**ENVIRONMENTAL
RESTORATION
PROGRAM**

**Final Deactivation Report
on the Radioisotope Production Lab-E,
Building 3032,
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 Radioisotope Production Lab-E,
Building 3032,
at Oak Ridge National Laboratory,
Oak Ridge, Tennessee**

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OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37831
managed by
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
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PREFACE

This is the *Final Deactivation Project Report on the Radioisotope Production Lab-E, Building 3032, at Oak Ridge National Laboratory, Oak Ridge, Tennessee* (ORNL/ER-414). 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. 3032.

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EXECUTIVE SUMMARY

The purpose of this report is to document the condition of Bldg. 3032, after completion of deactivation activities as outlined by the Department of Energy (DOE) Office of Nuclear Materials and Facility Stabilization Program (EM-60) guidance documentation. This report outlines the activities conducted to place the facility in a safe and environmentally sound condition for transfer to the DOE Office of Environmental Restoration Program (EM-40).

This report provides a history and profile of Bldg. 3032 prior to commencing deactivation activities and a profile of the building after completion of deactivation activities. 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 are discussed.

Building 3032 will be used as the Health Physics Office for the Isotopes Facilities Deactivation Program area and will require access for these offices and to facilitate required surveillance and maintenance (S&M) activities to maintain the building safety envelope. Bldg. 3032 was stabilized during deactivation so that when transferred to the EM-40 program, only a minimal S&M effort would be required to maintain the building safety envelope.

All materials have been removed from the building, and all utility systems, piping, and alarms have been deactivated except electricity and steam needed for the office area.

ABBREVIATIONS

ALARA	As Low As Reasonably Achievable
CTD	Chemical Technology Division (ORNL)
D&D	Decontamination and Decommissioning
DOE	US Department of Energy
EM	DOE Office of Environmental Restoration and Waste Management
EM-40	Department of Energy Office of Environmental Restoration
EM-60	Office of Nuclear Materials and Facility Stabilization Program
ER	Environmental Restoration
FAB	Facility Authorization Basis
FDPR	Final Deactivation Project Report
IFDP	Isotopes Facilities Deactivation Project
LCD	Limiting Condition Document
LCO	Limiting Condition for Operation
LMES	Lockheed Martin Energy Systems, Inc.
MOA	Memorandum of Agreement
ORNL	Oak Ridge National Laboratory
RP	Radiation Protection
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 surveillance and maintenance 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.
Defense-in-Depth	Achieving required levels of safety and protection there is more than one layer of protection between the hazard and that which is being protected.
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.
End Point Technical Information	A compilation of documents to support end point conclusions.
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.

1. INTRODUCTION

1.1 PURPOSE

This report documents the condition of Bldg. 3032 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. This 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.

This report provides a profile of the facility before and after deactivation activities. 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 are discussed.

1.2 SCOPE

This report addresses the activities performed during deactivation associated with Bldg. 3032, 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, "Bldg. 3032 Floor Plan," provides a floor plan of Bldg. 3032 that illustrates the physical boundaries and scope of this Final Deactivation Project Report (FDPR). The scope of this FDPR is limited to Bldg. 3032.

2. BACKGROUND

2.1 FACILITY DESCRIPTION

Building 3032 is a steel-frame structure covered by corrugated aluminum siding. The single-story facility has a floor area of 825 ft². One laboratory type hood is located on the north wall of the building with four laboratory type hoods across the north middle section of the building. The remainder of the facility has been converted to offices. No high-level work was conducted in this building, which operates at atmospheric pressure. Ventilation to the hoods was provided by local ventilation and has been shut down.

A laboratory type work bench is located on the north wall and in the northeast corner. The bench in the northeast area has a sink.

2.2 FACILITY HISTORY

Building 3032 was constructed in 1950 as part of the Isotopes Program. The building contains facilities that were used for storage purification, processing, and dispensing of a wide variety of radioisotopes. These isotopes were processed primarily from irradiated targets from the High-Flux Isotope Reactor, the Oak Ridge Research Reactor, and the 86-in. Cyclotron.

3. FACILITY STATUS

3.1 PREDEACTIVATION FACILITY STATUS

Following approximately 40 years of operations and processing, Bldg. 3032 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.

3.1.1 Hazards Analysis

No predeactivation hazards analysis was performed. Because only process activities involving less than 100 ci were performed in Bldg. 3032, it was determined that the facility did not warrant a hazard analysis or safety analysis.

3.1.2 Internal Spaces

The general area contained furniture, cabinets, hazardous waste, radioactive waste, and various miscellaneous items used when the facility was in operation. The lead-based paint was chipping and peeling, providing a means of transferring contamination and endangering personnel and the environment. The facility has been remodeled to contain the Health Physics offices.

Predeactivation radioactive contamination levels and radiation levels for the general area are listed in Tables 1 and 2. Table 3 lists predeactivation hazardous materials and waste located in the general area.

3.1.3 Building Structure and External Spaces

The structure and roof of Bldg. 3032 were inspected and found to be in generally good condition, except for water leakage through various paths.

3.1.4 Process, Utility, and Support Systems

3.1.4.1 Electrical power system

Prior to deactivation, the electrical power system provided power distribution for the electrical service to Bldg. 3032. Typical electrical loads were the lighting, heaters, and exhaust fans. A 480-VAC outlet also existed for use with welders and other equipment requiring this service.

3.1.4.2 Fire protection system

The fire protection system is a dry pipe fire suppression system for Bldg. 3032 and is available for use. The general area was equipped with sprinkler heads and alarms as required by the local fire code. In addition, fire extinguishers were placed strategically in and around Bldg. 3032. The fire protection system is not believed to be contaminated.

3.1.4.3 Building steam system

The building steam system provided steam for use in heating the general area of Bldg. 3032. Two heat exchangers located in Bldg. 3032 provided space heating for personnel.

The building steam system is not believed to be contaminated. However, most of the steam piping within Bldg. 3032 is lagged with asbestos insulation materials.

3.1.4.4 Potable water system

Prior to deactivation, the potable water system provided water to the Bldg. 3032 safety shower, hot water heater, and sink. The potable water system is not believed to be contaminated.

3.1.4.5 Hot drain system

Prior to deactivation, the hot drain system provided a means of discharging liquid process wastes from the north wall hood to the LLLW system. The hot drain system is a gravity drain system to the WC-10 tank in the Low-Level Liquid Waste (LLLW) system.

The hot drain system is highly contaminated from the process and cleaning activities performed prior to deactivation.

3.1.4.6 Process drain system

Prior to deactivation, the process drain system provided a means of removing liquids from the area floor to the Oak Ridge National Laboratory (ORNL) process waste system and treatment facility. The process drain system is a gravity drain system.

The process drain system was determined to be contaminated from the process and cleaning activities performed prior to deactivation.

3.1.4.7 Natural gas system

The natural gas system to Bldg. 3032 was never used. The system has remained isolated from the building since the time of its installation and is not believed to be contaminated.

3.1.4.8 Plant air system

Prior to deactivation, the plant air system provided 110 psig air to Bldg. 3032. The plant air system was regulated and used for process activities and instrumentation throughout the facility. The plant air system is not believed to be contaminated.

3.1.4.9 Central ventilation system

Before deactivation, the central ventilation system provided exhaust ventilation services to the hoods in Bldg. 3032. This system was not filtered through HEPA filters prior to discharge to the 3039 stack. It was shutdown in the early 1980s, and a local system with HEPA filtration was installed.

3.1.4.10 Local ventilation system

Before deactivation, the local ventilation system provided exhaust ventilation services to the hoods in Bldg. 3032. This system was filtered through HEPA filters prior to discharging to the atmosphere.

The local ventilation system was determined to be very slightly contaminated from the process activities performed before deactivation.

3.1.5 Radioactive Material, Contamination, and Waste

Table 1 lists the radioactive contamination levels identified on radiation surveys conducted before deactivation; Table 2 lists radiation levels identified on radiation surveys conducted before deactivation.

Table 1. Predeactivation Radioactive Contamination Levels

Identification	Description	Quantity
Hood #1	Alpha smear - transferable contamination	Less than 20 dpm/100cm ²
Hood #1	Beta/gamma smear - transferable contamination	110,000 dpm/100cm ²
Hood #2	Alpha smear - transferable contamination	Less than 20 dpm/100cm ²
Hood #2	Beta/gamma smear - transferable contamination	50,000 dpm/100cm ²
Hood #3	Alpha smear - transferable contamination	Less than 20 dpm/100cm ²
Hood #3	Beta/gamma smear - transferable contamination	25 mr/hr/100cm ²
Hood #4	alpha smear - transferable contamination	up to 2425 dpm/100cm ²
Hood #4	beta/gamma smear - transferable contamination	up to 4991 dpm/100cm ²
Hood #5	alpha smear - transferable contamination	up to 216 dpm/100cm ²
Hood #5	beta/gamma smear - transferable contamination	up to 9905 dpm/100cm ²
General Area	alpha smear - transferable contamination	less than 20 dpm/100cm ²
General Area	beta/gamma smear - transferable contamination	less than 200 dpm/100cm ²

Table 2. Predeactivation Radiation Levels

Identification	Description	Quantity
Hood #1	fixed and transferable radiation levels	60,000 dpm
Hood #2	fixed and transferable radiation levels	50,000 dpm
Hood #3	fixed and transferable radiation levels	25 mr/hr
Hood #4	fixed and transferable radiation levels	59,400 dpm
Hood #5	fixed and transferable radiation levels	25 mr/hr
General area	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. 3032 Predeactivation Hazardous Materials and Waste

Identification	Description	Quantity
Lead-based paint	Used as wall covering throughout building.	indeterminate
Asbestos floor tiles	Used as floor covering throughout the building.	Approx. 825 sq.ft.
Asbestos lagging	Used as pipe lagging throughout the building	indeterminate
PCBs	Electrical devices and transformers	indeterminate
Lead shielding	Used in hot cell walls and window	indeterminate
Mineral oil	Used in hot cell window	indeterminate

3.2 POST DEACTIVATION FACILITY STATUS

Attachment 3, "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. 3032. The requirement and guidance for these program elements were not developed prior to Bldg. 3032 deactivation.

3.2.2 Hazards Analysis

A postdeactivation hazards screening was performed. This hazards screening placed the facility in the "other industrial" category.

3.2.3 Internal Spaces

The miscellaneous items abandoned when the facility was no longer in use have been removed from the general area. No significant combustibles remain in the general area, and the general area of Bldg. 3032 has been decontaminated to remove transferable contamination from access-required spaces. The building has been painted in the occupied areas.

Postdeactivation radioactive contamination levels and radiation levels for this area are listed in Tables 4, "Postdeactivation Radioactive Contamination Levels," and Table 5, "Postdeactivation Radiation Levels"; respectively.

Postdeactivation hazardous materials and waste located in this area are listed in Table 6, "Bldg. 3032 Postdeactivation Hazardous Materials and Waste."

3.2.4 Building Structure and External Spaces

The structure and roof of Bldg. 3032 were inspected and found to be in generally good condition, with the exception of some water inleakage through various paths.

3.2.5 Process, Utility and Support Systems

3.2.5.1 Electrical power system

All electrical services, except for lighting and HVAC systems, have been disconnected or de-energized at the main breaker box.

3.2.5.2 Fire protection system

The fire protection system is a dry system and remains available for use if there is a fire.

3.2.5.3 Building steam system

The building steam system, other than heating, has been isolated, drained, and abandoned in place.

3.2.5.4 Potable water system

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

3.2.5.5 Hot drain system

The hot drain system has been abandoned in place. All hot drains have been plugged to isolate the drains and to prevent the potential spread of contamination.

The hot drain system remains contaminated from the process and cleaning activities performed prior to deactivation.

3.2.5.6 Process drain system

The process drain system has been abandoned in place. However, the process drain system remains connected to the ORNL process waste system.

The process drain system remains contaminated from the process and cleaning activities performed prior to deactivation.

3.2.5.7 Natural gas system

The natural gas system has been isolated, vented, and abandoned in place.

3.2.5.8 Plant air system

The plant air system has been isolated, vented, and abandoned in place.

3.2.5.9 Local ventilation system

The local ventilation system has been removed from service and shut down. It is slightly contaminated from the process activities performed prior to deactivation.

3.2.6 Radioactive Material, Contamination, and Waste

Table 4 lists the radioactive contamination levels identified on radiation surveys conducted following deactivation; Table 5 lists radiation levels identified on radiation surveys conducted prior to deactivation.

Table 4. Postdeactivation Radioactive Contamination Levels

Identification	Description	Quantity
Hood #1	alpha smear - transferable contamination	less than 20 dpm/100cm ²
Hood #1	beta/gamma smear - transferable contamination	less than 200 dpm/100cm ²
Hood #2	alpha smear - transferable contamination	less than 20 dpm/100cm ²
Hood #2	beta/gamma smear - transferable contamination	less than 200 dpm/100cm ²
Hood #3	alpha smear - transferable contamination	less than 20 dpm/100cm ²
Hood #3	beta/gamma smear - transferable contamination	up to 75,000 dpm/100cm ²
Hood #4	alpha smear - transferable contamination	up to 235 dpm/100cm ²
Hood #4	beta/gamma smear - transferable contamination	up to 408 dpm/100cm ²
Hood #5	alpha smear - transferable contamination	up to 178 dpm/100cm ²
Hood #5	beta/gamma smear - transferable contamination	up to 293 dpm/100cm ²
General area	alpha smear - transferable contamination	less than 20 dpm/100cm ²
General area	beta/gamma smear - transferable contamination	less than 200 dpm/100cm ²
Attic	alpha smear - transferable contamination	up to 2626 dpm/100cm ²
Attic	beta/gamma smear - transferable contamination	up to 707 dpm/100cm ²

Table 5. Postdeactivation Radiation Levels

Identification	Description	Quantity
Hood #1	fixed and transferable radiation levels	60,000 dpm
Hood #2	fixed and transferable radiation levels	50,000 dpm
Hood #3	fixed and transferable radiation levels	25 mr/hr
Hood #4	fixed and transferable radiation levels	59,400 dpm
Hood #5	fixed and transferable radiation levels	25 mr/hr
General Area	fixed and transferable radiation levels	0.1 mRem/hr

3.2.7 Hazardous Materials and Waste

Table 6 lists the hazardous materials and waste identified during facility walkdowns following deactivation.

Table 6. Bldg. 3032 Postdeactivation Hazardous Materials and Waste

Identification	Description	Quantity
Lead-based paint	Used as wall covering throughout building	indeterminate
Asbestos floor tiles	Used as floor covering throughout the building	approx. 825 sq.ft.
Asbestos lagging	Used as pipe lagging throughout the building	indeterminate
PCBs	Electrical devices and transformers	indeterminate
Lead shielding	Used in hot cell walls and window	indeterminate
Mineral oil	Used in hot cell window	indeterminate

4. BLDG. 3032 DEACTIVATION ACTIVITIES

The following section addresses the major activities performed during the deactivation of Bldg. 3032. The objectives of the deactivation process were to place the facility in a passively safe and environmentally stable configuration which can be efficiently and cost effectively maintained indefinitely. The major deactivation issues, with regard to Bldg. 3032, are listed below:

4.1 INTERNAL SPACES; ACCESS REQUIRED

4.1.1 General Areas

All unneeded 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.

The asbestos floor tiles were not removed and are not intended to be removed until facility decontamination and decommissioning.

The building walls are covered with lead-based paint throughout. Peeling and flaking areas have been repaired and repainted in the occupied area; the remainder of the paint will remain as is. Paint condition is an inspection item in the S&M plan for Bldg. 3032.

4.2 INTERNAL SPACES; NO ACCESS REQUIRED

4.2.1 3032 Hood Area

The hood area of the building was walled off to completely segregate it from the area to be occupied. The hoods were cleaned and sealed to prevent the spread of contamination. The local ventilation system serving the hoods was shut down and left in place. The hot drain in one hood was plugged. Areas to the hood area are controlled by locked doors.

4.3 EXTERNAL SPACES

4.3.1 Bldg. 3032 Structure

The exterior of Bldg. 3032 was inspected and found to be in generally good structural condition. The building exterior has been cocooned to eliminate air and water inleakage and to provide an effective containment for the building.

4.3.2 Bldg. 3032 Roof

The roof of Bldg. 3032 was repaired/inspected and found to be in generally good structural condition.

4.4 OPERATIONAL SYSTEMS

4.4.1 Electrical Power System

All electrical services that were not essential to the basic surveillance and maintenance operations or needed in the occupied area were disconnected at the main breaker box.

4.4.2 Fire Protection System

The fire protection system is a dry pipe delivery system available for use in case of a fire.

4.4.3 Hot Drain System

The hot drain from the hood was plugged with Plexiglas to isolate the hood and prevent the spread of contamination. No decontamination of the hot drain system has been performed.

4.4.4 Process Drain System

The process floor drains remain in operation to direct any roof inleakage to the ORNL process waste system and prevent any uncontrolled contamination from leaving the building. No decontamination of the process drain system has been performed.

4.4.5 Local Ventilation System

The local ventilation system has been removed from service and shut down in place. No decontamination of the local ventilation system has been performed.

4.5 MOTHBALLED SYSTEMS

There are no "mothballed" systems associated with Bldg. 3032.

4.6 ABANDONED SYSTEMS

4.6.1 Potable Water System

The incoming line of the potable water has been capped to isolate it from Bldg. 3032.

4.6.2 Natural Gas System

Natural gas was vented and valved off.

4.6.3 Plant Air System

The plant air system has been depressurized and valved off.

5. TRANSITION ACTIVITIES

Building 3032 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 POST-TRANSITION ACTIVITIES

No post-transition punchlist items have been identified for Bldg. 3032. All deactivation activities have been completed prior to transfer to EM-40.

6. POSTDEACTIVATION S&M

The "Postdeactivation S&M Plan for Bldg. 3032" covers S&M activities associated with the interior spaces, operational and mothballed systems, and external areas related to Bldg. 3032.

The specific objectives of the S&M program for Bldg. 3032 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 Bldg. 3032" details the specific S&M items to be performed and estimates the annual cost of performance. The S&M cost estimates are based on previous operational costs associated with similar S&M activities at ORNL.

The S&M activities associated with Bldg. 3032 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 envelope of the facility.

7. ABNORMAL ACTIVITIES/CONDITIONS

No abnormal activities/conditions have been identified for Bldg. 3032.

8. TURNOVER PACKAGE DOCUMENTATION

8.1 ADMINISTRATIVE TURNOVER PACKAGE

Administrative turnover consists of a collection of administrative documents. This includes procedures, agreements, 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 4, "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 Bldg. 3032.

8.1.1 Final Deactivation Project Report

The FDPR is a management summary of the facility deactivation completion, general status and conditions, that demonstrates 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 Regulatory Compliance Documentation

Regulatory compliance documentation addresses the status/compliance of all regulatory commitments; for example, status of compliance with applicable regulations promulgated pursuant to statutes, such as Occupational Safety and Health Administration, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act, the National Environmental Policy Act and the remediation process in the National Contingency Plan.

8.1.3 Interagency Agreements Documentation

Interagency Agreements identify the terms and milestones of agreements pending and entered into by DOE with federal, state, and local agencies and the status of compliance. This includes settlement agreements, administrative or consent orders, and compliance plans to settle outstanding notices of violation.

8.1.4 Existing Permit Documentation

Existing permit documentation addresses the status of existing permits, including National Pollutant Discharge Elimination System (NPDES), air permits, RCRA, and others associated with the facility.

8.1.5 Corrective Action Documentation

Corrective action documentation the status of corrective actions completed and outstanding, from previous audits, inspections, and other similar activities (e.g., Tiger Team, Technical Safety Appraisal, Defense Nuclear Facility Safety Board, regulatory agencies, self assessments, business systems review), including identification of those items that need to be reevaluated and reviewed with respect to the facility's surplus condition.

8.1.6 Deactivation Locks Log and Keys

All deactivation locks and keys for facility access, isolation of electrical components, chaining of valves, and other situations where physical access is to be controlled will be turned over to EM-40 at the time of transfer.

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 5, "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 Bldg. 3032.

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

Updated facility drawings consist of 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.

This documentation provides current status (including drawings) of the deactivation/safe shutdown (if applicable). The documentation addresses systems, such as the water, sewer, air, electric, gas, process (mechanical and chemical) and fire protection systems. Table 7 lists updated drawings for Bldg. 3032; Attachment 7 contains the entire drawing list.

Table 7. Bldg. 3032 Updated Drawings

Number	Rev.	Title
H203369EG-002-D	001	A/C Elec. Roof Plan A/C Units Isotope Area
D-51926	A	Enclosure Buildings 3030 and 3032 - Ventilation
D-51926		Piping, Htg. & Vent.

8.2.2 "As Left" Photos of Spaces and Major Equipment

"As left" documentation contains descriptions/photos of spaces for which access is not anticipated during S&M.

8.2.3 Hazardous Material Inventory and Survey

The hazardous material inventory and survey describes the location(s) of *fixed* hazardous materials, wastes, and contamination along with characterization information.

8.2.4 Safeguards and Security Documentation

Inventory and Safeguards and Security documentation provides for nuclear or other material remaining in the facility for which there is a requirement for accountability or protection from diversion.

8.2.5 Chemical Substance Inventory and Survey

Inventory of chemical and hazardous substances remaining, if any, is taken, and characterization information is gathered.

8.2.6 Radioactive Materials Inventory and Survey

Inventory of radioactive and fissile material remaining as contamination is taken, and characterization information is gathered. (Attachment 8 contains radiological survey data.) The final radiological/hazardous materials survey records, final configuration, and surveillance and maintenance requirements, available drawings, specifications, procedures, manuals, and unplanned occurrences records applicable to the facility.

8.2.7 Facility Soil, Surface Water, and Groundwater Condition Report

The facility soil, surface water, and groundwater condition report documents the conditions of those media at the facility and lists all available data and reports that describe those conditions and the nature and extent of contamination therein; this report also identifies any known assessment requirements.

8.3 S&M TURNOVER PACKAGE

The S&M turnover package 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 6, "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 Bldg. 3032.

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 Updated Safety Equipment List

This document describes the safety equipment, which will remain in the facility during the postdeactivation S&M period.

8.3.3 Postdeactivation S&M Procedures

There are no postdeactivation S&M procedures for Bldg. 3032.

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 Oak Ridge National Laboratory, August 1995
	Oak Ridge National Laboratory; Local Emergency Manual, Isotope Area, Revision 94-1, January 1994

10. ATTACHMENTS

1. Bldg. 3032 Floor Plan
2. Bldg. 3032 Predeactivation Facility Photographs
3. Bldg. 3032 Postdeactivation Facility Photographs
4. Administrative Turnover Package Checklist
5. Technical Turnover Package Checklist
6. S&M Turnover Package Checklist
7. Bldg. 3032 Drawing List
8. Bldg. 3032 Radiological Survey Data

ATTACHMENT 1
BLDG. 3032
FLOOR PLAN

 

Building 3032 Floor Plan

ATTACHMENT 2
BLDG. 3032
PREDEACTIVATION FACILITY PHOTOGRAPHS

ATTACHMENT 3
BLDG. 3032
POSTDEACTIVATION FACILITY PHOTOGRAPHS

ATTACHMENT 4
ADMINISTRATIVE TURNOVER
PACKAGE CHECKLIST

Administrative Turnover Package Checklist

Item Number	Document	Applicable ?
1	Final Deactivation Project Report	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 5
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.)	Yes
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	No
11	Facility Soil, Surface Water, and Groundwater Condition Report	Yes

**ATTACHMENT 6
S&M TURNOVER
PACKAGE CHECKLIST**

S&M Turnover Package Checklist

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

ATTACHMENT 7
BLDG. 3032
DRAWING LIST

Bldg. 3032 Drawing List

Document Number	Revision	Title
A20372EB-001-A		Roof maintenance plan Bldg. 3032
B-7693		Cylinder adapter dets
C-12033		Pyrex tube
C-14714		Det of sulphur melting sta sht 2
C-15615		Reactor and bracket sect
C-35835		Plan and sects
C-6750		Hydraulic sys wiring dia P32 process equipment
C-7819		Hydraulic system and wiring
D-11932		Extractor hood steel framing plan and sect
D-11933		Extractor hood, hood covering plan & det
D-11934		Extractor hood drain pan dets
D-11935		Extractor hood, hood equip dets
D-11936		Extractor hood location plan and piping dets
D-14712		Assy of sulphur melting sta
D-14713		Det of sulphur melting sta sht 1
D-14715		Control panel assy dets & wiring diag
D-29598	A	Proposed irradiation can
D-32215		Conc pad & access driveway plot plan
D-32216		Conc pad & access driveway sect & det
D-6628		Isotope proc area service piping plan sect det
D-6736		Floor plan & piping
D-6738		Reactor frame dets sht 1
D-6739		Reactor frame dets sht 2
D-6740	B	Reactor outlet fittings
D-6741		Indicating & control device assy
D-6742		Indicating & control device dets
D-6743		Sulphur furnace mount assy
D-6744		Sulphur furnace mount det sht 1
D-6745		Sulphur furnace mount det sht 2
D-6746		Sulphur cap wrench
D-6747		Sulfur can tongs assy det P32 process eqpt
D-6748		Transfer shield for sulfur can
D-6749		Valve oper mechanism

Bldg. 3032 Drawing List (continued)

Document Number	Revision	Title
D-6751		Barrier det assy
D-6752		Drawer & tank assy
D-6753		Drawer & tank dets
D-6755		Barrier exh layout
D-6872		P-32 process equip valve oper mech
D-6974		Sulfur can assy & dets
D-6975		Sulfur can elevator & dets
D-6976		Misc dets
D-7754		Sulfur can tongs dets sh 1 P32 process eqpt
D-8327		Steel framing plan & sects
D-8328		Hood covering dets
D-8329		Hood exh connections pl and elev
D-8330		Bottom pan & shelf dets
D-8686		Hood for reactor & basket elect. plan & elev
E-6737		Reactor assy
E-8651		Melter shield & hook
H20372EG-003-D		A/C elec struct roof plan struct dets
H3E-20011-G026		RWFI-isotope area - roof plan, cell vent and off-gas
H3E-20011-G035		RWFI-isotope area - Bldg. 3032 attic plan, cell vent & off-gas
X1989-0032-0003-006		Isotope processing facility functional criteria

ATTACHMENT 8
BLDG. 3032
RADIOLOGICAL SURVEY DATA

SMEAR SURVEY: Alpha ☒ Beta/Gamma ☒ Beta ☐ **PROBE SURVEY:** Alpha ☒ Beta/Gamma ☒ BETA ☐

Give only DM on spread over MDA:

<u>20</u>	4 ppm/100 cm ²
200	4 ppm/100 cm ²

α	β
1	34
2	35
3	36
4	37
5	38
6	39
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	62
30	63
31	64
32	65
33	66

COPY

NTM	Neutron Monitron
(A)	Airborne Radioactivity
(AP)	Alpha Probe Location
(S)	Smear Location
# @	Contact Beta/Gamma
# @	1 Foot Dose Rate
#	Fast Neutron Dose Rate
#	Beta/Gamma Dose Rate

CAM	Continuous Air Monitor
CAAM	Contin. Alpha Air Mon.
LMA	Lab Monitor Alpha
LMB	Lab Monitor Beta/Gam.
MCU	Monitron Control Unit
MOC	Monitron Chamber
MON	Monitron
	REGULATED AREA

- RAD -Radiation Area
H.RAD -High Radiation Area
V.H.RAD -Very High Radiation Area
CON -Contamination Area
RAD/CON -Radiation & Contamin

SMEAR SAMPLE DATA

NAME (HP&S) <i>J A Miller</i>		PHONE <i>32621 4-6524</i>	BLDG. NO. (HP&S) <i>3001</i>	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>2-8-93</i>
SMEARS NUMBERED: From <i>1</i> To <i>26</i>		RESULTS REQUIRED: Date _____ Time _____		DATE COUNTED <i>2-8-93</i>	COUNTER OPERATOR <i>J A Miller</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β		REMARKS: <i>CTA-012</i> <i>CTB-004</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	—		34			67		
2	—		35			68		
3	—		36			69		
4	—		37			70		
5	—		38			71		
6	—		39			72		
7	—		40			73		
8	—		41			74		
9	—		42			75		
10	—		43			76		
11	—		44			77		
12	—		45			78		
13	—		46			79		
14	—		47			80		
15	—		48			81		
16	—		49			82		
17	—		50			83		
18	—		51			84		
19	—		52			85		
20	—		53			86		
21	—		54			87		
22	—	<i>307</i>	55			88		
23	—	<i>4216</i>	56			89		
24	—	<i>1824</i>	57			90		
25	—	<i>2772</i>	58			91		
26	—		59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

BUILDING 3032 LOCATION WEST DRAWERS/N. MOOD DATE 2-8-93 SURVEYOR [Signature]SMEAR SURVEY: Alpha ☒ Beta/Gamma ☒ Beta ☐ PROBE SURVEY: Alpha ☒ Beta/Gamma ☒ BETA ☐INSTRUMENTS: 3047-1B 3047-7P COUNTERS: CA-032 CIB-001 BACKGROUND SURVEY: BETA/GAMMA ☐ NEUTRON ☐

NTM Neutron Monitor

Ⓐ Airborne Radioactivity

Ⓐ Alpha Probe Location

Ⓢ Smear Location

Ⓢ @ Contact Beta/Gamma

Ⓢ @ 1 Foot Dose Rate

Ⓢ Fast Neutron Dose Rate

Ⓢ Beta/Gamma Dose Rate

CAM Continuous Air Monitor

CAAM Contin. Alpha Air Mon.

LMA Lab Monitor Alpha

LMB Lab Monitor Beta/Gam.

MOU Monitor Control Unit

MOC Monitor Chamber

MON Monitor

REGULATED AREA

RAD - Radiation Area

H.RAD - High Radiation Area

V.H.RAD - Very High Radiation Area

CON - Contamination Area

RAD/CON - Radiation & Contaminat

SMEAR SAMPLE DATA

HP&SI <i>HP&SI</i>	PHONE 4-6706	BLDG. NO. (HP&SI) 3047	LOCATION (SMEARS TAKEN) 3032	DATE 2-8-93
SMEARS NUMBERED: From 1 To 15	RESULTS REQUIRED: Date 2-8-93 Time 2210		DATE COUNTED 2-8-93	
GIVE D/M ONLY ON SMEARS OVER: 20 d/m α 200 d/m β		REMARKS: 3032 RUG- AREA SURVY		
			COUNTER OPERATOR <i>CTB-032</i> CTB-001	

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (
1	30	<200 0/5 D#1	34			67		
2	<20	297 1/5 D#1	35			68		
3		330 5K B/5 D#1	36			69		
4		297 8K B/5 D#1	37			70		
5	<20	<200 3K B/5 D#1	38			71		
6	93	<200 740 α D#1	39			72		
7	4946	858 16.6K α D#1	40			73		
8	<20	<200 0/5 D#2	41			74		
9		1/5 D#2	42			75		
10		1K B/5 D#2	43			76		
11		<200 0/5 D#3	44			77		
12		1/5 D#3	45			78		
13		<200 9K B/5 H/5	46			79		
14		341 8K B/5 H/5	47			80		
15	<20	<200 1.5K B/5 H/5	48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

BUILDING 3032 LOCATION MISSING PROWLER / EAST OF H. HALL DATE 2-9-93 SURVEYOR [Signature]SMEAR SURVEY: Alpha ☒ Beta/Gamma ☒ Beta ☐ PROBE SURVEY: Alpha ☒ Beta/Gamma ☒ BETA ☐INSTRUMENTS: 3047-11P 3047-1B COUNTERS: CTB-02 CTB-01 BACKGROUND SURVEY: BETA/GAMMA ☐ NEUTRON ☐

Give only DAD on smear over MDA:

2.0	dpm/100 cm ² α
2.00	dpm/100 cm ² β

PAGE 1 OF 5

α	β
1	34
2	35
3	36
4	37
5	38
6	39
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	62
30	63
31	64
32	65
33	66

NTM Neutron Monitor	CAM Continuous Air Monitor	RAD -Radiation Area
A Airborne Radioactivity	CAAM Contin. Alpha Air Mon.	H.RAD -High Radiation Area
Δ Alpha Probe Location	LMA Lab Monitor Alpha	V.H.RAD -Very High Radiation Area
⊙ Smear Location	LMB Lab Monitor Beta/Gam.	CON -Contamination Area
# @ Contact Beta/Gamma	MOU Monitron Control Unit	RAD/CON -Radiation & Contaminatio
# @ 1 Foot Dose Rate	MOC Monitron Chamber	
# Fast Neutron Dose Rate	MON Monitron	
# Beta/Gamma Dose Rate	REGULATED AREA	

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

BUILDING 3032 LOCATION NORTHEAST CABINET (ON NORTH WALL) DATE 2-9-93 SURVEYOR [Signature]
~~NORTH CABINET UNDER CASE 100~~

SMEAR SURVEY: Alpha ☒ Beta/Gamma ☒ Beta ☐ PROBE SURVEY: Alpha ☒ Beta/Gamma ☒ BETA ☐

INSTRUMENTS: 3047-1A 3047-1B COUNTERS: CTA-23 CTB-001 BACKGROUND SURVEY: BETA/GAMMA ☐ NEUTRON

Give only DM on stairs over MDA:

 $\frac{4\pi \times 100 \text{ cm}^2}{\text{m}^2} \times$ $4 \text{ pmol/100 cm}^2 \text{ s}$

α	β
1	34
2	35
3	36
4	37
5	38
6	39
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	62
30	63
31	64
32	65
33	66

PAGE 2 OF 465

NTM	Neutron Monitor
(A)	Airborne Radioactivity
(A)	Alpha Probe Location
(S)	Smear Location
# @	Contact Beta/Gamma
# @	1 Foot Dose Rate
(#)	Fast Neutron Dose Rate
.#	Beta/Gamma Dose Rate

CAM	Continuous Air Monitor
CAAM	Contin. Alpha Air Mon.
LMA	Lab Monitor Alpha
LMB	Lab Monitor Beta/Gam.
MCU	Monitron Control Unit
MOC	Monitron Chamber
MON	Monitron
	REGULATED AREA

RAD -Radiation Area

H.RAD -High Radiation Area

V.H.RAD -Very High Radiation Area

CON -Contamination Area

RAD/CON -Radiation & Contamination Area

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

BUILDING 3032 LOCATION NORTH CABINET UNDER EAST SINK DATE 2-9-93 SURVEYOR [Signature]SMEAR SURVEY: Alpha ☒ Beta/Gamma ☒ Beta ☐ PROBE SURVEY: Alpha ☒ Beta/Gamma ☒ BETA ☐INSTRUMENTS: 3047-1P 3047-1B COUNTERS: CYA-032 CTB-101 BACKGROUND SURVEY: BETA/GAMMA ☐ NEUTRON

Give only D/M on smears over MDA:

20	dpm/100 cm ² s
200	dpm/100 cm ² s

PAGE 3 OF 5

α	β
1	34
2	35
3	36
4	37
5	38
6	39
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	62
30	63
31	64
32	65
33	66

NTM Neutron Monitor (A) Airborne Radioactivity (A) Alpha Probe Location (S) Smear Location @ Contact Beta/Gamma @ 1 Foot Dose Rate [F] Fast Neutron Dose Rate .# Beta/Gamma Dose Rate	[CAM] Continuous Air Monitor [CAAM] Contin. Alpha Air Mon. [LMA] Lab Monitor Alpha [LMB] Lab Monitor Beta/Gam. [NOU] Monitor Control Unit [MOC] Monitor Chamber [MON] Monitor [] REGULATED AREA	[RAD] -Radiation Area [H.RAD] -High Radiation Area [V.H.RAD] -Very High Radiation Area [CON] -Contamination Area [RAD/CON] -Radiation & Contaminatio
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SMEAR SAMPLE DATA

PAGE 4 OF 486

(HP&S) <i>[Signature]</i>		PHONE 4-6786	BLDG. NO. (HP&S) 3047	LOCATION (SMEARS TAKEN) 3032 ROT. AREA	DATE 2-9-93
SMEARS NUMBERED: From 1 To 45		RESULTS REQUIRED: Date 2-10-93 Time 1000		DATE COUNTED 2-10-93	COUNTER OPERATOR <i>[Signature]</i>
GIVE D/M ONLY ON SMEARS OVER: 20 d/m α 200 d/m β		REMARKS: SMEARS FROM 3032, 2-9-93 OK			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 985	286		34 <20	<200		67		
2 60	<200		35			68		
3 <20			36			69		
4			37			70		
5			38			71		
6			39		N. FLOOR	72		
7			40		S. FLOOR	73		
8			41		1/2 DRAWER	74		
9			42	<200	9/5 DRAWER	75		
10			43	264	3.3K-850 1ST CAB.	76		
11			44	<200	CAB. HANDLE	77		
12			45 <20	275	10K SPOT UNDER DRAWER	78		
13			46			79		
14			47			80		
15 <20			48			81		
16 42			49			82		
17 115			50			83		
18 <20			51			84		
19 22			52			85		
20 <20			53			86		
21			54			87		
22			55			88		
23	<200		56			89		
24	462		57			90		
25	462		58			91		
26	<200		59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33 <20	<200		66			99		

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

BUILDING 3032 LOCATION SOUTH CABINET UNDER BOAT SW DATE 2-9-93 SURVEYOR J.B. TREEN ³³⁰²⁵SMEAR SURVEY: Alpha ☒ Beta/Gamma ☒ Beta ☐ PROBE SURVEY: Alpha ☒ Beta/Gamma ☒ BETA ☐
INSTRUMENTS: 347-122 5805-5B COUNTERS: CRA-042 CGR-052 BACKGROUND SURVEY: BETA/GAMMA ☐ NEUTRON

Give only DM on smears over MDA:

dpm/100 cm² α

dpm/100 cm² β

PG 5 OF 5

α	β
1	34
2	35
3	36
4	37
5	38
6	39
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	62
30	63
31	64
32	65
33	66

SM
ATTACHED

NOT CHECKED W/SD

NTM Neutron Monitor
(A) Airborne Radioactivity
(α) Alpha Probe Location
(β) Smear Location
@ Contact Beta/Gamma
@ 1 Foot Dose Rate
Fast Neutron Dose Rate
Beta/Gamma Dose Rate

CAM Continuous Air Monitor
CAAM Contin. Alpha Air Mon.
LMA Lab Monitor Alpha
LMB Lab Monitor Beta/Gam.
MOU Monitron Control Unit
MOC Monitron Chamber
MON Monitron
□ REGULATED AREA

RAD -Radiation Area
H.RAD -High Radiation Area
V.H.RAD -Very High Radiation Area
CON -Contamination Area
RAD/CON -Radiation & Contaminatio.

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

BUILDING 3032 LOCATION EAST SIDE / SOUTH HALL DATE 2-9-93 SURVEYOR JB TRUBEN ³³⁰⁹⁵SMEAR SURVEY: Alpha ☒ Beta/Gamma ☒ Beta ☐ PROBE SURVEY: Alpha ☒ Beta/Gamma ☒ BETA ☐INSTRUMENTS: 3047-10P 5505-5B COUNTERS: CTA-102 CTB-101 BACKGROUND SURVEY: BETA/GAMMA ☐ NEUTRON ☐

Give only D/M on smear over MDA:

_____ dpm/100 cm² α
 _____ dpm/100 cm² β

41, 42, 45 ON D.A. CRAFT
 SMAR SURVEY

OC	B
1	34
2	35
3	36
4	37
5	38
6	39
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	62
30	63
31	64
32	65
33	66

(40) - INSIDE DRAWER

NTM Neutron Monitor
 (A) Airborne Radioactivity
 (α) Alpha Probe Location
 (S) Smear Location
 # @ Contact Beta/Gamma
 # @ 1 Foot Dose Rate
 [F] Fast Neutron Dose Rate
 .# Beta/Gamma Dose Rate

CAM Continuous Air Monitor
CAAM Contin. Alpha Air Mon.
LMA Lab Monitor Alpha
LMB Lab Monitor Beta/Gam.
MCU Monitor Control Unit
MOC Monitor Chamber
MON Monitor
 [] REGULATED AREA

RAD - Radiation Area
H.RAD - High Radiation Area
V.H.RAD - Very High Radiation Area
CON - Contamination Area
RAD/CON - Radiation & Contaminati

SMEAR SAMPLE DATA

(HP&S) J.B. Treen		PHONE 4-4997	BLDG. NO. (HP&S) 3037	LOCATION (SMEARS TAKEN) LAB area east of South Hall	DATE 2-9-93
SMEARS NUMBERED: From 1 To 10		RESULTS REQUIRED: Date _____ Time _____		DATE COUNTED 2-10-93	COUNTER OPERATOR J.B. Treen
GIVE D/M ONLY ON SMEARS OVER: 13 d/m α 28 d/m β		REMARKS: CTA 042 MDA 13 dpm CTB 058 MDA 78 dpm			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (
1	37	—	34			67		
2	146	175	35			68		
3	37	170	36			69		
4	400	8000	37			70		
5	—	—	38			71		
6	—	—	39			72		
7	26	—	40			73		
8	19	94	41			74		
9	13	—	42			75		
10	—	—	43			76		
11			44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

HP&S-1000 - Give only if required

COPY

3032 CABINETS UNDER HOODS ON WEST SIDE

Section 3

Section 2

Section 1

All readings in dpm B8

3038-3P
Reviewed by
Rebecca Crossens
6-16-94

Initial Characterization Survey
by: Janet Cox 3/5/93 3038-1P
Janet Cox #32721

SMEAR SAMPLE DATA

NAME (HPAS)		PHONE	BLOG. NO. (HPAS)	LOCATION (SMEARS TAKEN)	DATE
Deborah Chasno		4-6704	3038	3032	6-24-94 (16c)
SMEARS NUMBERED:		RESULTS REQUIRED:		DATE COUNTED	COUNTER OPERATOR
From 1 To 69		Date Time		6-24-94	D. Chasno
GIVE D/M ONLY ON SMEARS OVER:		REMARKS:			
20 d/m α		Smears taken on spots that probed, on cabin			
200 d/m β		beneath hoods in regulated area on southwest side.			
		(Knob 1 starts on left)			
		CTA-041, CTB-047			

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
1	—	1134 110K hot spot	Sec. 1	—	—	67	—	10,000 spot
2	—	Sec. 1 knob 1	—	—	—	68	—	Sec. 3 left d
3	—	Sec. 1 knob 2	—	—	—	69	—	17,000 spot
4	—	Sec. 1 knob 3	—	—	—	70	—	Sec. 3 right d
5	—	315 Sec. 1 knob 5	—	—	—	71	—	
6	—	434 20,000 spot	Sec. 1	—	—	72	—	
7	—	30,000 spot	Sec. 1	—	—	73	—	
8	—	392 50,000 spot	Sec. 1	—	—	74	—	
9	—	20,000 spot	Sec. 1	—	—	75	—	
10	—	15,000 spot	Sec. 1	—	—	76	—	
11	—	60,000 spot	Sec. 1	—	—	77	—	
12	—	5,000 spot	Sec. 1	—	—	78	—	
13	—	2,000 - 12,000	Sec. 2	—	—	79	—	
14	—	6,000 - 15,000	Sec. 2	—	—	80	—	
15	—	6,000 spot	Sec. 2	—	—	81	—	
16	—	3,000 spot	Sec. 2	—	—	82	—	
17	—	12,000 spot	Sec. 2	—	—	83	—	
18	—	25K - 50,000 spot	Sec. 2	—	—	84	—	
19	—	315 Sec. 2 knob 1	—	—	—	85	—	
20	—	64 Sec. 2 knob 3	—	—	—	86	—	
21	—	Sec. 2 knob 4	—	—	—	87	—	
22	—	Sec. 2 knob 5	—	—	—	88	—	
23	—	Sec. 2 hole on right	—	—	—	89	—	
24	—	6,000 spot around hole	Sec. 2	—	—	90	—	
25	—	Sec. 3 first hole on left	—	—	—	91	—	
26	—	Sec. 3 2nd hole	—	—	—	92	—	
27	—	Sec. 3 knob	—	—	—	93	—	
28	—	Sec. 3 3rd hole next to wall	—	—	—	94	—	
29	—	3,000 spot	Sec. 3	—	—	95	—	
30	—	5,000 spot	Sec. 3	—	—	96	—	
31	—	20,000 spot	Sec. 3	—	—	97	—	
32	—	3,000 spot	Sec. 3	—	—	98	—	
33	—	10,000 spot	Sec. 3	—	—	99	—	

3032 SOUTHWEST HOOD CABINETS

Readings in dpm Bq

Resurveyed
6/27/94
Deborah Crossine
3038-8P

SMEAR SAMPLE DATA

NAME (HP&S) <i>Dorah Crossno</i>	PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>6-27-94</i> (1600)
SMEARS NUMBERED: From <i>1</i> To <i>8</i>	RESULTS REQUIRED:	DATE COUNTED <i>6-27-94</i>	COUNTER OPERATOR <i>D. Crossno</i>	
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>Smears taken on hot spots on cabinets under hoods in southwest corner of regulated area</i> <i>CTA-041, CFB047</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	—	top 1,000 spot on left door sec. 1	67					
2	—	bottom 1,000 spot on left door sec. 1	68					
3	399	13,000 spot on right door sec. 1	69					
4	308	30,000 spot on bottom sec. 1	70					
5	—	general area in bottom sec. 1	71					
6	—	18,000 spot on bottom sec. 2	72					
7	—	general area in bottom sec. 2	73					
8	—	pipe inside sec. 2	74					
9		42	75					
10		43	76					
11		44	77					
12		45	78					
13		46	79					
14		47	80					
15		48	81					
16		49	82					
17		50	83					
18		51	84					
19		52	85					
20		53	86					
21		54	87					
22		55	88					
23		56	89					
24		57	90					
25		58	91					
26		59	92					
27		60	93					
28		61	94					
29		62	95					
30		63	96					
31		64	97					
32		65	98					
33		66	99					

SMEAR SAMPLE DATA

NAME (INP&S) <i>K. J. McHale</i>	PHONE <i>4-6704</i>	BLDG. NO. (INP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032 *</i>	DATE <i>1/29/93</i>
SMEARS NUMBERED: From <i>20</i> To <i>200</i>	RESULTS REQUIRED: Date _____ Time _____	DATE COUNTED <i>1/29/93</i>		COUNTER OPERATOR <i>KJM</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β		REMARKS: <i>* Contamination found under sink in N.E. corner of Bldg. 3032</i> <i>3038-1I CTA-041 CTB-047</i>		

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	20	55000	MAX. Smear	34		67		
2			on Drain	35		68		
3				36		69		
4			MAX. Probe	37		70		
5			11mR/hr.	38		71		
6				39		72		
7				40		73		
8				41		74		
9				42		75		
10				43		76		
11				44		77		
12				45		78		
13				46		79		
14				47		80		
15				48		81		
16				49		82		
17				50		83		
18				51		84		
19				52		85		
20				53		86		
21				54		87		
22				55		88		
23				56		89		
24				57		90		
25				58		91		
26				59		92		
27				60		93		
28				61		94		
29				62		95		
30				63		96		
31				64		97		
32				65		98		
33				66		99		

SMEAR SAMPLE DATA

NAME (HP&S) <u>K. J. McHoe</u>	PHONE <u>46704</u>	BLDG. NO. (HP&S) <u>3038</u>	LOCATION (SMEARS TAKEN) <u>3032</u>	DATE <u>7/29/93</u> : <u>1126/93</u>
SMEARS NUMBERED: From <u>1</u> To <u>1</u>	RESULTS REQUIRED:	DATE COUNTED		COUNTER OPERATOR <u>ZIM</u>
GIVE D/M ONLY ON SMEARS OVER: <u>20</u> d/m α <u>200</u> d/m β		REMARKS: Contamination found under Hood in Bldg. 3032. Hood is Located on North Wall of 3032. <u>3038-3B</u>		

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	2425	9991 MAX Smear	34			67		
2		on Drain	35			68		
3		Under hood.	36			69		
4			37			70		
5		MAX. Probe	38			71		
6		46,000 DPM α	39			72		
7		Under Hood	40			73		
8			41			74		
9		MAX. Probe	42			75		
10		on Drain	43			76		
11		59,400 DPM α	44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

COPY

ISOTOPE AREA RADIOLOGICAL SURVEY

BUILDING 3032 LOCATION Cabinet under Hood on 5th Wall DATE 1/26/93 SURVEYOR John Slatta
K. J. McElroy

SMEAR SURVEY: Alpha ☒ Beta/Gamma ☒ Beta ☐ PROBE SURVEY: Alpha ☐ Beta/Gamma ☐ BETA ☐

INSTRUMENTS: 3038-3B COUNTERS: CTA-041 CTG-047 BACKGROUND SURVEY: BETA/GAMMA ☐ NEUTRON ☐

Given unit: FPM as appears over MDA:	
- 20	dpm/100 cm ² ±
- 200	dpm/100 cm ² ±

a	B
1	1
2	2
3	2425
4	1346
5	5
6	23
7	7
8	65
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

MAX. ALPHA Probe: 59400 DPM/100cm²

COPY

NTM Neutron Monitor (A) Airborne Radioactivity (Δ) Alpha Probe Location (S) Smear Location # @ Contact Beta/Gamma 1 @ 1 Foot Dose Rate (F) Fast Neutron Dose Rate .# Beta/Gamma Dose Rate	CAM Continuous Air Monitor CAAM Contin. Alpha Air Mon. LMA Lab Monitor Alpha LNB Lab Monitor Beta/Gam. MOU Monitor Control Unit MOC Monitor Chamber MON Monitor [] REGULATED AREA	RAD -Radiation Area H.RAD -High Radiation Area V.H.RAD -Very High Radiation Area CON -Contamination Area RAD/CON -Radiation & Contamination
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SMEAR SAMPLE DATA

NAME (HP&S) <i>Slater</i>	PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN) <i>3032 Reg area</i>	DATE <i>12-4-92</i>
SMEARS NUMBERED:	RESULTS REQUIRED:	DATE COUNTED	COUNTER OPERATOR	
From To	Date Time			
GIVE D/M ONLY ON SMEARS OVER:		REMARKS:		
<u>20</u> d/m α <u>200</u> d/m β		<i>smears from inside of cabinet under southwest hood</i>		

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	220	924 FLOOR	34			67		
2		38,000 PIPE — PROBES			25 m ² /hr @ 1"	68		
3	220	1176 INSIDE DOOR	35			69		
4	220	2401 EQUIPMENT	37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9			42			75		
0			43			76		
1			44			77		
2			45			78		
3			46			79		
4			47			80		
5			48			81		
6			49			82		
7			50			83		
8			51			84		
9			52			85		
0			53			86		
1			54			87		
2			55			88		
3			56			89		
4			57			90		
5			58			91		
6			59			92		
7			60			93		
8			61			94		
9			62			95		
0			63			96		
1			64			97		
2			65			98		
3			66			99		

COPY

SMEAR SAMPLE DATA

John Slats

NAME (HP&S) <i>R. J. McSho</i>	PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032 (HOOD)</i>	DATE <i>8/26/92</i>
SMEARS NUMBERED: From <i>1</i> To <i>5</i>	RESULTS REQUIRED:	DATE COUNTED <i>8/26/92</i>	COUNTER OPERATOR: <i>R. J. McSho</i>	
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/mα <i>200</i> d/mβ	REMARKS: <i>Smears were taken from hood circled below.</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	216	9905	BACK WALL	34		67		
2	28	1190	BOTTOM	35		68		
3	43	5670	L. Side	36	<i>* Max probe reading</i>	69		
4	44	315	R. Side	37	<i>13,000dpm/100cm²</i>	70		
5	97	483	Window (corner)	38		71		
6			39			72		
7						73		
8						74		
9						75		
10						76		
11						77		
12						78		
13						79		
14						80		
15						81		
16						82		
17						83		
18						84		
19						85		
20						86		
21						87		
22						88		
23						89		
24						90		
25						91		
26						92		
27						93		
28						94		
29						95		
30						96		
31						97		
32						98		
33						99		

BUILDING 3032

COPY

3032 Cabinets on NW side
North side of NW corner

all readings in dpm BX

Initial characterization
survey by Janet Cox
3/5/93 3038-1P
Janet Cox #32721

Revised by
Rebecca Hosang
6-16-94
3038-2P

DRAWER FROM SECTION 5

Initial characterization
survey by Janet Cox

3/5/93 3038-1P Janet Cox #32721

All readings in dpm Bx

Resurveyed by
Reborah Crossone

6-19-94 3038-3P

SECTION 3 DRAWERS

internal readings

SECTION 1 & 2

All readings in dpm Bx

Initial characterization survey
by Janet Cox 3/5/93 3038-1P
Print Cop #3272

Resurveyed by
Deborah Crossino
6-19-94
3038-3P

SMEAR SAMPLE DATA

NAME (HP&S) <i>Salvatore Crocino</i>	PHONE <i>4-6704</i>	BLOG. NO. (HP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>6-24-94</i>
YEARS NUMBERED: om <i>1</i> To <i>12</i>	RESULTS REQUIRED:		DATE COUNTE ^{ed} <i>6-24-94</i>	COUNTER OPERATOR <i>D. Crocino</i>
VE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>Smears taken on hot spots on cabinets in regulated area in back on North west side.</i>			

CTA-041, CTB-047

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
<20	<200	outside of section 7				67		
—	—	inside of ³⁵ sec. 7 + 2				68		
—	—	sec. 3, drawer 1 outside				69		
—	—	sec. 3, drawer 2 inside + outside				70		(over)
43	973	sec. 3, drawer 4 inside				71	1029	Recount 6-24-94
—	—	sec. 3, drawer 4 outside				72		
—	—	sec. 3, drawer 5 outside				73		
—	—	sec. 4, drawer outside				74		
—	350	sec. 4 inside				75		
—	—	sec. 5 drawer inside + outside				76		
—	—	sec. 5 + 6 inside				77		
—	—	sec. 6 drawer outside				78		
			46			79		
			47			80		
			48			81		
			49			82		
			50			83		
			51			84		
			52			85		
			53			86		
			54			87		
			55			88		
			56			89		
			57			90		
			58			91		
			59			92		
			60			93		
			61			94		
			62			95		
			63			96		
			64			97		
			65			98		
			66			99		

100-1527 (a) Give only if required.

Time:

RWP Number:

Specific Location: CABINETS.

PERFORMED NON-ROUTINE CONTAMINATION SURVEY OF THE CABINET SURFACES / INTERIORS (WITHIN FIXED CONTAMINATION AREA) PRIOR TO SEALING WITH SHEET-METAL AND SILICONE CAULKING.

CTA-041

3/1/98

CTB-047

3/1/98

3038-10P

3/17/97

3038-10B

6/16/97

NO TRANSFERABLE CONTAMINATION DETECTED OUTSIDE OF PREVIOUSLY IDENTIFIED AND POSTED CONTAMINATION AREAS ON / WITHIN CABINETS. SEE MAPS FOR SPECIFIC TRANSFERABLE CONTAMINATION LEVELS AND LOCATIONS LOCATED WITHIN THE CONTAMINATION AREAS. NO CONTAMINATION DETECTED ON PERSONNEL OR TOOLS / EQUIPMENT DURING / AT END OF JOB.

Person-hours spent on the survey: 14

of Pages: 11

Completed By:

T.H. Colman

Reviewed by:

Date:

Smear Results (dpm/100 cm² unless noted)

Smeat Number	α	β	Location	Smeat Number	α	β	Location	Smeat Number	α	β	Location
MAPS.											

Column
34667
2-27-97
Survey #
3038-97-0179
North-
West
Wall

Bldg 3032

Hoods
Cabinets
on
South-West
wall.

SMEAR SAMPLE DATA Survey # 3038-97-0179

NAME (P&S) <i>Coleman</i>	PHONE	BLDG. NO. (HP&S) <i>3032</i>	LOCATION (SMEARS TAKEN)	DATE <i>2-27-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>59</i>	RESULTS REQUIRED:	DATE COUNTED <i>2-27-97</i>	COUNTER OPERATOR <i>Coleman</i>	
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>South-West Cabinets.</i> <i>CTA-041 CTB-047</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 <20	<200	See Map	34 <20	<200	See Map	67		
2			35			68		
3			36			69		
4			37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9			42			75		
10			43			76		
11			44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50	↓		83		
18			51	400		84		
19			52	1290		85		
20			53	6225		86		
21			54	2050		87		
22			55	75,000		88		
23			56	880		89		
24			57	4870		90		
25			58	350		91		
26			59 ↓	410 ↓		92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33 ↓	↓	↓	66			99

Survey #
3038-97-0179

Inside of (C)

Inside of (B)

Inside of (A)

SMEAR SAMPLE DATA Survey # 3038-97-0179

NAME (Last, First) <i>Coleman</i>	PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>2-26-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>39</i>	RESULTS REQUIRED: Date _____ Time _____	DATE COUNTED <i>2-26-97</i>		COUNTER OPERATOR <i>Coleman</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>CTA-041 North-West Cabinets</i> <i>CTB-047</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 <20	<200	See Map	34 <20	<200	See Map	67		
2			35			68		
3			36			69		
4			37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9			42			75		
10			43			76		
11			44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

North-East Cabinets + Hood Bldg 5052

Column
34667
2-28-97

Survey #
3038-97-0179

Inside 2

Inside 6

SMEAR SAMPLE DATA Survey #3038-97-0179

NAME (HP&S) <i>Coleman</i>	PHONE	BLDG. NO. (HP&S) <i>3032</i>	LOCATION (SMEARS TAKEN)	DATE <i>2-28-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>45</i>	RESULTS REQUIRED:	DATE COUNTED <i>2-28-97 / 3-4-97</i>	COUNTER OPERATOR <i>Coleman</i>	
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>North-East Cabinets</i> <i>CTA-041, CTB-047</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 <20	<200	See Map	34 <20	<200	See Map	67		
2			35			68		
3			36			69		
4			37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9			42			75		
10			43			76		
11			44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26	39		59			92		
27	37		60			93		
28	47		61			94		
29	235	390	62			95		
30	<20	408	63			96		
31		<200	64			97		
32			65			98		
33			66			99		

Column
34667
2-28-97

East Cabinets Bldg 3032

Survey #
3038-97-0179

Inside ①

Inside ②

SMEAR SAMPLE DATA Survey # 3038-97-0179

NAME (HP&S) <i>Coleman</i>	PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>2-28-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>35</i>	RESULTS REQUIRED:	Date	Time	DATE COUNTED <i>2-28-97/3-4-97</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>East Cabinets</i> <i>CTA-041, CTB-047</i>	COUNTER OPERATOR <i>Coleman</i>		

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 <i><20</i>	<i><200</i>	<i>See Map.</i>	34 <i><20</i>	<i><200</i>	<i>See Map.</i>	67		
2			35			68		
3			36			69		
4			37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9			42			75		
10			43			76		
11			44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

South-East Cabinets & Hood way ~ ~ ~

Column
34667
2-28-97

Survey #
3038-97-0179

Inside of ②

SMEAR SAMPLE DATA

Survey # 3038-97-0179

NAME (HP&S) <i>Chaman</i>	PHONE	BLDG. NO. (HP&S) <i>3032</i>	LOCATION (SMEARS TAKEN)	DATE <i>2-28-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>39</i>	RESULTS REQUIRED:	Date	Time	DATE COUNTED <i>2-28-97 / 3-4-97</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>South-East Cabinets</i> <i>CTA-041, CTB-047</i>	COUNTER OPERATOR <i>Chaman</i>		

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 <20	<200	See Map	34 <20	<200	See Map	67		
2			35			68		
3			36			69		
4			37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9			42			75		
10 64			43			76		
11 25	293		44			77		
12 178	<200		45			78		
13 <20			46			79		
14			47			80		
15 25			48			81		
16 27			49			82		
17 <20			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

ORNL Radiological Survey Data

Survey Number: 3038-97-0388	3038 Field Office	Date: 4/15/97	Time: 8:00
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Surveyor Badge Number: 34667	☐ Routine Survey	RWP Number: 3038-97-0015A
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Building: 3032	Specific Location: BLDG INTERIOR EXCLUDING FIXED CONTAMINATION A
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Description: ALONG WITH D.CROSSNO, JR SLATEN, T.DAVIS, & J.EUBANKS, PERFORMED COMPREHENSIVE SURVEY (DIRECT FRISK AND SMEARS) OF BLDG 3032 (EXCLUDING FIXED CONTAMINATION AREA) TO CLEAR AREA FOR CLEANING, PAINTING AND TRANSFER OF HP OFFICE TO THE BUILDING. ALSO PROVIDED HP COVERAGE FOR CHEM TECH PERSONNEL DECONNING CONTAMINATION FOUND DURING COMPREHENSIVE SURVEY.
--

Instruments Used and Calibration Due Date: SEE MAPS.

General Description of Radiological Conditions: SEE ATTACHED MAPS FOR FIXED & TRANSFERABLE CONTAMINATION LEVELS FOUND DURING SURVEY AND ALSO AFTER DECON ATTEMPTS COMPLETED.

Division or Group Needing the Survey: CHEM TECH.	Person-hours spent on the survey: 225
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# of Pages: 21	Completed By: <i>TH Coleman</i>	Reviewed by: _____	Date: _____
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MARTIN MARIETTA ENERGY SYSTEMS, INC.		☐ GENERAL RWP ☒ JOB-SPECIFIC RWP		RWP NUMBER 3038-97-0015 A ☒ Contamination Area Entry ☐ Radiation Area Entry	
1. EFFECTIVE	4/15/97	8:00	2. EXPIRES	4/18/97	15:30
3. LOCATION OF WORK			4. EXTENDED TO 4-25-97 JHC		
BLDG 3032.					
5. DESCRIPTION OF WORK					
DECON AREAS / SPOTS OF FIXED AND TRANSFERABLE CONTAMINATION ON FLOORS, WALLS, PIPES, CEILING, AND ATTIC.					
6. PRE-JOB CONDITIONS			7. ANTICIPATED CONDITIONS DURING JOB		
ON FLOORS, WALLS, & PIPES: UP TO 100,000 DPM (FIXED) AND 3000 DPM (TRANSFERABLE) BETA-GAMMA, UP TO 12,000 DPM / 100 CM ² ALPHA (FIXED). IN ATTIC & CEILING: UP TO 40,000 DPM (FIXED) AND 707 DPM / 100 CM ² (TRANSFERABLE) BETA-GAMMA, UP TO 13,909 DPM / 100 CM ² (FIXED) AND 2626 DPM / 100 CM ² (TRANSFERABLE) ALPHA.			POSSIBLE LOOSE CONTAMINATION DURING DECON PROCESS.		
SEE SURVEY No: _____					
8. REQUIRED DOSIMETER			9. REQUIRED RESPIRATORY PROTECTION		
☒ TLD ☐ Pocket Chamber ☐ Neutron ☐ Extremity ☐ Other Dosimetry ☐ Electronic ☐ Multiple Dosimeters			☐ Full Face ☐ PAPR ☐ Supplied Air ☐ SCBA TYPE OF CARTRIDGE ☐ Particulate ☐ GMHF-C ☐ Other (specify)		
10. TRAINING			Respirator Fit Card Required		
☐ RWI ☒ RWII ☐ Special RW Training					
11. REQUIRED ANTI-C CLOTHING (NO. OF PAIRS INDICATED IN PARENTHESIS)					
COVERALLS:		GLOVES:		SHOE COVERS:	
☐ Cloth no hood () ☐ Cloth with hood () ☐ Splashproof () ☒ Disposable		☒ Rubber (2) ☐ Surgeon's () ☐ Work (specify)		☐ Booties () ☐ Rubber, low top () ☐ Rubber, high top () ☒ Disposable (1)	
				Other: ☐ Labcoat ☐ Hood () ☐ Raincoat ☐ Skull Cap ☐ Jacket ☐ Hard Hat	
12. SPECIAL ANTI-C CLOTHING INSTRUCTIONS:					
ANTI-C CLOTHING LEVELS MAY BE DOWNGRADED BY HP DEPENDING ON SPECIFIC TYPE OF DECON TAKING PLACE (ie: (1) PAIR OF RUBBER GLOVES MAY BE ALL THAT IS REQUIRED TO DECON FIXED CONTAMINATION SPOTS ON FLOOR).					
13. PRE-JOB BRIEFING REQUIRED? ☒ No ☐ Yes					
14. RCO COVERAGE ☐ Routine Survey Only ☐ Initial ☒ Intermittent ☐ Continuous ☐ Post-Job					
15. SPECIAL INSTRUCTIONS					
HP WILL DETERMINE FRISKING REQUIREMENTS BASED ON SPECIFIC TYPE OF DECON TAKING PLACE.					
16. BIOASSAY REQUIREMENTS ☐ None ☒ Routine ☐ Special:					
17. APPROVALS					
	Signature		Badge	Date	
Written/RCO	JH Column		34667	4-15-97	
Approved/RCO	JH Column		34667	4-15-97	
ALARA/RCO	NA		—	—	
Work Group Supervisor	Jack Graner		23449	4-15-97	
RWP Terminated/ RCO	JH Column		34667	4-25-97	

Distribution:
 RCO-RC
 Work Group Supervisors

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

DATE 4-21-07

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

Name <i>J.E. Moody</i>	Badge # <i>33157</i>	Time In <i>07:30</i>	Time In	Time In	Time In
Signature <i>J.E. Moody</i>	RWP# <i>3038-97-0015A</i>	Time Out <i>8:45</i>	Time Out	Time Out	Time Out
Name <i>S.R. Paskell</i>	Badge # <i>12003</i>	Time In <i>0730</i>	Time In	Time In	Time In
Signature <i>S.R. Paskell</i>	RWP# <i>3038-97-0015A</i>	Time Out <i>1045</i>	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

DATE 4-18-97

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

Name	<u>S.R. Paskell</u>	Badge #	<u>12003</u>	Time In	<u>0728</u>	Time In		Time In		Time In	
Signature	<u>A.R. Paskell</u>	RWP#	<u>3038-97-0015A</u>	Time Out	<u>13:00</u>	Time Out		Time Out		Time Out	
Name	<u>J.E. Moody</u>	Badge #	<u>33159</u>	Time In	<u>12:15</u>	Time In		Time In		Time In	
Signature	<u>J.E. Moody</u>	RWP#	<u>3038-97-0015A</u>	Time Out	<u>13:00</u>	Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out		Time Out	

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RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

DATE 4-16-97

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

Name <u>Lawson L.R</u>	Badge # <u>24830</u>	Time In <u>09:30</u>	Time In <u>20:50</u>	Time In	Time In
Signature <u>L.R. Lawson</u>	RWP# <u>3038-97-0015A</u>	Time Out <u>18:50</u>	Time Out <u>13:30</u>	Time Out	Time Out
Name <u>Deborah Crossin</u>	Badge # <u>6026079</u>	Time In <u>12:20</u>	Time In	Time In	Time In
Signature <u>Deborah Crossin</u>	RWP# <u>3038-97-0015A</u>	Time Out <u>13:54</u>	Time Out	Time Out	Time Out
Name <u>S.R. Paskell</u>	Badge # <u>12003</u> 3038-97-0015A	Time In <u>08:15</u>	Time In	Time In	Time In
Signature <u>S.R. Paskell</u>	RWP# <u>3038-97-0015A</u>	Time Out <u>14:30</u>	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out

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RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

DATE 4-15-97

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

Name	AR LAWSON	Badge #	24810	Time In	9:20	Time In		Time In	
Signature	<i>AR Lawson</i>	RWP#	3038-97-0015A	Time Out	1430	Time Out		Time Out	
Name	J. E. Moody	Badge #	33159	Time In	9:20	Time In		Time In	
Signature	<i>J. E. Moody</i>	RWP#	3038-97-0015A	Time Out	1430	Time Out		Time Out	
Name	S. R. Pashkev	Badge #	12003	Time In	0920	Time In		Time In	
Signature	<i>S. R. Pashkev</i>	RWP#	3038-97-0015A	Time Out	1430	Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out	
Name		Badge #		Time In		Time In		Time In	
Signature		RWP#		Time Out		Time Out		Time Out	

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

DATE 4-17-97

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

Name <i>J.E. Moody</i>	Badge # <i>33159</i>	Time In <i>7:45 AM</i>	Time In	Time In	Time In
Signature <i>J.E. Moody</i>	RWP# <i>3038-97-0015A</i>	Time Out <i>10:45 AM</i>	Time Out	Time Out	Time Out
Name <i>S.R. Paskeel</i>	Badge # <i>12003</i>	Time In <i>0745</i>	Time In	Time In	Time In
Signature <i>S.R. Paskeel</i>	RWP# <i>3038-97-0015A</i>	Time Out <i>1435</i>	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out

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8-45

ORNL Radiological Survey Data

Survey Number: _____ 3038 Field Office Date: _____ Time: _____

Average background 150 - 250 cpm

Boundary Designations	
① - Smear Location	RA - Radiation Area
② - Large Area Smear	BA - Radiological Buffer Area
# - Contact Dose Rate	HR - High Radiation Area
# - 30 cm Dose Rate	VR - Very High Radiation Area
# - General Area Dose Rate	AR - Airborne Radioactivity Area
[SOP] - Step-off Pad	RM - Radioactive Materials Area
AS - Air Sample Location	UM - Underground Radioactive Materials 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.

SMEAR SAMPLE DATA

NAME (HP&S) <i>Coleman Krasno</i>	PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN) <i>3032 West Wall</i>	DATE <i>4-7-97 / 4-10-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>48</i>	RESULTS REQUIRED:	DATE COUNTED <i>4-7-97 / 4-10-97</i>	COUNTER OPERATOR <i>Coleman / Krasno</i>	
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>3038-11P 3038-04B</i> <i>CTB-047 CTA-041</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 $\angle 20$	$\angle 200$	See Map	34 $\angle 20$	$\angle 200$	See Map	67		
2			35			68		
3			36			69		
4			37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9			42			75		
10			43			76		
11			44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

ORNL Radiological Survey Data

Survey Number:

3038 Field Office

Time:

3032 FLOOR

Resmear of (99) after decan was 200 dpm.

Reservoir of ^{69}Zr after decay was $\sim 200 \text{ dpm}$.
All contamination deemed to $< 1000 \text{ dpm Bt}$ and $< 100 \text{ dpm } \alpha$.
Average Background $100-150 \text{ cpm Bt}$.

Average Background 100-150 cpm/Bt.

(*)	Smear Location	RA - Radiation Area	BA - Radiological Buffer Area
(*)	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 radiaions: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

SMEAR SAMPLE DATA

NAME (HP&S) <i>Coleman/Crossno/Slaten</i>	PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN) <i>3032 Floor</i>	DATE <i>4-11-97 / 4-16-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>20</i>	RESULTS REQUIRED:	Date	Time	DATE COUNTED <i>4-11-97 / 4-16-97</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>3038-11P 3038-04B</i> <i>CTB-047 CTA-041</i> <i>* Resmear at #9 was <200 dpm.</i>			COUNTER OPERATOR <i>Coleman/Crossno/Slaten</i>

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 <20	<200	See Map	34			67		
2			35			68		
3			36			69		
4			37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9	*1250		42			75		
10	<200		43			76		
11			44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

ORNL Radiological Survey Data

Survey Number:

3038 Field Office

Date:

Time:

All contamination deemed to less than 1000ppm Bt except as noted by (*).

Average background 150-250 cpm Bq.

②	②	• Smear Location	RA - Radiation Area	BA - Radiological Buffer Area	
②	②	• 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	
	#	• General Area Dose Rate	RM - Radioactive Materials Area	SC - Soil Contamination Area	
		• Step-Off Pad			
		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 readings: B - Beta (mRad/hr), G - Gamma (mR/hr), N - Neutron (mRem/hr). Boundary designations are looking from the designations into the zoned area.

SMEAR SAMPLE DATA

NAME (HP&S) <i>Clayton/Eubanks/Slater</i>		PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN) <i>3032 East Wall</i>	DATE <i>4-9-97 / 4-11-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>70</i>		RESULTS REQUIRED: Date _____ Time _____		DATE COUNTED <i>4-9-97 / 4-11-97</i>	COUNTER OPERATOR <i>Clayton/Eubanks/Slater</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β		REMARKS: <i>3038-11P 3038-04B</i> <i>CTA-041 CTR-047</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 <20	<200	See Map	34 <20	<200	See Map	68	NDASE	See Map.
2			35			69	NDGMT	
3			36			70		
4			37			71		
5			38			72		
6			39			73		
7			40			74		
8			41			75		
9			42			76		
10			43			77		
11			44			78		
12			45			79		
13			46			80		
14			47			81		
15			48			82		
16			49			83		
17			50			84		
18			51			85		
19			52			86		
20			53			87		
21			54			88		
22			55			89		
23			56			90		
24			57			91		
25			58			92		
26			59			93		
27			60			94		
28			61			95		
29			62			96		
30			63			97		
31			64			98		
32			65			99		
33			66					

ORNL Radiological Survey Data

Survey Number:

3038 Field Office

Date:

Time:

* Decanned to <1000 dpm B_s.

Average background 250-300 cpm B_s.

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.

SMEAR SAMPLE DATA

NAME (HP&S) <i>Crossno / Slaten</i>	PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN) <i>3032 South Wall</i>	DATE <i>4-10-97 / 4-11-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>35</i>	RESULTS REQUIRED:	DATE COUNTED <i>4-10-97 / 4-11-97</i>	COUNTER OPERATOR <i>Crossno / Slaten</i>	
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: <i>3038-11P 3038-04B</i> <i>CTA-041 CTB-047</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1 < 20	< 200	See Map	34 NDASC	NDGMIT	See Map	67		
2 NDASC	NDGMIT	See Map	35			68		
3			36			69		
4			37			70		
5			38			71		
6			39			72		
7			40			73		
8			41			74		
9			42			75		
10			43			76		
11			44			77		
12			45			78		
13			46			79		
14			47			80		
15			48			81		
16			49			82		
17			50			83		
18			51			84		
19			52			85		
20			53			86		
21			54			87		
22			55			88		
23			56			89		
24			57			90		
25			58			91		
26			59			92		
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

Deborah Crossno
626079

ORNL Radiological Survey Data

Survey Number:

3038 Field Office

Date: 4-8-97 Time: 1200

thru 4-21-97

3038-7P+7B

CTA-041 CTB-047

3032 CEILING
3032 CEILING

All probe readings $\text{dpm}/100 \text{ cm}^2$

Smear Location		Boundary Designations	
①-⑩	- 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.

Whole ceiling area and lights were probed
all < 1000 $\text{dpm}/100 \text{ cm}^2 \beta\gamma$ and 100 $\text{dpm}/100 \text{ cm}^2 \alpha$ unless
otherwise noted.

Page: 16

ORNL Radiological Survey Data

Survey Number: _____

3038 Field Office

Date: 4-10-97 Time: 0900

3032 ATTIC WITH INSERTS

#	Smear Location	Boundary Designations	
②	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 Field Office

Date: 4-10-97 Time: 0900

Symbol	Description	Boundary Designations	
		RA - Radiation Area	BA - Radiological Buffer Area
②	- Smear Location	HR - High Radiation Area	CA - Contamination Area
③	- Large Area Smear	VR - Very High Radiation Area	HC - High Contamination Area
④	- Contact Dose Rate	AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
⑤	- 30 cm Dose Rate	RM - Radioactive Materials Area	SC - Soil Contamination Area
⑥	- General Area Dose Rate	UM - Underground Radioactive Materials Area	
SOP	- Step-off Pad		
AS	- 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.

SMEAR SAMPLE DATA

NAME (HP&S) <i>Deborah Crosson</i>		PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032 Attic</i>	DATE <i>4-10-97</i> <i>0900</i>
SMEARS NUMBERED:		RESULTS REQUIRED:		DATE COUNTED <i>4-10-97</i>	COUNTER OPERATOR <i>D. Crosson</i>
From	To	Date	Time		
GIVE D/M ONLY ON SMEARS OVER:		REMARKS:			
<i>20</i> d/m α		<i>Survey of attic after finding contamination inside 3032 on ceiling.</i>			
<i>200</i> d/m β		<i>Smears 34-48 taken 1230 4/10</i>			
		<i>CTA-041 CTB-047 3038-TB+TP+I</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
<i>12626</i>	<i>707</i>	<i>See</i>	<i>34</i>	<i>—</i>	<i>See</i>	<i>67</i>	<i>—</i>	
<i>21574</i>	<i>490</i>	<i>maps</i>	<i>35</i>	<i>—</i>	<i>maps</i>	<i>68</i>	<i>—</i>	
<i>3122</i>	<i>—</i>		<i>36</i>	<i>—</i>		<i>69</i>	<i>—</i>	
<i>4</i>	<i>—</i>		<i>37</i>	<i>—</i>		<i>70</i>	<i>—</i>	
<i>524</i>	<i>—</i>		<i>38</i>	<i>—</i>		<i>71</i>	<i>—</i>	
<i>624</i>	<i>—</i>		<i>39</i>	<i>—</i>		<i>72</i>	<i>—</i>	
<i>722</i>	<i>—</i>		<i>40</i>	<i>—</i>		<i>73</i>	<i>—</i>	
<i>8857</i>	<i>—</i>		<i>41</i>	<i>—</i>		<i>74</i>	<i>—</i>	
<i>9</i>	<i>—</i>		<i>42</i>	<i>—</i>		<i>75</i>	<i>—</i>	
<i>1029</i>	<i>—</i>		<i>43</i>	<i>—</i>		<i>76</i>	<i>—</i>	
<i>1131</i>	<i>—</i>		<i>44</i>	<i>—</i>		<i>77</i>	<i>—</i>	
<i>12</i>	<i>—</i>		<i>45</i>	<i>—</i>		<i>78</i>	<i>—</i>	
<i>13</i>	<i>—</i>		<i>46</i>	<i>—</i>		<i>79</i>	<i>—</i>	
<i>14</i>	<i>—</i>		<i>47</i>	<i>—</i>		<i>80</i>	<i>—</i>	
<i>15</i>	<i>—</i>		<i>48</i>	<i>—</i>		<i>81</i>	<i>—</i>	
<i>16</i>	<i>—</i>		<i>49</i>	<i>—</i>		<i>82</i>	<i>—</i>	
<i>17</i>	<i>—</i>		<i>50</i>	<i>—</i>		<i>83</i>	<i>—</i>	
<i>18</i>	<i>—</i>		<i>51</i>	<i>—</i>		<i>84</i>	<i>—</i>	
<i>19</i>	<i>—</i>		<i>52</i>	<i>—</i>		<i>85</i>	<i>—</i>	
<i>20</i>	<i>—</i>		<i>53</i>	<i>—</i>		<i>86</i>	<i>—</i>	
<i>21</i>	<i>—</i>		<i>54</i>	<i>—</i>		<i>87</i>	<i>—</i>	
<i>22</i>	<i>—</i>		<i>55</i>	<i>—</i>		<i>88</i>	<i>—</i>	
<i>23</i>	<i>—</i>		<i>56</i>	<i>—</i>		<i>89</i>	<i>—</i>	
<i>24</i>	<i>—</i>		<i>57</i>	<i>—</i>		<i>90</i>	<i>—</i>	
<i>25</i>	<i>—</i>		<i>58</i>	<i>—</i>		<i>91</i>	<i>—</i>	
<i>26</i>	<i>—</i>		<i>59</i>	<i>—</i>		<i>92</i>	<i>—</i>	
<i>27</i>	<i>—</i>		<i>60</i>	<i>—</i>		<i>93</i>	<i>—</i>	
<i>28</i>	<i>—</i>		<i>61</i>	<i>—</i>		<i>94</i>	<i>—</i>	
<i>2977</i>	<i>—</i>		<i>62</i>	<i>—</i>		<i>95</i>	<i>—</i>	
<i>3053</i>	<i>—</i>		<i>63</i>	<i>—</i>		<i>96</i>	<i>—</i>	
<i>31</i>	<i>—</i>		<i>64</i>	<i>—</i>		<i>97</i>	<i>—</i>	
<i>32190</i>	<i>—</i>		<i>65</i>	<i>—</i>		<i>98</i>	<i>—</i>	
<i>33</i>	<i>—</i>		<i>66</i>	<i>—</i>		<i>99</i>	<i>—</i>	

Deborah Crossano
6216079

ORNL Radiological Survey Data

Survey Number:

3038 Field Office

Date: 4-15-97 Time: 12:30

3038-7P+7B

CTA-041

CTB-047

3032 ATTIC

#	- 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
#	- General Area Dose Rate	RM - Radioactive Materials Area	SC - Soil Contamination Area
SOP	- Step-off Pad	UM - Underground Radioactive Materials Area	
AS	- 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.

SMEAR SAMPLE DATA

NAME (HP&S) <i>Deborah Crossano</i>		PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>4-15-97 / 4-16-97</i>
SMEARS NUMBERED: From <i>20</i> To <i>200</i>		RESULTS REQUIRED: Date <i>4-15+16-97</i>		DATE COUNTED <i>4-15+16-97</i>	
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β		REMARKS: <i>Smears taken in area below pipes that were cut in 3032 and one was found to have internal fixed contamination. Survey of attic area after deconning and pipe cutting.</i>		COUNTER OPERATOR <i>D. Crossano</i>	
<i>3038-7P+7B CTA-041, CTB-047</i>					

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	—	<i>See map</i>	34			67		
2	—		35			68		
3	—		36			69		
4	—		37			70		
5	—		38			71		
6	—		39			72		
7	—		40			73		
8	—		41			74		
9	—		42			75		
10	—		43			76		
11	—		44			77		
12	—	<i>Brace holding pipes on east wall</i>			78			
13	—	<i>Big pipe coming out of floor</i>			79			
14	—	<i>Floor</i>	47		80			
15	—	<i>Ladder</i>	48		81			
16	—	<i>Electric panel</i>			82			
17	—	<i>Large insulated pipe beside pipes that were cut</i>			83			
18			51		84			
19			52		85			
20			53		86			
21			54		87			
22			55		88			
23			56		89			
24			57		90			
25			58		91			
26			59		92			
27			60		93			
28			61		94			
29			62		95			
30			63		96			
31			64		97			
32			65		98			
33			66		99			

ORNL Radiological Survey Data

Survey Number: 3038-97-0238	3038 Field Office	Date: 1/28/97	Time:
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Surveyor Badge Number: 34667	☐ Routine Survey	RWP Number: 3038-97-0008A
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Building: 3032	Specific Location:
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Description:

PROVIDED HP SUPPORT FOR CHEM TECH PERSONNEL REMOVING WASTE AND DECONNING CABINETS AND HOODS WITHIN THE FIXED CONTAMINATION AREA OF BLDG 3032. PERFORMED CONTAMINATION SURVEYS OF HOODS CONTAINING UNDOCUMENTED LEVELS OF CONTAMINATION PRIOR TO PERSONNEL REMOVING ITEMS OR DECONNING. SMEARED AND PROBED 73 BAGS OF WASTE OUT OF AREA FOR PLACEMENT INTO RAD WASTE STORAGE BOXES. PERFORMED FINAL CONTAMINATION SURVEYS OF ALL C-AREA HOODS AND CABINETS AFTER ALL WASTE REMOVAL AND DECONNING COMPLETED AND PRIOR TO SEALING OF HOOD DOORS. PERFORMED FINAL CONTAMINATION SURVEY OF GENERAL WORK AREA. DEPOSTED C-AREA BACK TO FIXED CONTAMINATION AREA AND REMOVED "TEMPORARY" FIXED CONTAMINATION AREA.

Instruments Used and Calibration Due Date:

3038-10B	6/16/97	3038-10P	3/17/97	CTA-041	3/1/97	CTB-047	3/1/97
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General Description of Radiological Conditions:

SEE RWP AND ATTACHED MAPS FOR CONTAMINATION LEVELS PRIOR TO & AFTER WASTE REMOVAL AND DECONNING COMPLETE. NO CONTAMINATION DETECTED ON PERSONNEL AT ANY TIME UPON EXIT FROM WORK AREA. NO CONTAMINATION DETECTED ON TOOLS / SUPPLIES UPON REMOVAL FROM WORK AREA. NO TRANSFERABLE CONTAMINATION DETECTED IN WORK AREA AT END OF JOB PRIOR TO DEPOSTING. SEE ATTACHED SMEAR DATA SHEETS FOR MISC SMEAR DATA.

Division or Group Needing the Survey: CHEM TECH.	Person-hours spent on the survey: 36
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# of Pages: 22	Completed By: <i>T. Coleman</i>	Reviewed by: <i>John Stuts</i>	Date: 5-15-97
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MARTIN MARIETTA ENERGY SYSTEMS, INC.		☐ GENERAL RWP ☒ JOB-SPECIFIC RWP	RWP NUMBER 3038-97-0008 A ☒ Contamination Area Entry ☐ Radiation Area Entry
1. EFFECTIVE 1/28/97	2. EXPIRES 2/28/97	4. EXTENDED TO	
3. LOCATION OF WORK BUILDING 3032: HOODS #8683, #8690, #8683, AND CABINET UNDERNEATH HOOD #8690.			
5. DESCRIPTION OF WORK PERSONNEL TO OPEN HOODS / CABINET AND REMOVE SUPPLIES / EQUIPMENT.			
6. PRE-JOB CONDITIONS TRANSFERABLE CONTAMINATION LEVELS: UP TO 216 DPM/100 cm ² ALPHA / 9905 DPM/100 cm ² BETA-GAMMA IN HOOD #8690. UP TO 1323 DPM/100 cm ² BETA-GAMMA (NO DETECTABLE ALPHA) IN HOOD #8733. NO SURVEY DATA AVAILABLE FOR HOOD #8683, HOWEVER IT IS EXPECTED TO HAVE SIMILAR LEVELS OF CONTAMINATION AS HOOD #8733 DUE TO PAST WORK ACTIVITIES BEING CLOSELY RELATED. UP TO 2425 DPM/100 cm ² ALPHA / 4991 DPM/100 cm ² BETA-GAMMA IN CABINET UNDERNEATH HOOD #8690. FIXED CONTAMINATION LEVELS: UP TO 13,000 DPM/100 cm ² BETA-GAMMA IN HOOD #8690, UP TO 59,400 DPM/100 cm ² ALPHA IN CABINET UNDERNEATH HOOD #8690.		7. ANTICIPATED CONDITIONS DURING JOB NO CHANGES ANTICIPATED. HP WILL PERFORM SMEAR SURVEY OF HOOD #8683 UPON OPENING TO ASSURE TRANSFERABLE CONTAMINATION LEVELS ARE ACCEPTABLE PRIOR TO REMOVAL OF MATERIAL FROM HOOD.	
SEE SURVEY No: _____			
8. REQUIRED DOSIMETER ☒ TLD ☐ Pocket Chamber ☐ Neutron ☐ Extremity ☐ Other Dosimetry ☐ Electronic ☐ Multiple Dosimeters		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 () ☐ Cloth with hood () ☐ Splashproof () ☒ Disposable GLOVES: ☒ Rubber (2) ☐ Surgeon's () ☐ Work (specify) SHOE COVERS: ☐ Booties () ☐ Rubber, low top () ☐ Rubber, high top () ☒ Disposable (1) Other: ☐ Labcoat ☐ Hood () ☐ Raincoat ☐ Jacket ☐ Hard Hat			
12. SPECIAL ANTI-C CLOTHING INSTRUCTIONS: TAPE INNER GLOVES TO DISPOSABLE COVERALLS (TYVEK).			
13. PRE-JOB BRIEFING REQUIRED? ☒ No ☐ Yes			
14. RCO COVERAGE ☐ Routine Survey Only ☐ Initial ☒ Intermittent ☐ Continuous ☐ Post-Job			
15. SPECIAL INSTRUCTIONS WHOLE BODY FRISK FOR ALPHA & BETA-GAMMA CONTAMINATION REQUIRED UPON EXIT FROM WORK AREA			
16. BIOASSAY REQUIREMENTS ☐ None ☒ Routine ☐ Special:			
17. APPROVALS			
	Signature	Badge	Date
Written/RCO	<i>TH Colman</i>	34667	1-28-97
Approved/RCO	<i>TH Colman</i>	34667	1-28-97
ALARA/RCO	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
Work Group Supervisor	<i>J. M. ...</i>	13770	1-28-97
RWP Terminated/ RCO	<i>TH Colman</i>	34667	2-20-97

Distribution:
RCO-RC
Work Group Supervisors

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

DATE 1-28-97

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

Name	Badge #	Time In	Time In	Time In	Time In
<i>W W Bolinger</i>	<i>24989</i>	<i>13:20</i>			
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
<i>W.W. Bolinger</i>	<i>3038-97-0008A</i>	<i>14:20</i>			
Name	Badge #	Time In	Time In	Time In	Time In
<i>L R Lawson</i>	<i>24830</i>	<i>13:20</i>			
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
<i>L.R. Lawson</i>	<i>3038-97-0008A</i>	<i>14:20</i>			
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time In
Signature	RWP#	Time Out	Time Out	Time Out	Time Out

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET - EXPOSURE TRACKING

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

DATE _____

1-29-97

**DRD
TOTAL**

[illegible]

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET - EXPOSURE TRACKING

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

DATE
1-30-97

		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	DRD TOTAL
NAME	W. W. Bolinger	24989	08:00	08:30									
SIGNATURE	W. W. Bolinger	RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
		3038-97-0008A	NA	NA									NA
NAME	L. R. Lawson	24830	08:00	08:30									
SIGNATURE	L. R. Lawson	RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
		3038-97-0008A	N/A	N/A									NA
NAME		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	
SIGNATURE		RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
NAME		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	
SIGNATURE		RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
NAME		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	
SIGNATURE		RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
NAME		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	
SIGNATURE		RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
NAME		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	
SIGNATURE		RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
NAME		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	
SIGNATURE		RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
NAME		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	
SIGNATURE		RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD
NAME		BADGE NUMBER	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT	
SIGNATURE		RWP NUMBER	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD IN	DRD OUT	DRD

Page 5

8-64

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
1-31-97

NAME J.T. Minor	BADGE NUMBER 13770	TIME IN 1310	TIME IN	TIME IN	TIME IN
SIGNATURE J.T. Minor	RWP NUMBER 3038-97-0008A	TIME OUT 1320	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

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 2-5-97

NAME <u>W. W. Bolinger</u>	BADGE NUMBER <u>24989</u>	TIME IN <u>0745</u>	TIME IN	TIME IN	TIME IN
SIGNATURE <u>W. W. Bolinger</u>	RWP NUMBER <u>3038-97-0008A</u>	TIME OUT <u>09:30</u>	TIME OUT	TIME OUT	TIME OUT
NAME <u>T. M. McCall</u>	BADGE NUMBER <u>24827</u>	TIME IN <u>07:45</u>	TIME IN <u>12:45</u>	TIME IN	TIME IN
SIGNATURE <u>T. M. McCall</u>	RWP NUMBER <u>3038-97-0008A</u>	TIME OUT <u>09:30</u>	TIME OUT <u>13:35</u>	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

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

2-6-97

NAME <i>TH Coleman</i>	BADGE NUMBER 34667	TIME IN 10:20	TIME IN 13:30	TIME IN	TIME IN
SIGNATURE <i>TH Coleman</i>	RWP NUMBER 3038-97-0008A	TIME OUT 11:00	TIME OUT 14:00	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

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 2-7-97

NAME <i>W. W. Bolinger</i>	BADGE NUMBER <i>24989</i>	TIME IN <i>0820</i>	TIME IN	TIME IN	TIME IN
SIGNATURE <i>W. W. Bolinger</i>	RWP NUMBER <i>3038-97-0008A</i>	TIME OUT <i>9:30</i>	TIME OUT	TIME OUT	TIME OUT
NAME <i>TH Coleman</i>	BADGE NUMBER <i>34667</i>	TIME IN <i>10:15</i>	TIME IN	TIME IN	TIME IN
SIGNATURE <i>TH Coleman</i>	RWP NUMBER <i>3038-97-0008A</i>	TIME OUT <i>11:00</i>	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

SMEAR SAMPLE DATA

NAME (HP&S) <i>Calman</i>	PHONE	BLDG. NO. (HP&S) 3032	LOCATION (SMEARS TAKEN)	DATE 1-28-97 / 1-31-97
SMEARS NUMBERED:	RESULTS REQUIRED:		DATE COUNTED	COUNTED OPERATOR
From To	Date	Time		<i>Calman</i>
GIVE D/M ONLY ON SMEARS OVER:		REMARKS:		
20 d/m α		CTA-041 3038-10B		
200 d/m β		CTB-047 3038-10P		

^a	β	LOCATION (*)	^a	β	LOCATION (*)	^a	β	LOCATION (*)
1-28-97	<200	Chair Seat	34	<20	Non-Compactable Waste	67	<20	Compactable Waste
2		Back	35			68		
3		base	36			69		
4		stern	37			70		
5		wheels	38			71		
6	NDASL	Large area	39			72		
7	NDGMT	massings of	40			73		
8		work floor area	41			74		
9		+ egress area	42			75		
10	↓	↓	43			76	↓	↓
11			44			77	NDASL	NDGMT
12	1-29-97		45			78		Work area:
13	NDASL	Work area/egress	46			79		egress area
14	NDGMT	area floor	47			80	↓	↓
15			48			1-31-97	<200	Compactable
16			49			81	<20	Waste
17			50			82		
18			51			83		
19			52		Compactable	84		
20	↓	↓	53		Waste	85		
21	1-30-97	Non-Compactable	54			86		
22		Waste	55			87		
23	<20	<200	56			88		
24			57			89		
25			58			90		
26			59			91		
27			60			92		
28			61			93		
29			62			94		
30			63			95		
31			64			96		
32			65			97	↓	↓
33	↓	↓	66	↓	↓	98		
						99		

SMEAR SAMPLE DATA

NAME (HP&S) <i>Column</i>	PHONE	BLDG. NO. (HP&S) 3032	LOCATION (SMEARS TAKEN)	DATE 2-3-97/2-10-97
SMEARS NUMBERED:	RESULTS REQUIRED:		DATE COUNTED	COUNTER OPERATOR <i>Column</i>
From To	Date	Time		
GIVE D/M ONLY ON SMEARS OVER:		REMARKS:		
d/m α		CTA-041 3038-10B		
d/m β		CTB-047 3038-10P		

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
2-3-97			34		Chemicals	67		
2NDASC	NOGMT	Egress Area	35			68		
		Floor	36		↓	69		
3			37		Oven	70		
4			38			71		
5			39			72		
6 2-4-97			40			73		
7 <20	<200	Grill in	41		Lead Can	74		
8		Ceiling Exhaust	42		↓	75		
9		Duct	43NDASC	NOGMT	General Area	76		
10 <20	<200	Fluorescent	44		Floor &	77		
11		Bulbs	45		Egress Area	78		
12			46		Floor	79		
13			47			80		
14			48			81		
15NDASC	NOGMT	General Work	49			82		
16		Area floor.	50 2-6-97			83		
17			51NDASC	NOGMT	Egress Area	84		
18 2-5-97	<200	Fluorescent Bulbs	52		Floor	85		
19			53		↓	86		
20			54 2-7-97			87		
21		Ladder	55 <20	<200	Misc	88		
22			56		Supplies	89		
23			57			90		
24			58			91		
25		Cylinders	59			92		
26			60 2-10-97		Tools	93		
27			61 <20	<200		94		
28			62			95		
29		Thermometers	63			96		
30			64			97		
31			65			98		
32			66			99		
33								

ORNL Radiological Survey Data

Survey Number: 3038-97-0238

3038 Field Office

Date: 1-29-97 Time: 10:30

Give only DPM on smears over	
<u>20</u>	dpm/100 cm ² s
<u>200</u>	dpm/100 cm ² s

A	B
1 < 20	1 < 200
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

Hoods
#8683

CTA-041
CTB-047

Note: Survey Taken
Prior to personnel
removing/cleaning
items & hood.

(#)	- 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: 3038-97-0238

3038 Field Office

Date: 2-6-97 Time: 10:30

Give only DRI on surveys over
 20 dpm/100 cm² &
 200 dpm/100 cm² &

A	B
1 <20	1 <200
2	2 ↓
3	3 300
4 ↓	4 <200
5 240	5 110,000
6 <20	6 <200
7	7 1000
8	8 450
9	9 2100
10	10 4300
11	11 1000
12 ↓	12 1500
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

Hoods
 # 8690

Column
 34667

②	- Smear Location	Boundary Designations	
②	- 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: 3038-97-0238 3038 Field Office Date: 2-6-97 Time: 10:30

Give only data on items over 200 dpm/100 cm² or 2 dpm/100 cm²

A	B
1	1200
2	1560
3	1200
4	1200
5	1200
6	1200
7	1200
8	1200
9	1200
10	1200
11	1200
12	1200
13	1200
14	1200
15	1200
16	1200
17	1200
18	1200
19	1200
20	1200
21	1200
22	1200
23	1200
24	1200
25	1200
26	1200
27	1200
28	1200
29	1200
30	1200
31	1200
32	1200
33	1200

Hoods
#8683
Bldg 3032

Boundary Designations	Default units are in mR/hr and are for open window beta/gamma readings. Letter suffixes with the number indicate specific radiations: B - Beta (mR/hr), G - Gamma (mR/hr), N - Neutron (mR/hr), Boundary designations are looking from the designations into the zoned area.
AS - Air Sample Location	UM - Underground Radioactive Materials Area
SOP - Step-off Pad	RM - Radioactive Materials Area
GA - General Area Dose Rate	AR - Airborne Radioactivity Area
30 - 30 cm Dose Rate	VR - Very High Radiation Area
CR - Contact Dose Rate	HR - High Radiation Area
LA - Large Area Smear	CA - Contamination Area
RA - Radiation Area	BA - Radiological Buffer Area

ORNL Radiological Survey Data

Survey Number: 3038-97-0238

3038 Field Office

Date: 2-6-97 Time: 10:30

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	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: 3038-77-0238 3038 Field Office Date: 2-6-97 Time: 10:30

Give only data on areas over
200 sq ft
200 sq ft or more

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

Hoods
8689
Bldg 3032

CTA-041
CTB-047
3038-106
3038-10P
Survey performed after
all items removed
from hood.

34667
C. G. Gorman

② - Smear Location	RA - Radiation Area
③ - Large Area Smear	HR - High Radiation Area
④ - Contact Dose Rate	VR - Very High Radiation Area
⑤ - 50 cm Dose Rate	AR - Airborne Radioactivity Area
⑥ - General Area Dose Rate	SC - Soil Contamination Area
⑦ - Step-off Pad	RM - Radioactive Materials Area
⑧ - Air Sample Location	UM - Underground Radioactive Materials Area

Boundary Designations

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

ORNL Radiological Survey Data

Survey Number: 3038-97-0258 3038 Field Office Date: 2-6-97 Time: 2:00

34667

(c)	(d)	Boundary Designations	
		BA - Radiological Buffer Area	CA - Contamination Area
		RA - Radiation Area	HA - High Radiation Area
		VR - Very High Radiation Area	HC - High Contamination Area
		AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
		RM - Radioactive Material 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 betagamma readings. Letter suffixes with the number indicate specific radionuclides: 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: 3038-97-0238

3038 Field Office

 Date: 2-7-97 Time: 10:30

Give only ONE the values over	
20	400/100 cm ² s
200	400/100 cm ² s

BUILDING 3032

Colman
34667

A	B
1	<20
2	<200
3	2
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	34

 3038-10P
 3038-10B
 CTA-041
 CTB-047

Survey performed after material removed from hoods & area and hood doors sealed.

Boundary Designations	
① - Smear Location	RA - Radiation Area
② - Large Area Smear	HR - High Radiation Area
③ - Contact Dose Rate	VR - Very High Radiation Area
④ - 30 cm Dose Rate	AR - Airborne Radioactivity Area
⑤ - General Area Dose Rate	RM - Radioactive Materials Area
⑥ - Step-off Pad	UM - Underground Radioactive Materials Area
⑦ - Air Sample Location	
	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.

DISTRIBUTION

1. L. V. Asplund
2. W. D. Brickeen
3. R. A. Brown
4. T. W. Burwinkle
5. K. Constant
- 6-15. R. E. Eversole
17. K. W. Haff
- 18-22. S. A. Herron
23. L. L. Kaiser
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25. P. T. Owen
26. L. D. Owens
27. B. D. Patton
28. L. B. Raulston
29. Central Research Library
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