soil Contamination Area
UM - Underground Radioactive Materials Area	

ORNL Radiological Survey Data

Deborah Crossno
626079

Survey Number: 303846-1922

3038 Field Office

Date: 7-30-96 Time: 1420

Packard 1900 TR

Building 7025

The contamination area boundary will be dropped back to the boundary on the High 'C' area.
 (27) will be deconned.

Smear Location		Boundary Designations	
(1) - Large Area Smear	RA - Radiation Area	BA - Radiological Buffer Area	
(2) - Contact Dose Rate	HR - High Radiation Area	CA - Contamination Area	
(3) - 30 cm Dose Rate	VR - Very High Radiation Area	HC - High Contamination Area	
(4) - General Area Dose Rate	AR - Airborne Radioactivity Area	FC - Fixed Contamination Area	
(SOP) - Step-off Pad	RM - Radioactive Materials Area	SC - Soil Contamination Area	
12M - Underfooted Radioactive Materials Area			

ORNL Radiological Survey Data

Deborah Cresson
626079

Survey Number: 3038-96-1922

3038 Field Office

Date: 7-22-96 Time: 0915

Packard 1900 TR

Give any DM on screen over
20 cps/100 cm² :
1000 cps/100 cm² :

B³H

NC

1210

1064

1093

8360

1532

2056

4871

4744

6660

2135

1468

1908

2539

2187

3028

4210

5527

64705

95279

13281

2034

3000

1799

1799

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Building 7025

Symbol	Smear Location	Boundary Designations
⊖	Large Area Smear	RA - Radiation Area
⊖	Contact Dose Rate	BA - Radiological Buffer Area
⊖	30 cm Dose Rate	CA - Contamination Area
⊖	General Area Dose Rate	HR - High Radiation Area
[SOP]	Step-off Pad	VR - Very High Radiation Area
AS	Air Sample Location	AR - Airborne Radioactivity Area
		FC - Fixed Contamination Area
		RM - Radioactive Materials Area
		SC - Soil Contamination Area
		UM - Underground Radioactive Materials Area

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

ORNL Radiological Survey Data

 Webster, Lisa
626079

Survey Number: 3038-96-1922

3038 Field Office

Date: 7-22-96 Time: 0915

Packard 1900 TR

 Only use DMS on survey area
 30 open/100 m²
 1000 open/100 m²

	B ³ H
1	NC
2	—
3	1210
4	1064
5	1093
6	8360
7	—
8	—
9	1532
10	2056
11	4871
12	4944
13	6660
14	2735
15	1468
16	19008
17	3539
18	2187
19	3028
20	4210
21	5527
22	69705
23	95219
24	13281
25	2034
26	3000
27	—
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96	—
97	—
98	—
99	—
100	—

Building 7025

Symbol	Description	Boundary Designations
①	- Smear Location	RA - Radiation Area
②	- Large Area Smear	BA - Radiological Buffer Area
③	- Contact Dose Rate	CA - Contamination Area
④	- 30 cm Dose Rate	HC - High Contamination Area
⑤	- General Area Dose Rate	FC - Fixed Contamination Area
[SOP]	- Step-off Pad	SC - Soil Contamination Area
AS	- Air Sample Location	UM - Underground Radioactive Materials Area

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

ORNL Radiological Survey Data

Deborah Crossland
62.6079

Survey Number: 3038-96-1922

3038 Field Office

Date: 7-11-96 Time: 1000

Count only DPM on surfaces and
 20 open/100 cm² :
 1000 open/100 cm² :

c	B ² H
1	NC 43.156
2	41.764
3	66.255
4	39.563
5	42.957
6	21.018
7	31.189
8	17.408
9	15.670
10	21.668
11	23.842
12	12.934
13	48.216
14	43.666
15	58.98
16	13.310
17	5.992
18	5.079
19	80.611
20	251.711
21	446.518
22	363.890
23	222.951
24	257.022
25	400.965
26	120.867
27	43.311
28	184.700
29	51.748
30	54.607
31	51.629
32	522

Building 7025

Taken
on *
Lift

- (24) Top horizontal
 (25) piece
 (26) wheels
 (27) Chain
 (29) Vertical
 part

() - Smear Location	Boundary Designations	
() - Large Area Smear	RA - Radiation Area	BA - Radiological Buffer Area
() - Contact Dose Rate	HR - High Radiation Area	CA - Contamination Area
() - 30 cm Dose Rate	VR - Very High Radiation Area	HC - High Contamination Area
() - General Area Dose Rate	AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
(SOP) - Step-off Pad	RM - Radioactive Materials Area	SC - Soil Contamination Area
AS - Air Sample Location	UM - Underground Radioactive Materials Area	

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

ORNL Radiological Survey Data

Deborah Crossno
626079

Count rate DPM on screen: 20
1000 cps/100 m² :
1000 cps/100 m² :

Survey Number: 3038-96 1922

3038 Field Office

Date: 7-11-96 Time: 1800

1	NC	143.156
2		41.764
3		66.255
4		39.563
5		42.959
6		210.18
7		31.139
8		17.303
9		15.490
10		21.608
11		23.842
12		12.934
13		48.216
14		43.666
15		58.99
16		13.310
17		5.992
18		5.079
19		80.691
20		351.711
21		446.518
22		363.890
23		222.951
24		357.022
25		400.965
26		120.867
27		43.311
28		184.72
29		51.742
30		54.607
31		51.639
32	V	522

Building 7025

Symbol	Smear Location	Boundary Designations	
⊖	Large Area Smear	RA - Radiation Area	BA - Radiological Buffer Area
⊖	Contact Dose Rate	HR - High Radiation Area	CA - Contamination Area
⊖	30 cm Dose Rate	VR - Very High Radiation Area	HC - High Contamination Area
⊖	General Area Dose Rate	AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
[SOP]	Step-off Pad	RM - Radioactive Materials Area	SC - Soil Contamination Area
AS	Air Sample Location	UM - Underground Radioactive Materials Area	

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

ORNL Radiological Survey Data

Survey Number: 3038-97-0255

3038 Field Office

Date: 4/18/97

Time: 13:20

Surveyor Badge Number: 626079

☒ Routine Survey

RWP Number: 3038-97-0002A

Building: 7025

Specific Location: General area

Description:

Quarterly contamination survey.

Instruments Used and Calibration Due Date:

CTA-041 3/1/98

LSC

General Description of Radiological Conditions:

The highest smear was 2,758,520 dpm/100 cm sq beta (H-3) from inside hood no.4. The highest smear from outside the hoods was 99,571 dpm/100 cm sq beta. All smears were <20 dpm/100 cm sq alpha. Two of the hood smears had to be diluted to get the dpm because they were so high the counter couldn't count them. The Packard 1900TR liquid scintillation counter was used to count the smears. The alpha smears were taken on defensap smears and counted with a portable instrument to eliminate the possibility of contaminating the smear counter.

Division or Group Needing the Survey: CT

Person-hours spent on the survey:

4

of Pages: 9

Completed By: Deborah CrossinoReviewed by: J. NattaDate: 5-14-97

Smear Results (dpm/100 cm² unless noted)

Smear Number	α	β	Location	Smear Number	α	β	Location	Smear Number	α	β	Location
1	<20	99,571	See maps	2	<20	10,222	See maps	3	<20	11,055	See maps
4	<20	27,377	See maps	5	<20	25,736	See maps	6	<20	9,704	See maps
7	<20	45,615	See maps	8	<20	7,111	See maps	9	<20	12,166	See maps
10	<20	7,378	See maps	11	<20	1,980	See maps	12	<20	11,882	See maps
13	NC	<1,000	See maps	14	NC	5,608	See maps	15	NC	3,336	See maps
16	NC	3,214	See maps	17	NC	5,768	See maps	18	NC	3,894	See maps
19	NC	<1,000	See maps	20	NC	2,151	See maps	21	NC	5,805	See maps
22	NC	14,942	See maps	23	NC	8,180	See maps	24	NC	52,617	See maps
25	NC	26,874	See maps	26	NC	59,776	See maps	27	NC	2,912,604	See maps
28	NC	2,758,520	See maps	29	NC	10,141,20	See maps				

0

ORNL Radiological Survey Data

Survey Number: 3038-97-0255

3038 Field Office

Date: 4/18/97

Time: 13:20

- ② - Smear Location
- ⊕ - Large Area Smear
- # - Contact Dose Rate
- # - 30 cm Dose Rate
- # - General Area Dose Rate
- SOP - Step-off Pad
- AS - Air Sample Location

- RA - Radiation Area
- HR - High Radiation Area
- VR - Very High Radiation Area
- AR - Airborne Radioactivity Area
- RM - Radioactive Materials Area
- UM - Underground Radioactive Materials Area

Boundary Designations

- BA - Radiological Buffer Area
- CA - Contamination Area
- HC - High Contamination Area
- FC - Fixed Contamination Area
- SC - Soil Contamination Area

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

ORNL Radiological Survey Data

Survey Number: 3038-97-0255

3038 Field Office

Date: 4/18/97

Time: 13:20

#	-	Smear Location	Boundary Designations	
			RA - Radiation Area	BA - Radiological Buffer Area
#	-	Large Area Smear	HR - High Radiation Area	CA - Contamination Area
#	-	Contact Dose Rate	VR - Very High Radiation Area	HC - High Contamination Area
#	-	30 cm Dose Rate	AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
SOP	-	General Area Dose Rate	RM - Radioactive Materials Area	SC - Soil Contamination Area
AS	-	Step-off Pad	UM - Underground Radioactive Materials Area	
	-	Air Sample Location		

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

Protocol #: 2 Name: H-3 DPM
 Region #: 1
 Time = 1.00 CIP = 1.00
 Hgr = 0.00 Zr Digma = 0.00
 Lgr = 0.00 Bkg = 0.1

Warning: User program changes may have invalidated DPM calculation

S#	TIME	CPMA	DPM1	A:25%	CPMB	SIS	tsIE	LUM	FLAG
1	1.00	37700.0	99571.4	1.03	36487.0	9.528	363.	1	
2	1.00	3772.00	10222.2	3.25	3655.00	9.023	350.	1	
3	1.00	3919.00	11055.4	3.18	3814.00	9.001	333.	1	
4	1.00	9355.00	27337.1	2.06	9072.00	8.959	319.	1	
5	1.00	9344.00	25735.5	2.07	8953.00	7.995	343.	1	
6	1.00	3363.00	9703.61	3.44	3272.00	8.826	324.	1	
7	1.00	15067.0	45614.8	1.87	14750.0	8.774	308.	1	
8	1.00	2660.00	7110.54	3.80	2997.00	9.012	357.	1	
9	1.00	4669.00	12166.3	2.92	4526.00	9.264	369.	1	
10	1.00	2801.00	7377.88	3.76	2732.00	9.358	364.	1	
11	1.00	801.00	1979.57	6.95	799.00	10.134	398.	1	
12	1.00	4621.00	11882.5	2.93	4303.00	7.016	376.	1	
13	1.00	320.00	845.75	10.75	334.00	9.602	362.	3	
14	1.00	2002.00	5608.26	4.44	1953.00	8.896	336.	1	
15	1.00	1241.00	3336.36	5.62	1231.00	9.524	354.	1	
16	1.00	1225.00	3214.30	5.65	1193.00	9.046	366.	1	
17	1.00	2194.00	5768.38	4.24	2126.00	9.016	365.	1	
18	1.00	1486.00	3893.57	5.14	1429.00	8.920	366.	1	
19	1.00	330.00	936.41	10.60	345.00	9.056	330.	2	
20	1.00	783.00	2150.92	7.03	774.00	9.111	344.	1	
21	1.00	2025.00	5805.13	4.42	1970.00	7.917	326.	1	
22	1.00	5232.00	14941.5	2.76	5103.00	9.129	328.	1	
23	1.00	2873.00	8180.18	3.71	2802.00	8.797	329.	1	
24	1.00	17365.0	52617.2	1.52	16811.0	8.478	305.	1	
25	1.00	9935.00	26873.7	2.00	9690.00	9.941	351.	1	
26	1.00	20190.0	59775.6	1.41	19603.0	9.033	314.	1	
27	1.00	105801.	164262.	0.61	95381.0	20.060	1019	0	
28	1.00	0.00	0.00	45.88	16.00	25.933	1018	21	

Smears
1-26

E H3 standard
E Bkgd.

Packard 1900TR
 RWP# 3038-97-0002A

Deborah Crossino
626079
Bldg 7025

Protocol #: 1 Name: H-3 DPM 18-Apr-97 15:24
 Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg=26.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Conventional DPM
 Nuclide 1 = 202278
 Warning: User program changes may have invalidated DPM calculation

S#	TIME	CPMA	DPM1 A:2S%	CPMB	SIS tSIE LUM FLAG
1	1.00	295007.	2912604 0.37	289300.	6.186 110. 175 Hood 6 area
(1 missing vial) To Contaminated, locked up counter > 10 million 1/5 Hood 4					
3	1.00	3459610	***** 0.11	3034939	9.412 317. 1 > 10 million 1/5 Hood 2
4	1.00	105758.	164282. 0.61	95624.0	20.103 1017 0 E ₂ H-3 standard
5	1.00	0.00	0.00 50.00	10.00 15.301	1022 Blegel

Packard 1900 TR

Deborah Crossno
 626079
 Bldg 7025 Hood smears
 Undiluted Samples

Protocol #: 1 Name: H-3 DPM 22-Apr-97 16:77
 Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg=26.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Conventional DPM
 Nuclide 1 = 202278
 Warning: User program changes may have invalidated DPM calculation

S#	TIME	CPMA	DPM1 A:25%	CPMB	SIS	tSIE	LUM	FLAG
1	1.00	5181818	*****	0.09	4563198	12.034	435.	1 Smear # 28 1st dilution
2	1.00	44224.0	*101412.	0.95	43030.0	11.602	446.	0 Smear # 29 1st dilution
3	1.00	106171.	164287.	0.61	95954.0	20.327	1028	0 E
4	1.00	0.00	0.00	41.70	18.00	17.795	1028	22 E

Packard 1900TR

Smear no. 28 will be diluted further.

Smear no. 29 is 100th the original concentration.

*101,412 dpm x 100 = 10,141,200 dpm/100 cm² Beta

Deborah Crossino
626079

RWP# 3038-97-0002A
Bldg. 7025 heads

Protocol #: 1 Name: H-3 DPM 22-Apr-77 16:56
 Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg=26.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Conventional DPM
 Nuclide 1 = 202278
 Warning: User program changes may have invalidated DPM calculation

S#	TIME	CPMA	DPM1 A:25%	CPMB	SIS	tSIE	LUM	FLAG
1	1.00	119625.*275852.	0.58	116616.	11.751	442.	0	#28 dilution no. 2
2	1.00	105972. 164137.	0.61	95872.0	20.252	1025	0	E #3 standard
3	1.00	0.00	0.00	41.70	21.00	22.958	1024	17 E Bkgd

Packard 1900TR

Deborah Cressno
 626079
 RWP# 3038-97-0002A
 Bldg. 7025 Hoods

Smear #28 was diluted to
 100 th of the original strength (concentration)
 and then diluted again to a
 10,000 th of the original concentration.

$$* 275,852 \times 10,000 = \underline{2,758,520,000 \text{ dpm/100 cm}^2 \text{ Beta}}$$

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

By my signature below I state that I have read, understand, and will comply with all requirements specified in the RWP indicated.

DATE 4-18-97

NAME <u>Deborah Crossno</u>	BADGE NUMBER <u>626079</u>	TIME IN <u>13:20</u>	TIME IN	TIME IN	TIME IN
SIGNATURE <u>Deborah Crossno</u>	RWP NUMBER <u>3038-97-0002A</u>	TIME OUT <u>14:25</u>	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT

COPY

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

By my signature below I state that I have read, understand, and will comply with all requirements specified in the RWP indicated.

DATE 4-18-97

NAME <u>Deborah Crossno</u>	BADGE NUMBER <u>626079</u>	TIME IN <u>13:20</u>	TIME IN	TIME IN	TIME IN
SIGNATURE <u>Deborah Crossno</u>	RWP NUMBER <u>3038-97-0002A</u>	TIME OUT <u>14:25</u>	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT
NAME	BADGE NUMBER	TIME IN	TIME IN	TIME IN	TIME IN
SIGNATURE	RWP NUMBER	TIME OUT	TIME OUT	TIME OUT	TIME OUT

COPY

Protocol #: 2 Name: H-3 DPM 18-Apr-97 14:35
 Region A: LL-UL= 0.0-18.6 Lcr= 0 Bkg=26.00 %2 Sigma=0.00
 Region B: LL-UL= 2.0-18.6 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Region C: LL-UL= 0.0- 0.0 Lcr= 0 Bkg= 0.00 %2 Sigma=0.00
 Time = 1.00 QIP = tSIE/AEC ES Terminator = Count
 Conventional DPM
 Nuclide 1 = 202278
 Warning: User program changes may have invalidated DPM calculations

S#	TIME	CPMA	DPM1 A:25%	CPM2	SIE -SIE	CPM	CPM
1	1.00	46.00	117.14 20.57	46.00	8.080	391.	24 Hands
2	1.00	293.00	215.93 11.20	306.00	8.787	338.	15 SHOES
3	1.00	2.00	4.97 37.80	25.00	8.770	394.	50 Face

Deborah Crossino
 626079

RWP# 3038-97-0002A
 Bldg 7025

NAME (HP&S) <i>Janet Cox</i>		PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>7025 Hood + Surroundings</i>	DATE <i>6/20/94 1230</i>
SMEARS NUMBERED: From <i>1</i> To <i>27</i>		RESULTS REQUIRED: Date _____ Time _____		DATE COUNTED	COUNTER OPERATOR <i>See</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>N/A</i> d/m β		REMARKS: <i>CTA-041, Smears taken in Uranium hood and surrounding area. Smears inside hood were taken on top of strippable paint.</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	—		34			67		
2	406		35			68		
3	110		36			69		
4	314		37			70		
5	154		38			71		
6	31		39			72		
7	50		40			73		
8	312		41			74		
9	—		42			75		
10	53		43			76		
11	—		44			77		
12	58		45			78		
13	103		46			79		
14	341		47			80		
15	93		48			81		
16	89		49			82		
17	39		50			83		
18	65		51			84		
19	50		52			85		
20	122		53			86		
21	—		54			87		
22	508	floor under hood	55			88		
23	2675	on diffusion pump under hood	56			89		
24	118	under hood on ceiling	57			90		
25	242	W. Wall under hood	58			91		
26	1771	E. wall under hood	59			92		
27	1289	steel plate NE corner under hood	60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

Inside hood. See Map

Before disassembling hood.

Floor outside of hood.

NAME (HP&S) <i>Janet Cox</i>		PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>3039</i>	LOCATION (SMEARS TAKEN) <i>7025 Hood + Surroundings</i>	DATE <i>6/20/94 1230</i>
SMEARS NUMBERED: From <i>1</i> To <i>27</i>		RESULTS REQUIRED:		DATE COUNTED	COUNTER OPERATOR <i>gpc</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>N/A</i> d/m β		REMARKS: <i>CTA-041, Smears taken in Uranium hood and surrounding area. Smears inside hood were taken on top of strippable paint.</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	—		34			67		
2	406		35			68		
3	110		36			69		
4	314		37			70		
5	154		38			71		
6	31		39			72		
7	50		40			73		
8	312		41			74		
9	—		42			75		
10	53		43			76		
11	—		44			77		
12	58		45			78		
13	103		46			79		
14	341		47			80		
15	93		48			81		
16	89		49			82		
17	39		50			83		
18	65		51			84		
19	50		52			85		
20	182		53			86		
21	—		54			87		
22	508	floor under hood	55			88		
23	2675	on diffusion pump under hood	56			89		
24	118	under hood on ceiling	57			90		
25	242	W. Wall under hood	58			91		
26	1771	E. wall under hood	59			92		
27	1289	steel plate NE corner under hood	60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

Inside hood. see map

Before disassembling hood

Floor outside of hood.

6/20/94 @ 1230
by Janet Cox #32721
Smears taken as initial
survey before dis-
assembling hood.
CTA-841, 3038-1B

Surveyed on outer
surfaces only.

on doors
South

6/20/94 @ 1230
7025 by Janet Cox #32721
CTA-041. Smears taken as
initial survey before removing
(or disassembling) hood.

7025 Uranium Hood

This is survey result
while hood was being
disassembled. 3038-1B
6/22/94 Janet Cox
32721

ORNL Radiological Survey Data

Slater 6/23/94

Survey Number: Spent Co. 32721 3038 Field OfficeDate: 6/22/94 Time: 1000

Give only DIM on areas over
20 dpm/100 cm² α
4 dpm/100 cm² β

Smears taken on floor after disassembling
 Uranium hood:

CTA-041

α	β
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33

(#)	- Smear Location	Boundary Designations	
(#)	- Large Area Smear	RA - Radiation Area	BA - Radiological Buffer Area
#	- Contact Dose Rate	HR - High Radiation Area	CA - Contamination Area
#	- 30 cm Dose Rate	VR - Very High Radiation Area	HC - High Contamination Area
#	- General Area Dose Rate	AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
[SOP]	- Step-off Pad	RM - Radioactive Materials Area	SC - Soil Contamination Area
AS	- Air Sample Location	UM - Underground Radioactive Materials Area	

Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

ATTACHMENT 6
ADMINISTRATIVE TURNOVER
PACKAGE CHECKLIST

Administrative Turnover Package Checklist

Item Number	Document	Applicable ?
1	FDPR	Yes
2	Emergency Response Plan	No
3	Safety Documentation (Category III or greater)	No
4	Regulatory Compliance Documentation	No
5	Interagency Agreements Documentation	No
6	Existing Permit Documentation	No
7	Corrective Action Documentation	No
8	Postdeactivation Punchlist	No
9	Deactivation Locks and Keys	Yes

ATTACHMENT 7
TECHNICAL TURNOVER
PACKAGE CHECKLIST

Technical Turnover Package Checklist

Item Number	Document	Applicable ?
1	End Point Determination Report	No
2	End Points Completion Report	No
3	End Point Technical Information	No
4	Deactivation Work Plans	No
5	Updated Facility Drawings (arrangement, PID, Loop, etc.)	No
6	"As Left" Photos of Spaces and Major Equipment	Yes
7	Hazardous Material Inventory and Survey	No
8	Safeguards and Security Documentation	No
9	Chemical Substance Inventory and Survey	No
10	Radioactive Materials Inventory and Survey	Yes
11	Facility Soil, Surface Water, and Groundwater Condition Report	No

**ATTACHMENT 8
S&M TURNOVER
PACKAGE CHECKLIST**

S&M Turnover Package Checklist

Item Number	Document	Applicable ?
1	Postdeactivation S&M Plan	Yes
2	Postdeactivation S&M Updated Effluent Monitoring Plan	No
3	Postdeactivation S&M Updated Safety Equipment List	No
4	Postdeactivation S&M Procedures	Yes
5	Postdeactivation S&M Recommendations	No
6	Mothballed Systems Lay-up and Restart Documentation	No

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