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ORNL/ER-414

**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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DEPARTMENT OF ENERGY

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ENERGY SYSTEMS



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

Date Issued—September 1997

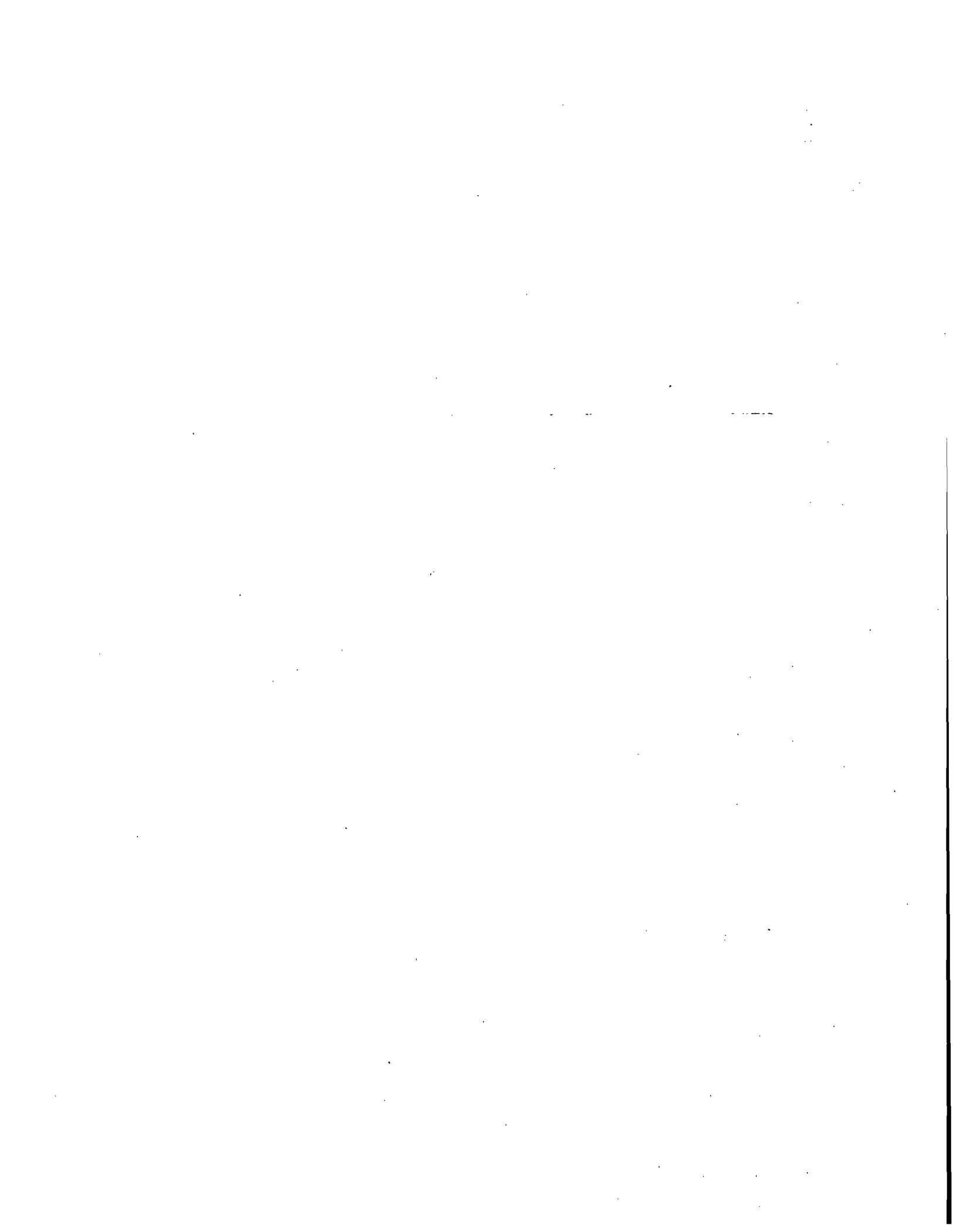
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Environmental Management Activities at the
OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37831
managed by
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
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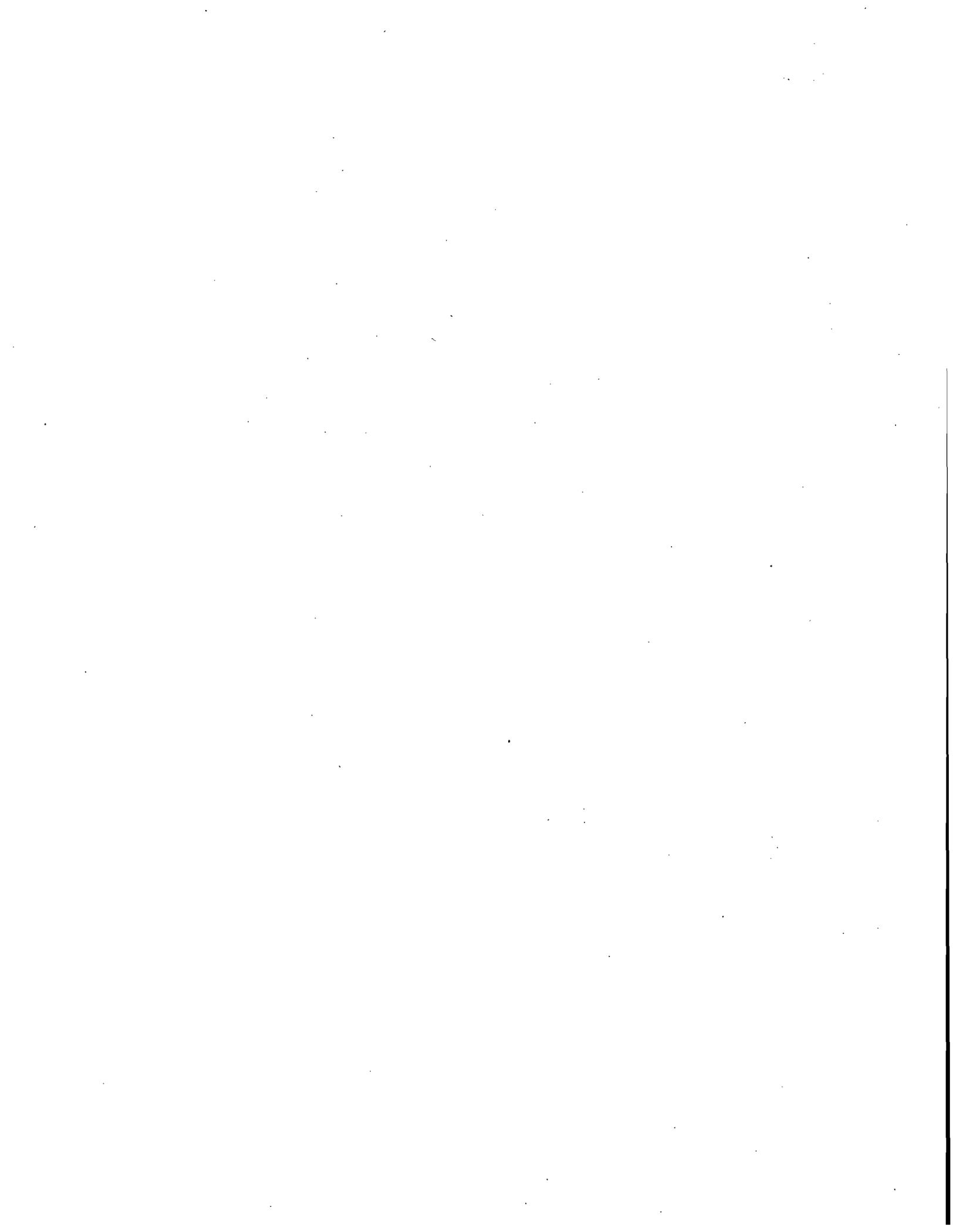


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PREFACE

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.

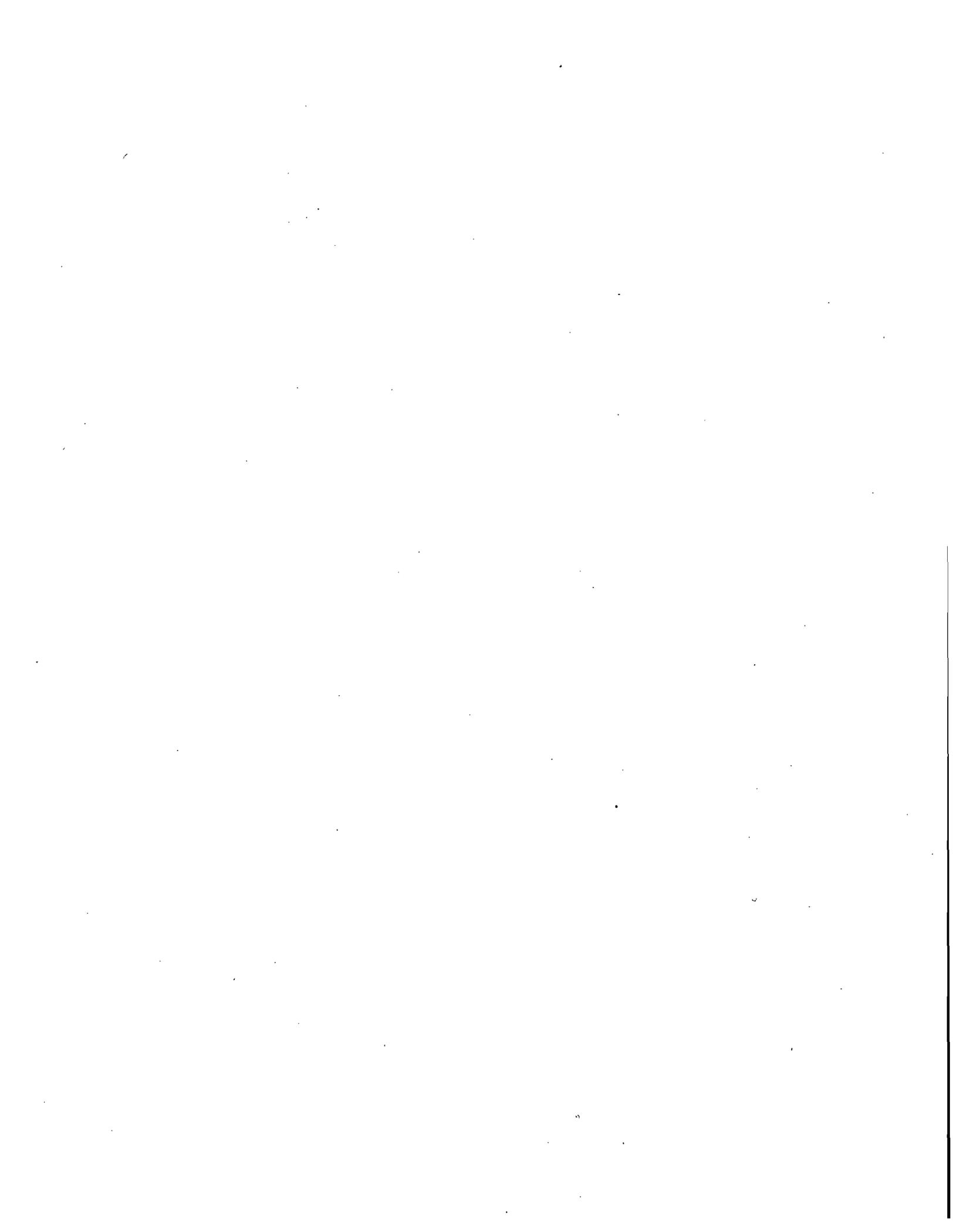
ABBREVIATIONS

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 surplused, 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 inleakage 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 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

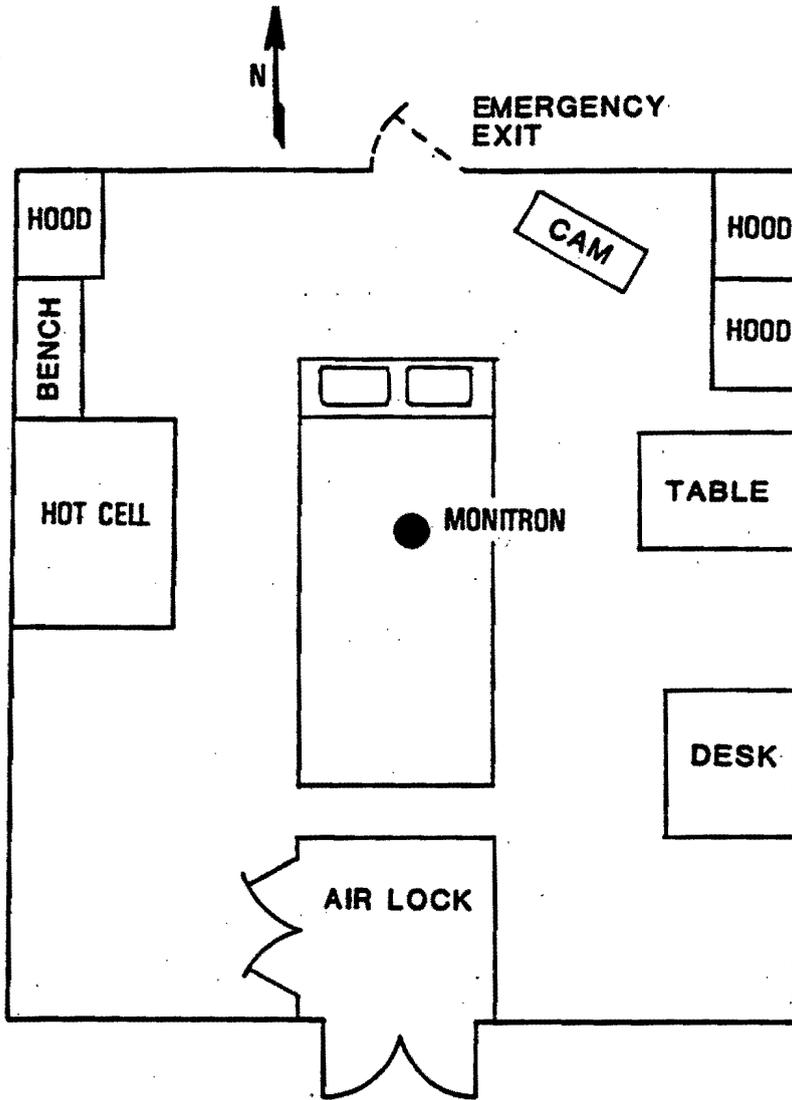
Document Number	Document Title
Draft	Facility Deactivation End Points Handbook; Volume 1: Method and Examples.
Draft	Facility Deactivation End Points Handbook; Volume 2: Deactivation Practices.
DOE/EM-0246	Decommissioning Resource Manual. August 1995
ORNL/ER-249/R2	Martin Marietta Environmental Restoration 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





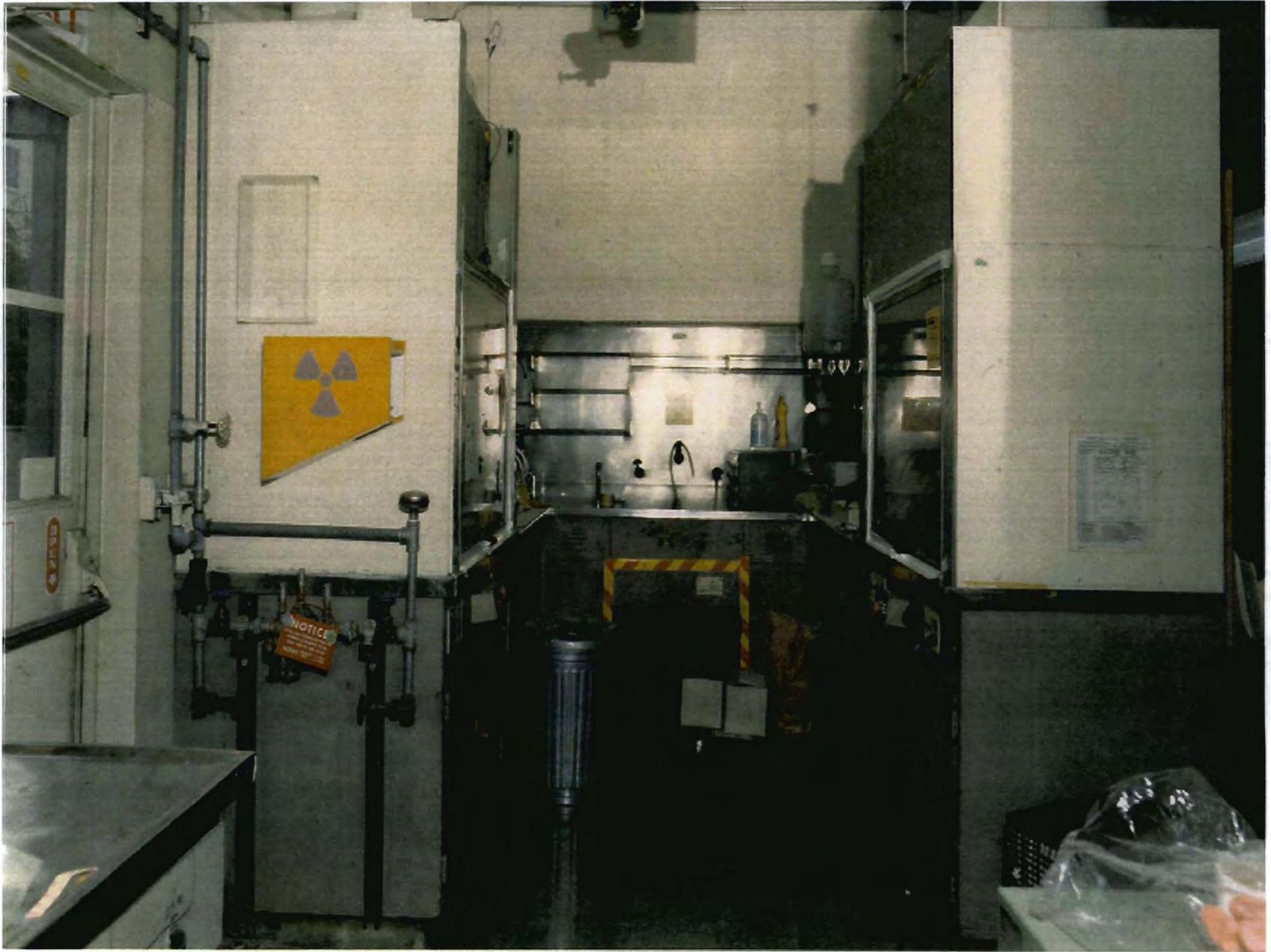
ATTACHMENT 2
BLDG. 3032
PREDEACTIVATION FACILITY PHOTOGRAPHS







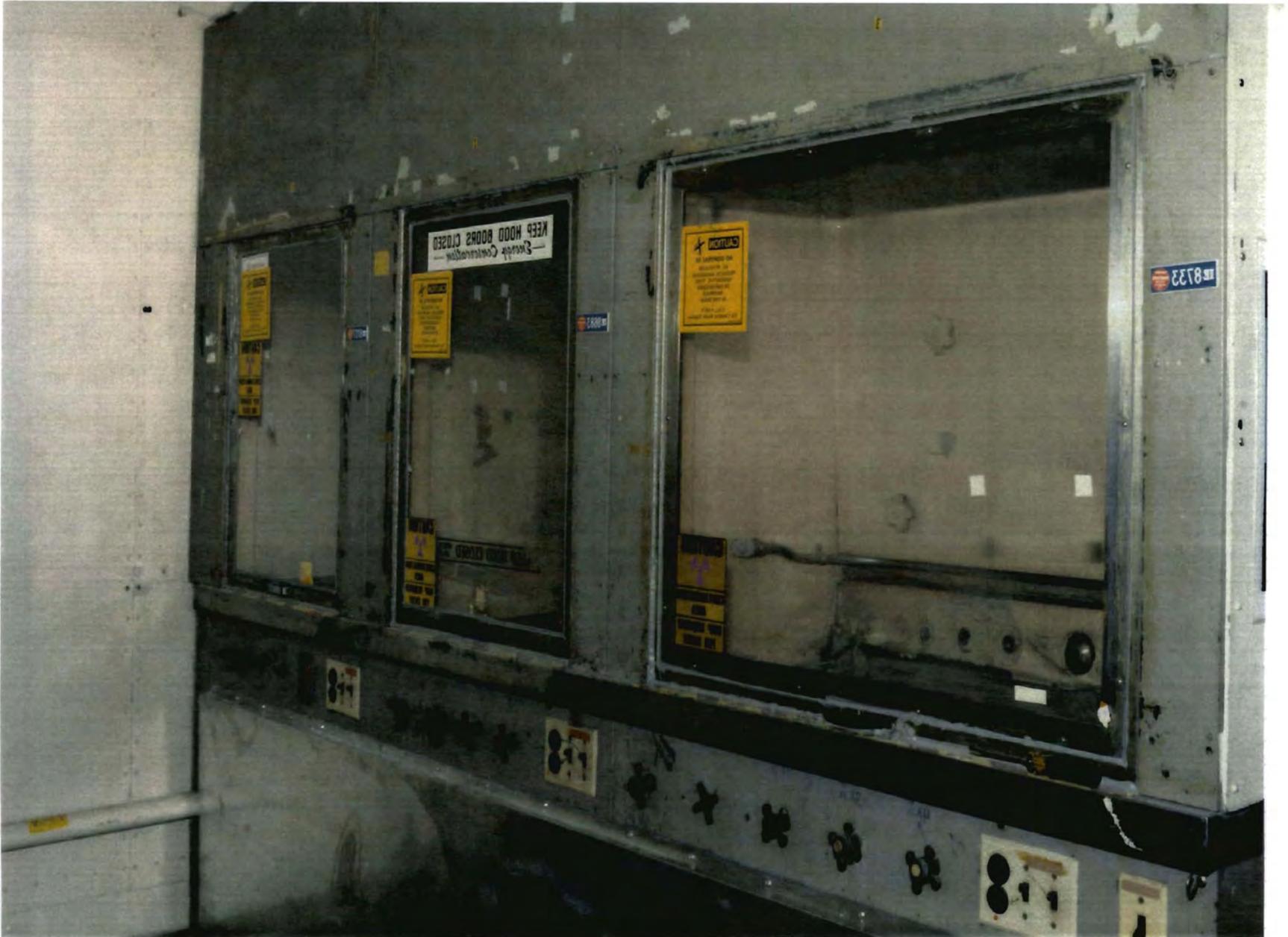




ATTACHMENT 3
BLDG. 3032
POSTDEACTIVATION FACILITY PHOTOGRAPHS

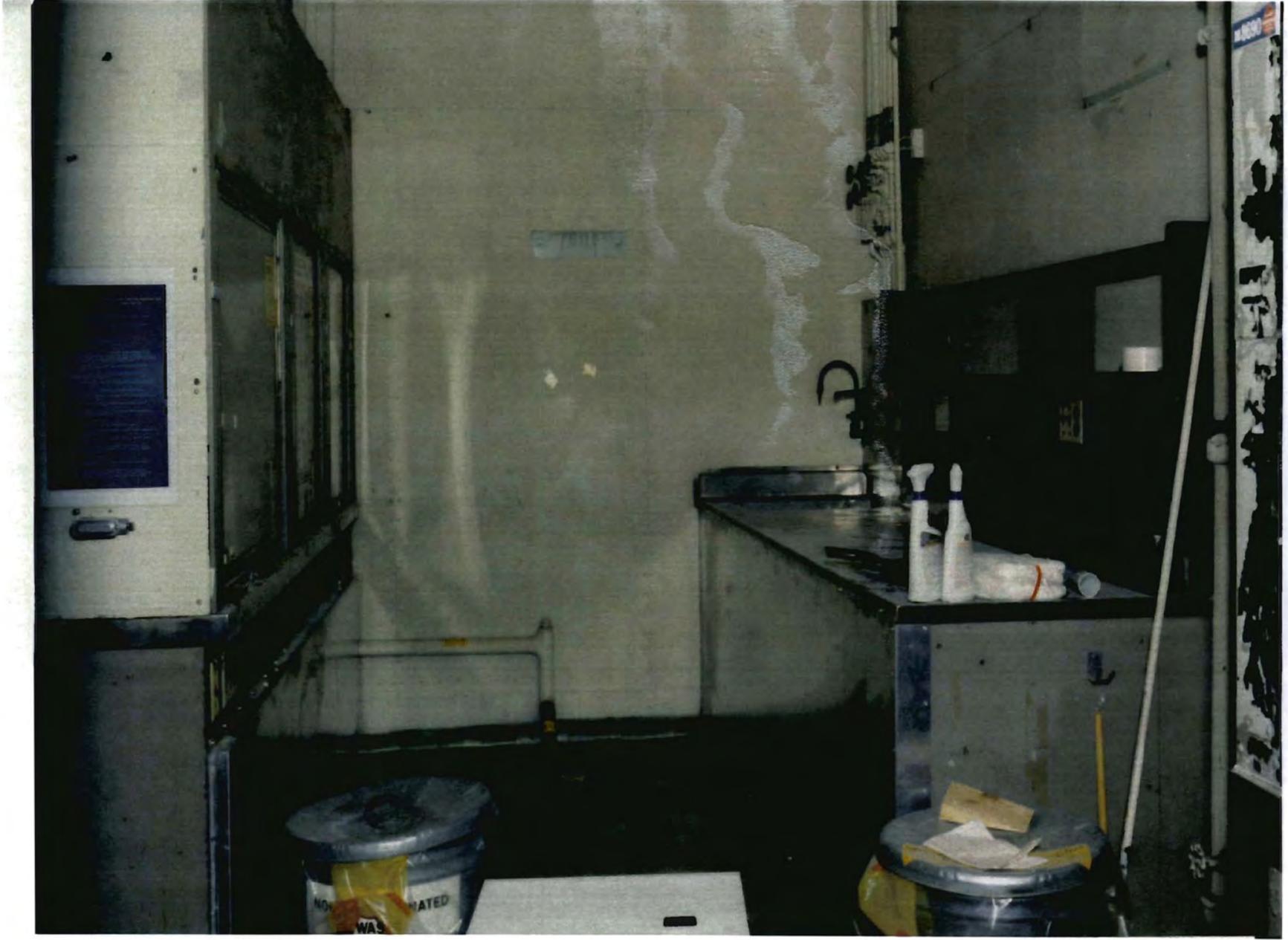
1900

3-3





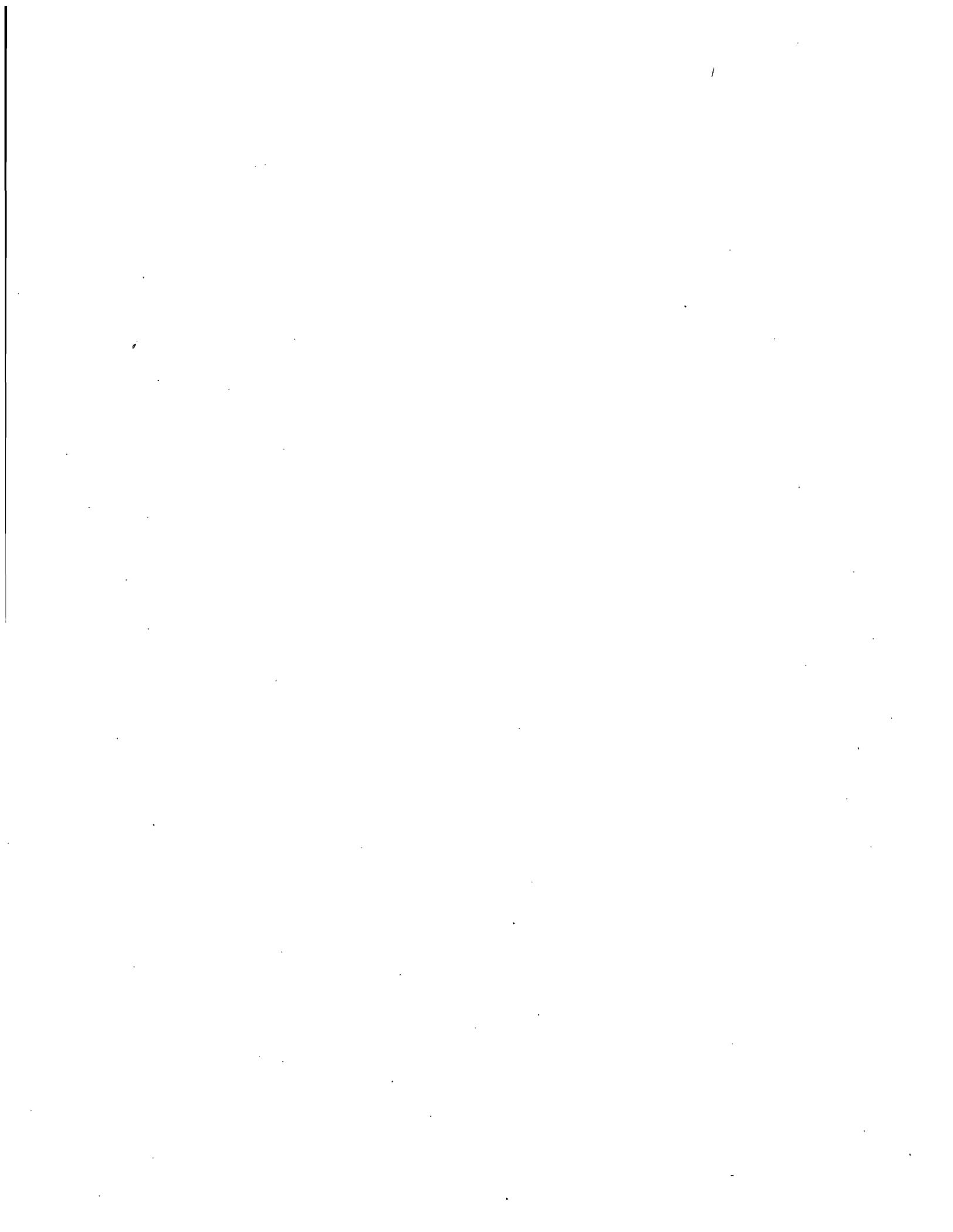




**ATTACHMENT 4
ADMINISTRATIVE TURNOVER
PACKAGE CHECKLIST**

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

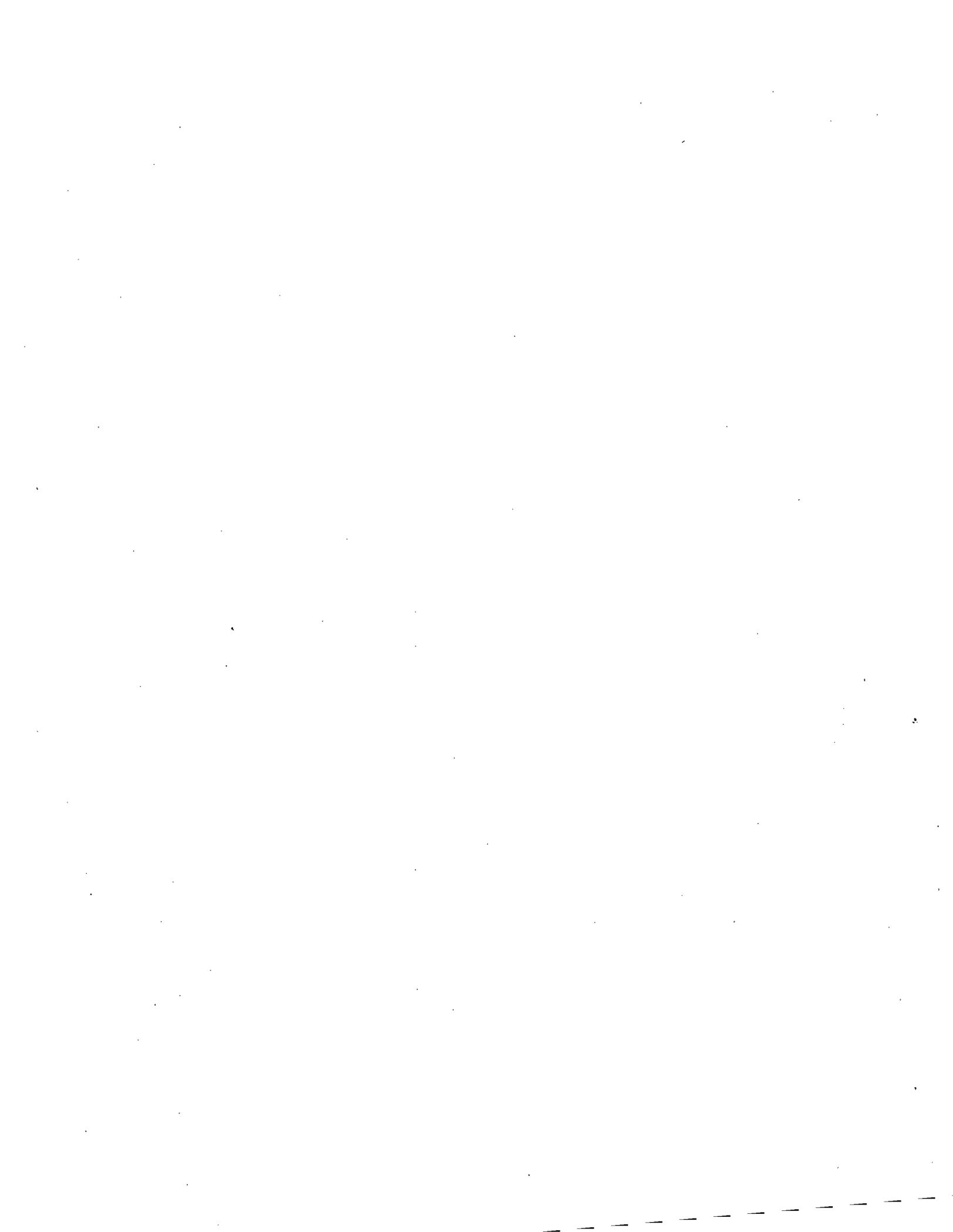


**ATTACHMENT 5
TECHNICAL TURNOVER
PACKAGE CHECKLIST**

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



ISOTOPE AREA RADIOLOGICAL SURVEY MAP

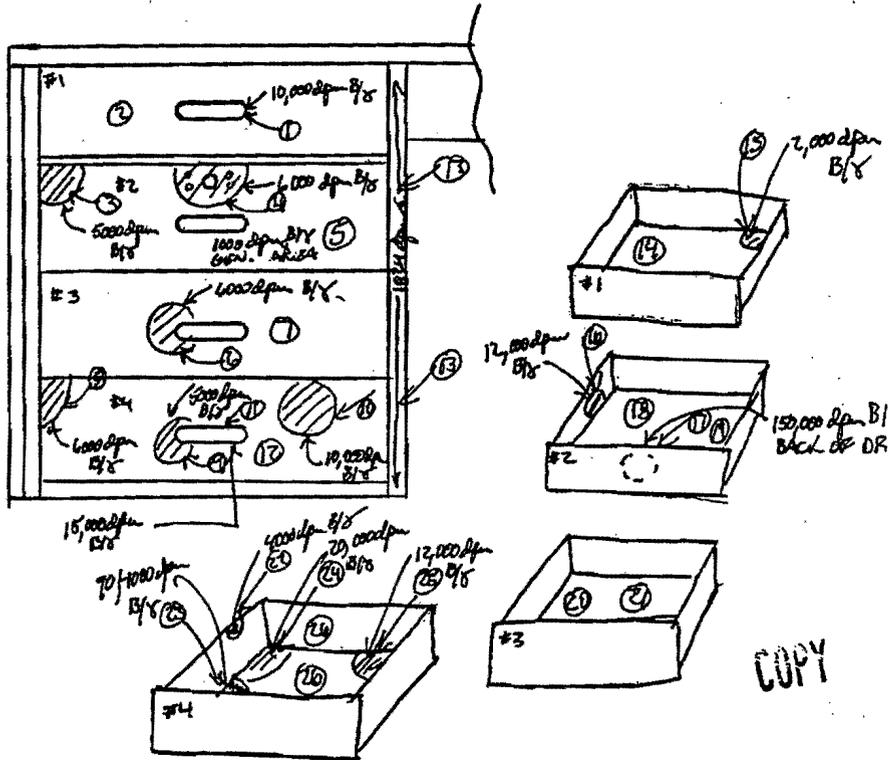
BUILDING 3032 LOCATION SOUTH EAST CORNER DATE 2-8-43 SURVEYOR J.A. MILLER ³²⁶²¹

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

INSTRUMENTS: 3001 LNSG COUNTERS: GTA-012 GFB-024 BACKGROUND SURVEY: BETA/GAMMA NEUTRON

Give only DDM on smears over MDA:
20 dpm/100 cm² α
200 dpm/100 cm² β

α	β
1	34
2	33
3	38
4	37
5	35
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 Monitor Control Unit	RAD/CON -Radiation & Contamin
# @ 1 Foot Dose Rate	MOC Monitor Chamber	
(⊖) Fast Neutron Dose Rate	MON Monitor	
# Beta/Gamma Dose Rate	REGULATED AREA	

SMEAR SAMPLE DATA

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

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	—	307	55			88		
23	—	4216	56			89		
24	—	1824	57			90		
25	—	2772	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

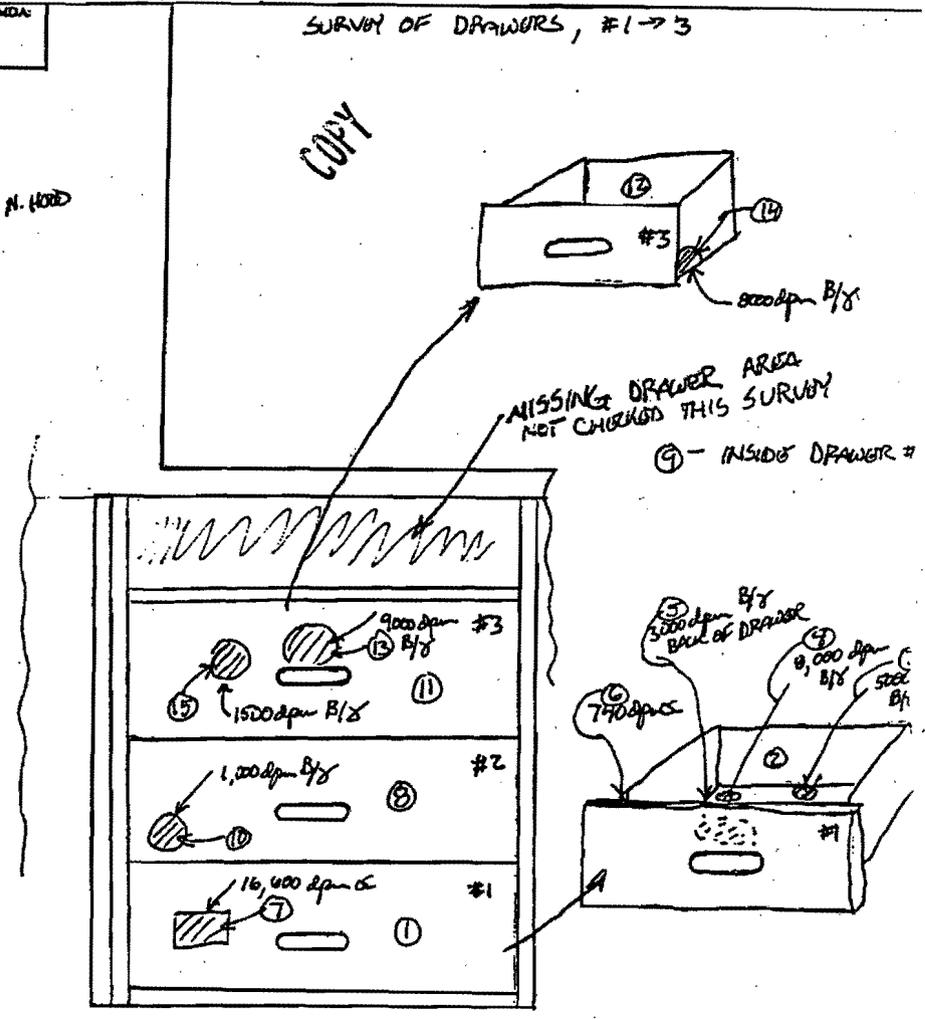
BUILDING 3032 LOCATION WEST DRAWERS/N. HOOD DATE 2-8-93 SURVEYOR [Signature]

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

INSTRUMENTS: 3047-1B 3047-7P COUNTERS: CA-032 CRB-001 BACKGROUND SURVEY: BETA/GAMMA NEUTRON

Give only D/M on smear over MDA:
3.0 dpm/100 cm² α
2.0 dpm/100 cm² β

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
- α** 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.
- 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) SLEASG NUMBERED: <i>20</i>		PHONE 4-6706	BLDG. NO. (HP&S) 3047	LOCATION (SMEARS TAKEN) 3032	DATE 2-8-93
From 1 To 15	RESULTS REQUIRED: Date 2-8-93 Time 2210		DATE COUNTED 2-8-93		COUNTY OPERATOR <i>[Signature]</i> CRB-001
GIVE D/M ONLY ON SMEARS OVER: 20 d/m α 200 d/m β			REMARKS: 3032 REG. AREA SURVEY		

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
1	30	<200	0/5	D#1		67		
2	<20	297	1/5	D#1		68		
3	↓	330	5/8	B/x D#1		69		
4	↓	297	8/8	B/x D#1		70		
5	<20	<200	3/8	B/x D#1		71		
6	93	<200	7/0	α D#1		72		
7	4946	858	16.6/8	D#1		73		
8	<20	<200	0/5	D#2		74		
9	↓	↓	1/5	D#2		75		
10	↓	↓	1/8	B/x D#2		76		
11	↓	<200	0/5	D#3		77		
12	↓	↓	1/5	D#3		78		
13	↓	<200	9/8	B/x H/S		79		
14	↓	341	8/8	B/x H/S		80		
15	<20	<200	1.5/8	B/x H/S		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		

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

BUILDING 3032 LOCATION MISSING DRAWER / EAST OF N. HALL DATE 2-9-93 SURVEYOR [Signature]

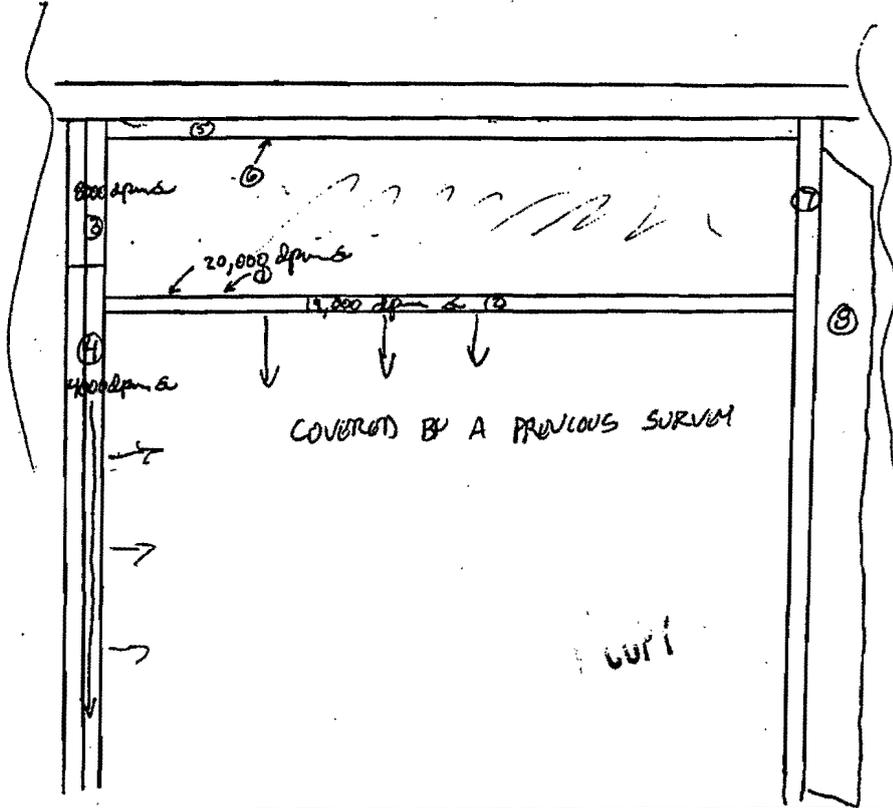
SMEAR SURVEY: Alpha Beta/Gamma Beta PROBE SURVEY: Alpha Beta/Gamma BETA

INSTRUMENTS: 3047-1P 3047-1B COUNTERS: CTA-022 CTB-001 BACKGROUND SURVEY: BETA/GAMMA NEUTRON

Give only DPM on areas over MDA:
20 dpm/100 cm² α
200 dpm/100 cm² 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
- (A) Airborne Radioactivity
- (α) Alpha Probe Location
- (β) Smear Location
- # @ Contact Beta/Gamma
- # @ 1 Foot Dose Rate
- [Symbol] Fast Neutron Dose Rate
- [Symbol] Beta/Gamma Dose Rate

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

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

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

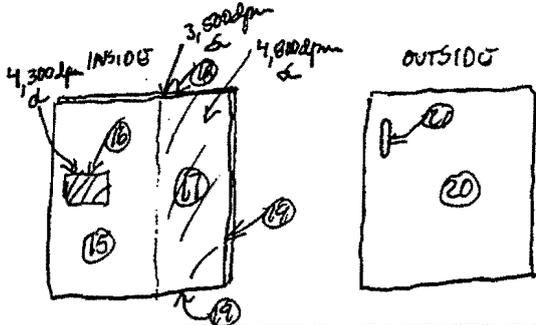
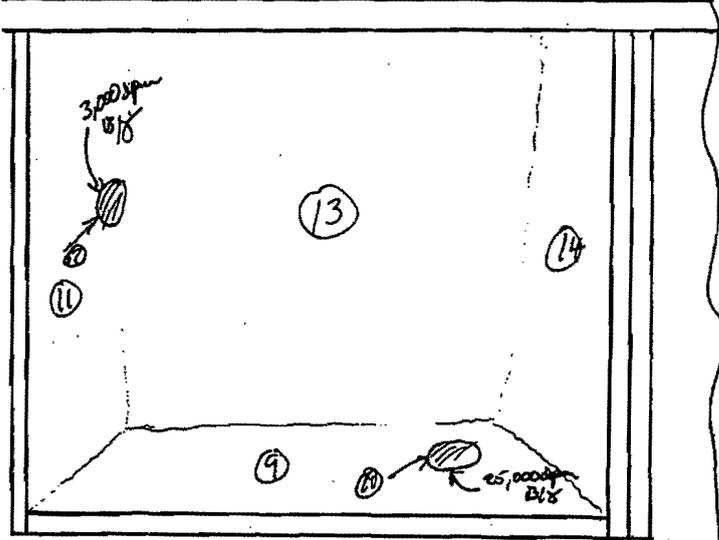
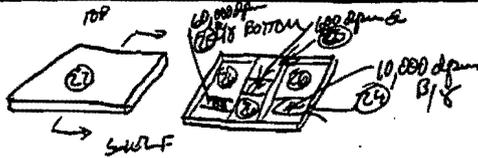
BUILDING 3032 LOCATION NORTHEAST CABINET (ON NORTH WALL) DATE 2-9-93 SURVEYOR [Signature]

SMEAR SURVEY: Alpha Beta/Gamma Beta PROBE SURVEY: Alpha Beta/Gamma BETA
 INSTRUMENTS: 3047-11P 3047-1B COUNTERS: CTA-032 CTB-201 BACKGROUND SURVEY: BETA/GAMMA NEUTRON

Give only D/M on smears over MDA:
 _____ dpm/100 cm² α
 _____ dpm/100 cm² β

PAGE 2 OF 465

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



NIM 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	NOU Monitor Control Unit	RAD/CON -Radiation & Contamin
⊙ @ 1 Foot Dose Rate	MOC Monitor Chamber	
(⊙) Fast Neutron Dose Rate	MON Monitor	
.f Beta/Gamma Dose Rate	REGULATED AREA	

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

BUILDING 3032 LOCATION NORTH CABINET UNDER EAST SINK DATE 2-9-93 SURVEYOR [Signature]

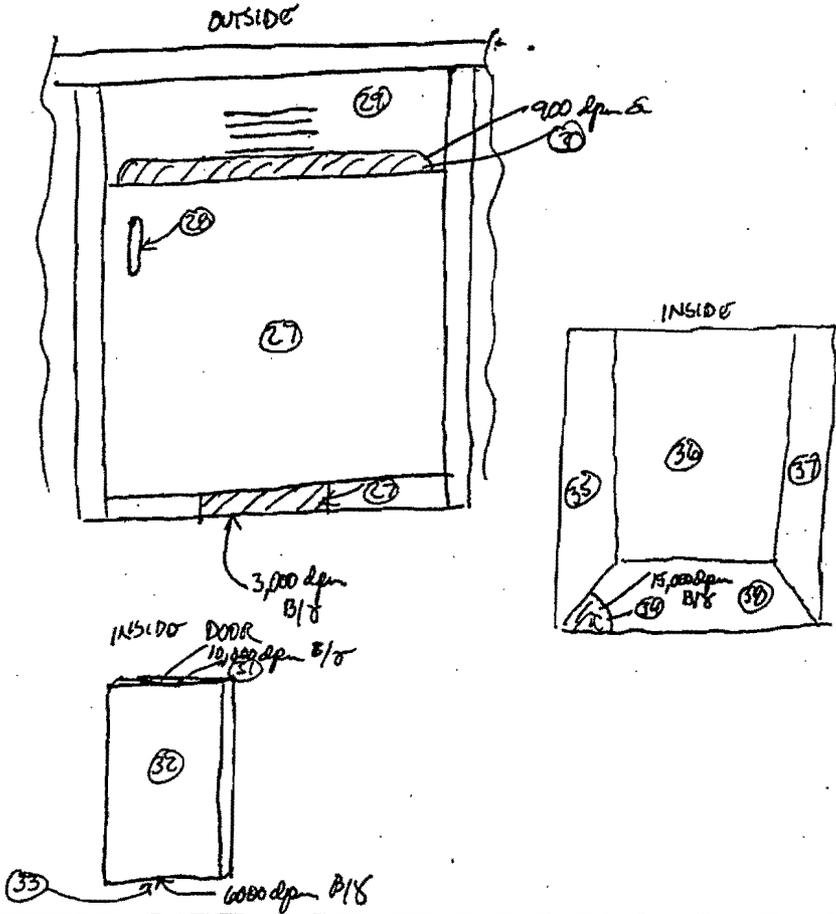
SMEAR SURVEY: Alpha Beta/Gamma Beta PROBE SURVEY: Alpha Beta/Gamma BETA

INSTRUMENTS: 3047-1P 3047-1B COUNTERS: CYA-022 CIB-101 BACKGROUND SURVEY: BETA/GAMMA NEUTRON

Give only D/M on smear over MDA:
20 $\mu\text{m}/100 \text{ cm}^2 \alpha$
200 $\mu\text{m}/100 \text{ cm}^2 \beta$

PAGE 3 OF KA
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



<p>NIM Neutron Monitor</p> <p>(A) Airborne Radioactivity</p> <p>(α) Alpha Probe Location</p> <p>(β) Smear Location</p> <p>β @ Contact Beta/Gamma</p> <p>β @ 1 Foot Dose Rate</p> <p>(β) Fast Neutron Dose Rate</p> <p>(β) Beta/Gamma Dose Rate</p>	<p>(CAM) Continuous Air Monitor</p> <p>(CAAM) Contin. Alpha Air Mon.</p> <p>(LMA) Lab Monitor Alpha</p> <p>(LMB) Lab Monitor Beta/Gam.</p> <p>(MCU) Monitor Control Unit</p> <p>(MDC) Monitor Chamber</p> <p>(MON) Monitor</p> <p>[] REGULATED AREA</p>	<p>RAD -Radiation Area</p> <p>H.RAD -High Radiation Area</p> <p>V.H.RAD -Very High Radiation Area</p> <p>CON -Contamination Area</p> <p>RAD/CON -Radiation & Contaminat</p>
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SMEAR SAMPLE DATA

PAGE 4 OF 488

(HP&S) <i>[Signature]</i> SMears NUMBERED: From <u>1</u> To <u>45</u> GIVE D/N ONLY ON SMears OVER: <u>20</u> d/m α <u>200</u> d/m β		PHONE <u>4-6706</u> BLDG. NO. (HP&S) <u>3047</u> RESULTS REQUIRED: Date <u>2-10-93</u> Time <u>1000</u>	LOCATION (SMears TAKEN) <u>3032 ROT AREA</u> DATE COUNTED <u>2-10-93</u> COUNTER OPERATOR <i>[Signature]</i>	DATE <u>2-9-93</u>
REMARKS: <u>SMears FROM 3032, 2-9-93 OK</u>				

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	885	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	0 1/2 DRAWER	75		
10			43	264	3.3K. ST. CAB.	76		J.B. TRENK
11			44	<200	CAB. HANDLE	77		
12			45	<20	275	10K SPOT UNDER DRAWER		
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 UNIT ON EAST SIDE DATE 2-9-93 SURVEYOR J.B. TREN

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

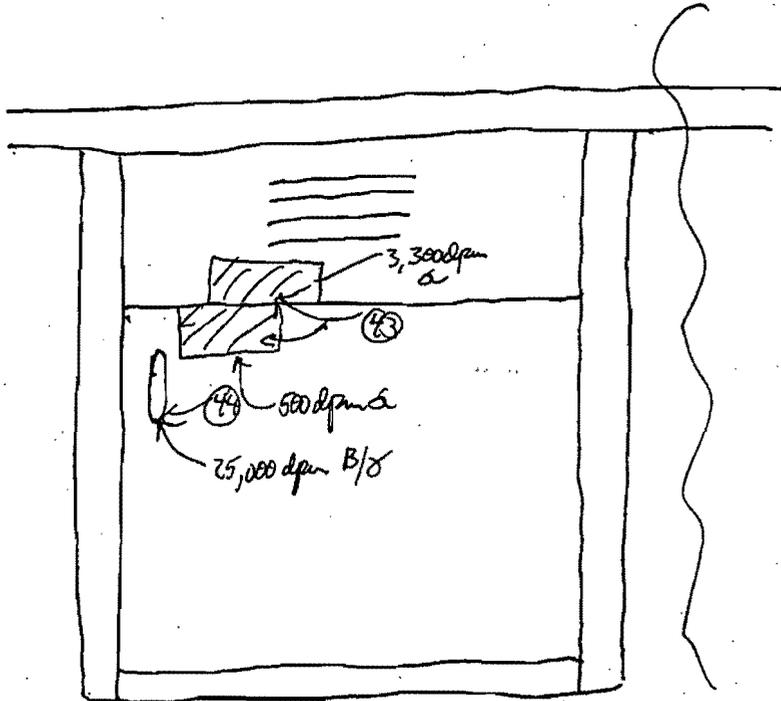
INSTRUMENTS: 3M-11P 505-5B COUNTERS: OTA-01C CYB-052 BACKGROUND SURVEY: BETA/GAMMA NEUTRON

Give only D/R on sectors over MDA:
 _____ dpm/100 cm² α
 _____ dpm/100 cm² β

Page 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

SEE ATTACHED



NOT CHECKED INSIDE

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

ISOTOPE AREA RADIOLOGICAL SURVEY MAP

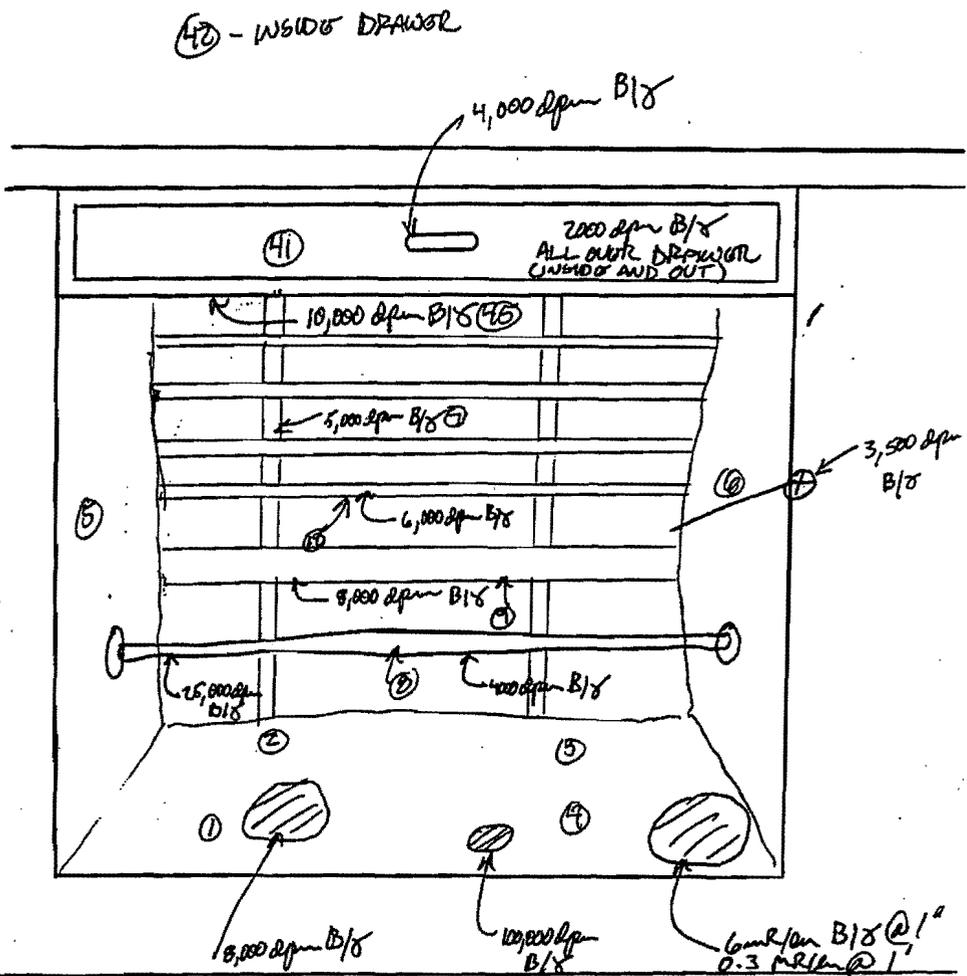
BUILDING 3032 LOCATION EAST SIDE / SOUTH WOOD DATE 2-9-83 SURVEYOR 33045 JB TRUBEN

SMEAR SURVEY: Alpha Beta/Gamma Beta PROBE SURVEY: Alpha Beta/Gamma BETA
 INSTRUMENTS: 3047-1P 5505-5B COUNTERS: CTA-222 CTR-201 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
 SMEAR SURVEY

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
 - (Δ) Alpha Probe Location
 - (B) 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

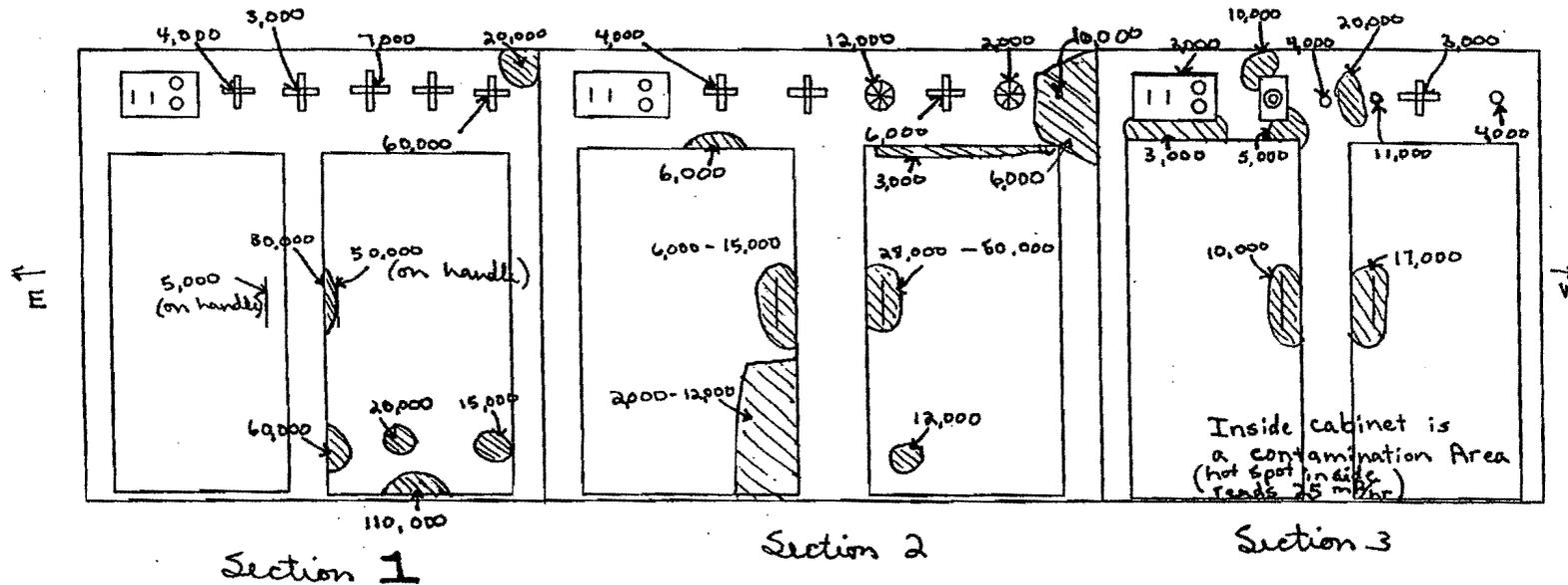
(HP&S) J.B. Treen	PHONE 44997	BLDG. NO. (HP&S) 3037	LOCATION (SMEARS TAKEN) LAB area east of South hall	DATE 2-9-93
SMEARS NUMBERED: From 1 To 10	RESULTS REQUIRED:		DATE COUNTED 2-10-93	COUNTER OPERATOR J.B. Treen
GIVE D/M ONLY ON SMEARS OVER: 13 d/m α 28 d/m β	REMARKS: CTA 042 MDA 13 dpm CTB 058 MDA 78 dpm			

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
1	37	—	34			67		
2	146	175	35			68		
3	37	170	36			69		
4	400	8000 Δ	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		Δ Field counted	48			81		
16		3047 - 12P	49			82		
17		5508 - 05B	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 Form 10-1-67 (Rev. 1-67) (10-1-67)

COPY

3032 CABINETS UNDER HOODS ON WEST SIDE



8-14

All readings in dpm Bq

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

3038-3P
Resurveyed by
Deborah Crosson
6-16-94

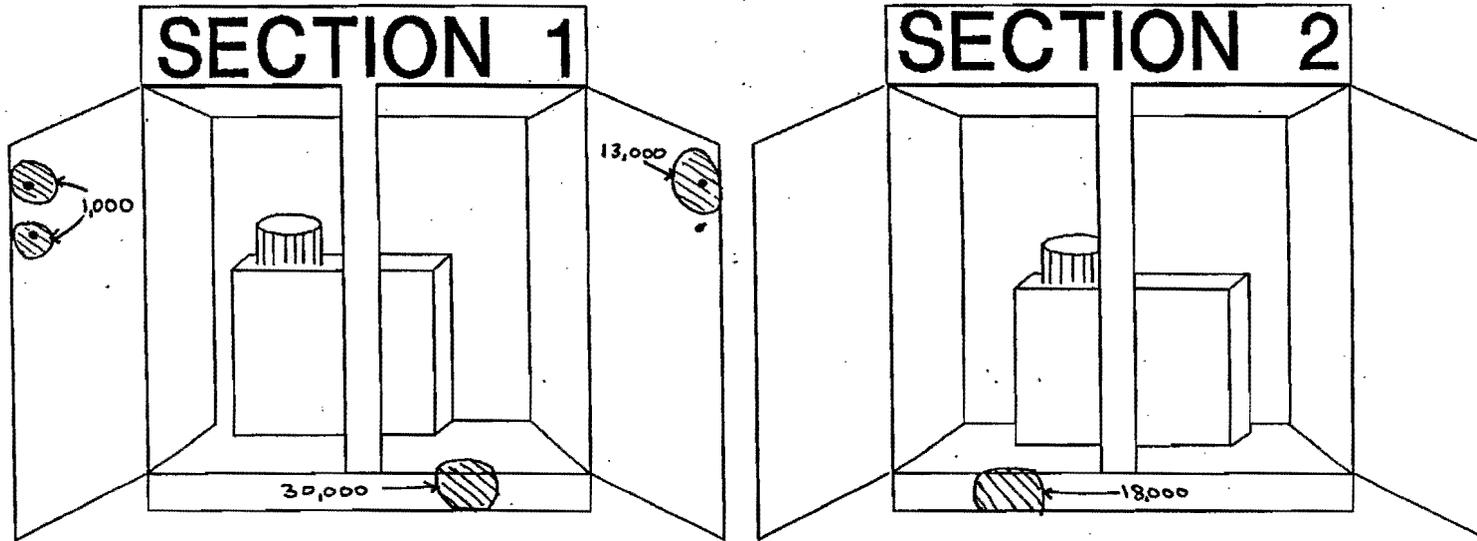
SMEAR SAMPLE DATA

NAME (HP&S) <i>Deborah Crozane</i>		PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>6-24-94</i> (16c)
SMEARS NUMBERED: From <i>1</i> To <i>69</i>		RESULTS REQUIRED:		DATE COUNTED <i>6-24-94</i>	COUNTER OPERATOR <i>D. Crozane</i>
GIVE O/M ONLY ON SMEARS OVER: <i>20</i> d/mc <i>200</i> d/mβ		REMARKS: <i>Smears taken on spots that probed, on cabin beneath hoods in regulated area on southwest side. (Knob 1 starts on left)</i>			
<i>CTA-041, CTB-047</i>					

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 right door			73		
8	392	50,000 spot	Sec. 1 right door			74		
9		20,000 spot	Sec. 1 right door			75		
10		15,000 spot	Sec. 1 right door			76		
11		60,000 spot	Sec. 1 right door			77		
12		5,000 spot	Sec. 1 left door			78		
13		2,000 - 12,000	Spot Sec. 2 left door			79		
14		6,000 - 15,000	Spot Sec. 2 left door			80		
15		6,000 spot	overlap of door ^{left} Sec. 2			81		
16		3,000 spot	on top of right door Sec. 2			82		
17		12,000 spot	on right door Sec. 2			83		
18		27k - 50,000 spot	Sec. 2 right door			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 on top of outlet			95		
30		5,000 spot	Sec. 3			96		
31		20,000 spot	Sec. 3			97		
32		3,000 spot	Sec. 3 under outlet			98		
33		10,000 spot	Sec. 3			99		

UCN-1632 (*) Give only if required.

3032 SOUTHWEST HOOD CABINETS



Readings in dpm Bx

Resurveyed
6/27/94
Debra Crossno
3038-8P

SMEAR SAMPLE DATA

NAME (HP&S) <i>Deborah 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 CTA-041, CTB047</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		

HCN-1632 (*) Give only if required.

SMEAR SAMPLE DATA

NAME (HP&S) <i>K. J. Mc Ghee</i>	PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>303B</i>	LOCATION (SMEARS TAKEN) <i>3032 *</i>	DATE <i>1/29/93</i>
SMEARS NUMBERED: From <i>1</i> To <i>1</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>303B-II CTA-041 CTB-047</i>			

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

COPY

SMEAR SAMPLE DATA

NAME (HPAS) <i>R. J. McHale</i>	PHONE <i>46704</i>	BLDG. NO. (HPAS) <i>303B</i>	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>7/29/93</i> <i>8/26/93</i>
SMEARS NUMBERED: From <i>1</i> To <i>1</i>	RESULTS REQUIRED:		DATE COUNTED	COUNTER OPERATOR <i>ZIM</i>
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β	REMARKS: Contamination found under Hood in Bldg. 3032. Hood is Located on North Wall of 3032. <i>303B-3B</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	<i>245</i>	<i>9991</i>						
		<i>MAX. Smear</i>	34			67		
2		<i>on Drain</i>	35			68		
3		<i>Under hood.</i>	36			69		
4			37			70		
5		<i>MAX. Probe</i>	38			71		
6		<i>46,000 DPMα</i>	39			72		
7		<i>Under Hood</i>	40			73		
8			41			74		
9		<i>MAX. Probe</i>	42			75		
10		<i>on Drain</i>	43			76		
11		<i>59,400 DPMα</i>	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		
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26			59			92		<i>COPY</i>
27			60			93		
28			61			94		
29			62			95		
30			63			96		
31			64			97		
32			65			98		
33			66			99		

UCN-1632 (*) Give only if required.

ISOTOPE AREA RADIOLOGICAL SURVEY

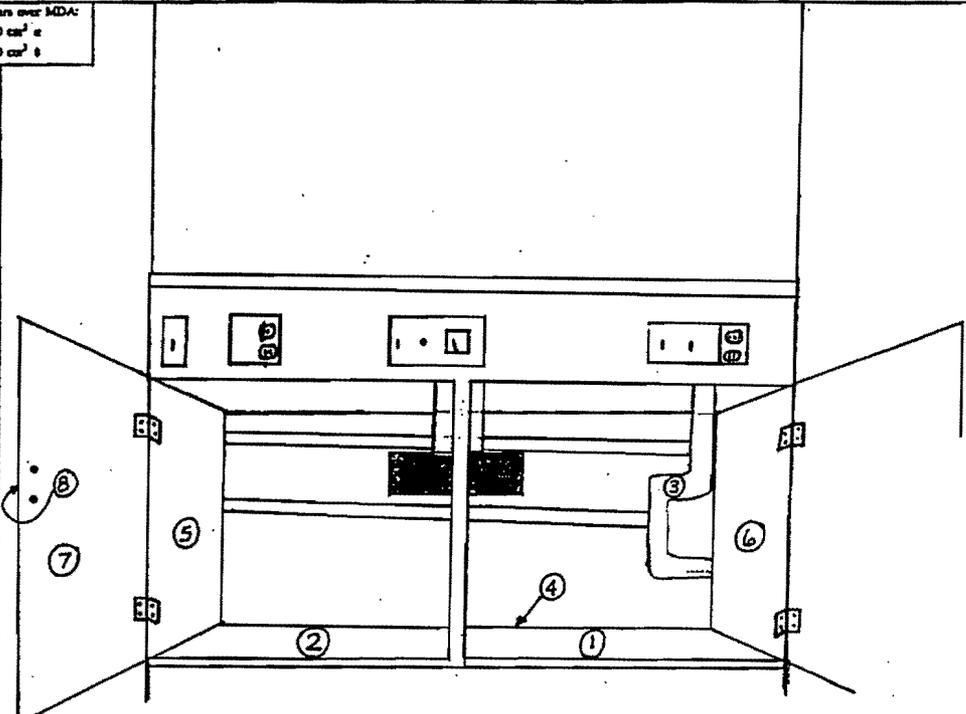
BUILDING 3032 LOCATION Cabinet under Hood on E. Wall DATE 1/26/93 SURVEYOR John Slator
K. J. McWhel

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

INSTRUMENTS: 3039-3B COUNTERS: CTA-04 CTB-047 BACKGROUND SURVEY: BETA/GAMMA NEUTRON

Flow rate: FPM on sensors over MDA:
20 dpm/100 cm² α
200 dpm/100 cm² β

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



MAX. ALPHA Probe: 59400 DPM/100cm²

COPY

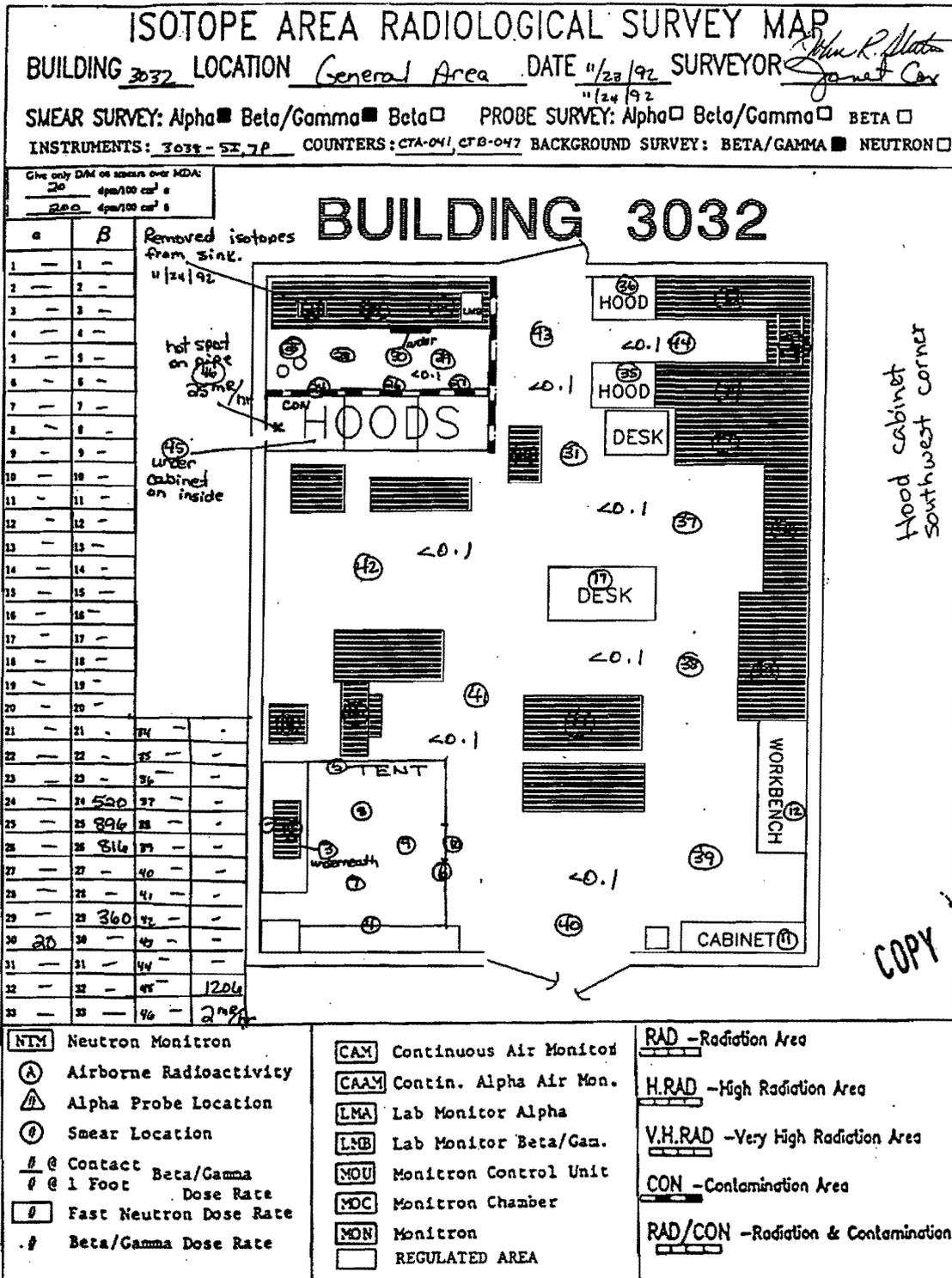
<p>NTM Neutron Monitor</p> <p>(A) Airborne Radioactivity</p> <p>(Δ) Alpha Probe Location</p> <p>(O) Smear Location</p> <p>@ Contact Beta/Gamma Dose Rate</p> <p>∇ 1 Foot Beta/Gamma Dose Rate</p> <p>⊖ Fast Neutron Dose Rate</p> <p># Beta/Gamma Dose Rate</p>	<p>CAM Continuous Air Monitor</p> <p>CAAM Contin. Alpha Air Mon.</p> <p>LMA Lab Monitor Alpha</p> <p>LMB Lab Monitor Beta/Gam.</p> <p>MCU Monitor Control Unit</p> <p>MOC Monitor Chamber</p> <p>MON Monitor</p> <p>REGULATED AREA</p>	<p>RAD -Radiation Area</p> <p>H.RAD -High Radiation Area</p> <p>V.H.RAD -Very High Radiation Area</p> <p>CON -Contamination Area</p> <p>RAD/CON -Radiation & Contamination</p>
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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: From _____ To _____		RESULTS REQUIRED: Date _____ Time _____		DATE COUNTED	COUNTER OPERATOR <i>JJ</i>
GIVE D/M ONLY ON SMEARS OVER: <u>20</u> d/m α <u>200</u> d/m β		REMARKS: <i>smears from inside of cabinet under southwest pool</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	220	924 FLOOR	34			67		
2		38,000 PIPE — PROBES			25 MP/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



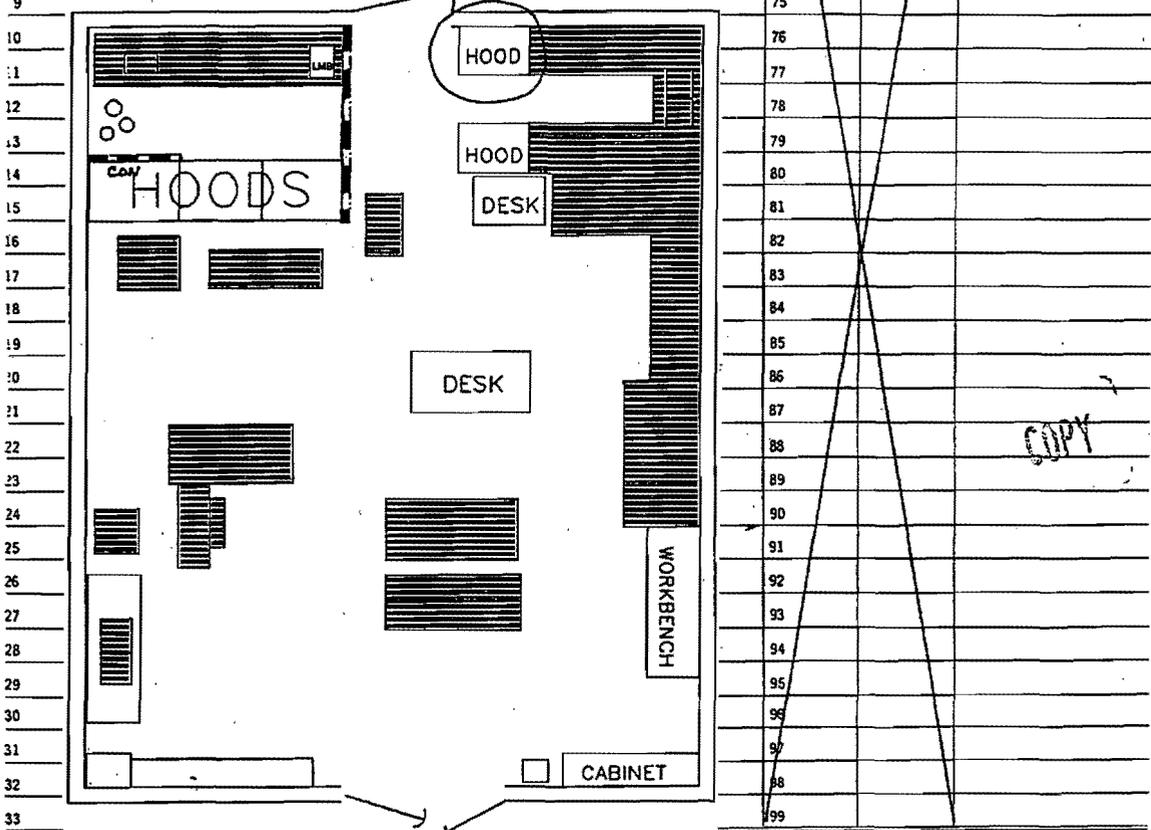
SMEAR SAMPLE DATA

John Slats

NAME (HP&S) <i>R. J. McElho</i>	PHONE <i>1-6704</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	Time	DATE COUNTED <i>8/26/92</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>	COUNTER OPERATOR: <i>R. J. McElho</i>		

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	216	9905	Back Wall	34		87		
2	28	1190	Bottom	35		68		
3	143	5670	L. Side	36	<i>* Max. plate reading</i>	69		
4	44	315	R. Side	37	<i>13,000 dpm/100cm²</i>	70		
5	97	483	Window (Corner)	38		71		
6				39		72		

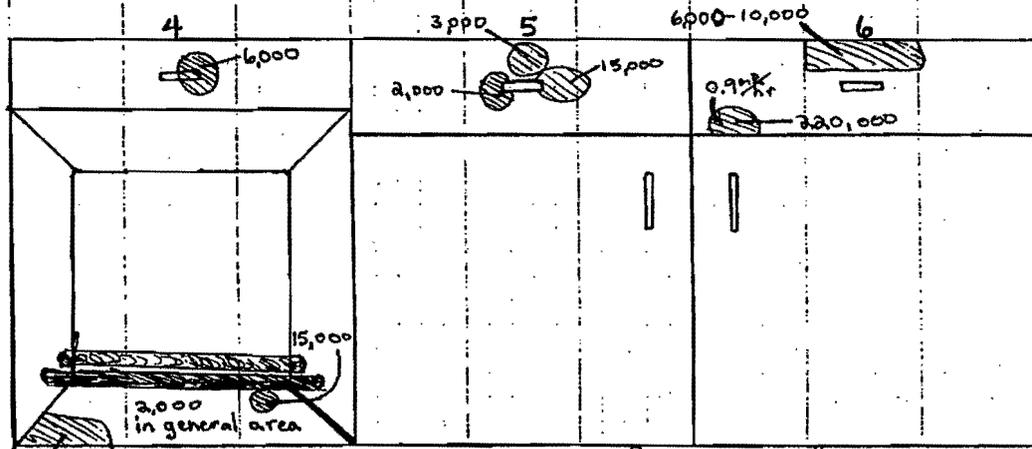
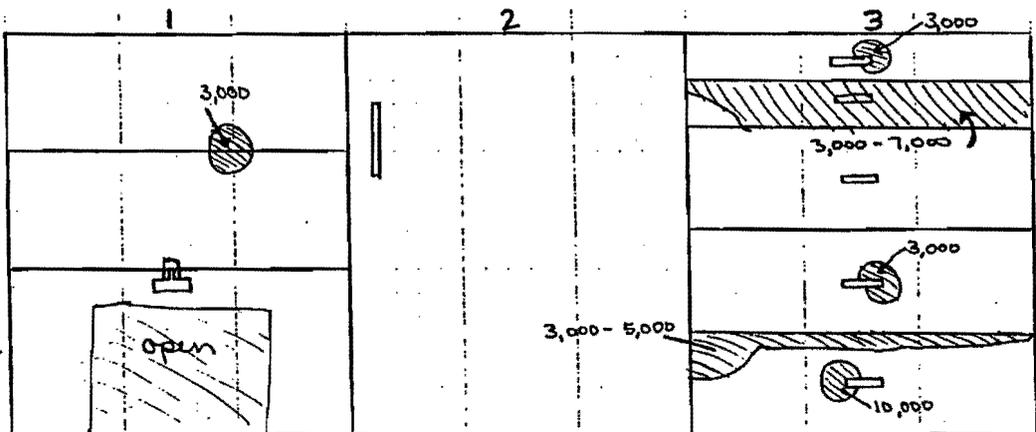
BUILDING 3032



COPY

all readings in dpm BY

3032 Cabinets on NW side
North side of NW corner
W



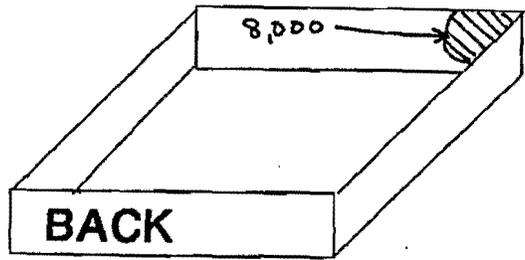
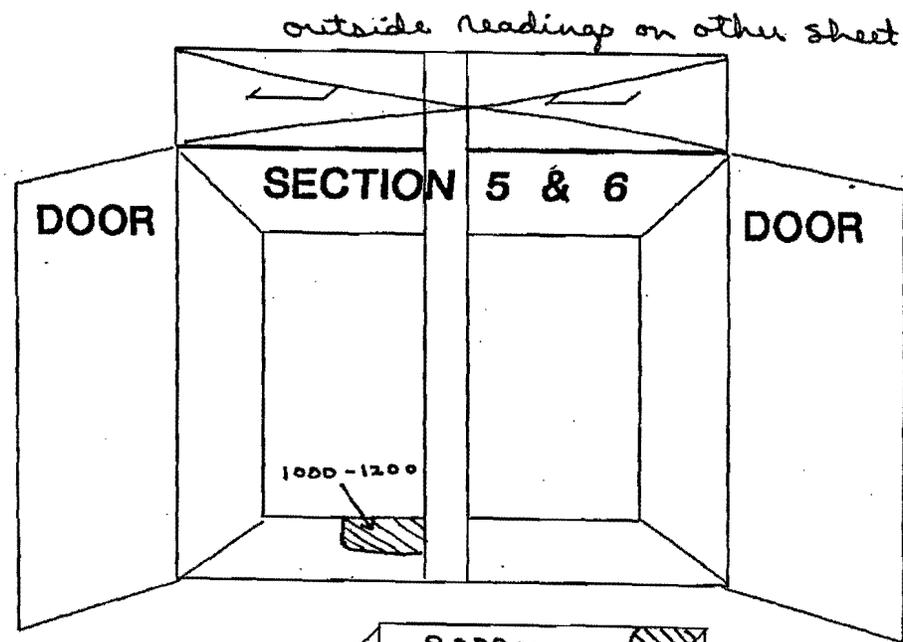
Initial characterization
survey by Janet Cox
3/5/93 3038-1P
Janet Cox #32721

3,000-16,000

Resurveyed by
Reborah Crossno

6-16-94
3038-3P

E



DRAWER FROM SECTION 5

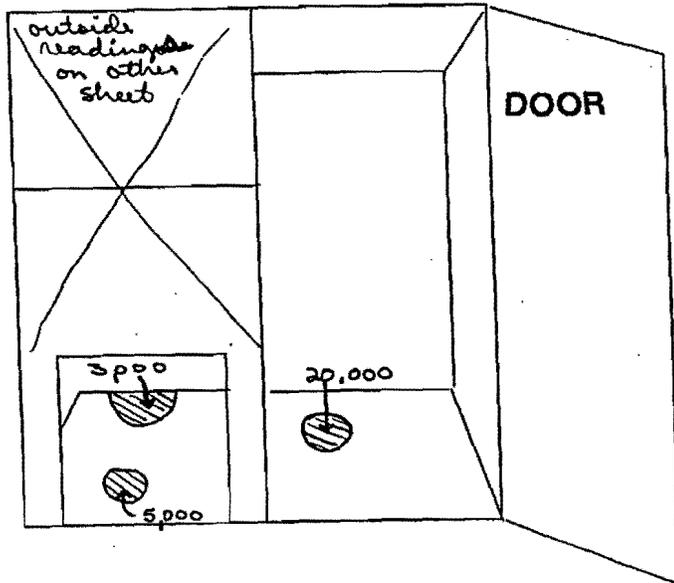
8-25

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

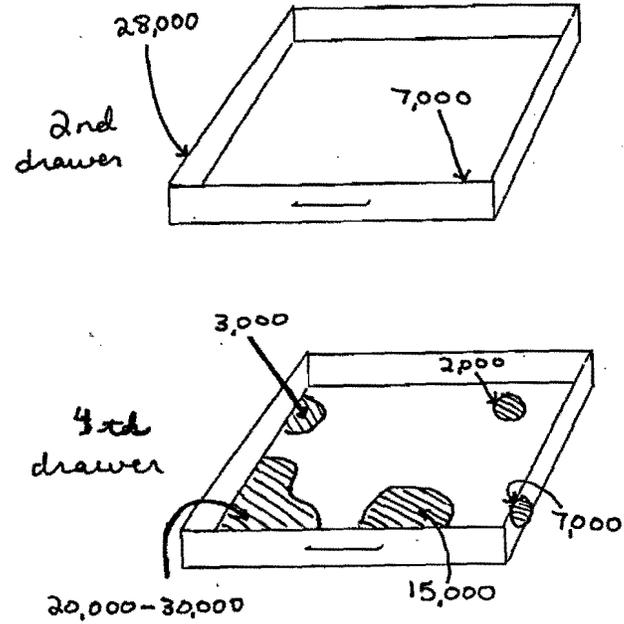
All readings in dpm Bx

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

SECTION 1 & 2



SECTION 3 DRAWERS
internal readings



8-26

All readings in dpm Bx

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

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

SMEAR SAMPLE DATA

NAME (HP&S) <i>Seborah Crosono</i>	PHONE <i>4-6704</i>	BLDG. NO. (HP&S) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>6-24-94</i>
YEARS NUMBERED: From <i>1</i> To <i>12</i>	RESULTS REQUIRED:	DATE COUNTE ^d <i>6-24-94</i>	(<i>1545</i>)	COUNTER OPERATOR <i>D. Crosono</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>			

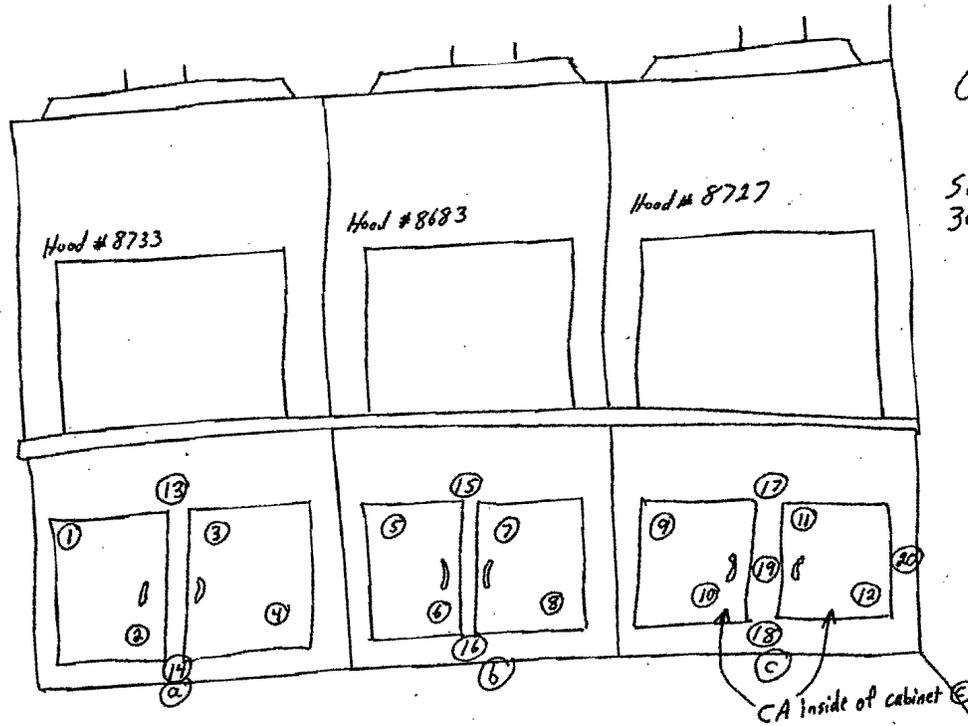
CTA-041, CTB-047

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
<20	<200	outside of section 1				67		
—	—	inside of ³⁵ sec. 1 + 2				68		
—	—	sec. 3, drawer 1 outside				69		
—	—	sec. 3, drawer 2 inside + outside				70		(0000)
43	973	sec. 3, drawer 4 inside				39	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		

(a) Give only if required.

Bldg 3032

Hoods /
Cabinets
on
South-West
wall.

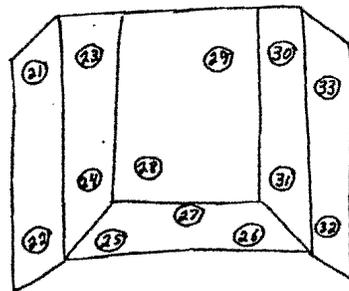


Column
34667
2-27-97
Survey #
3038-97-0179

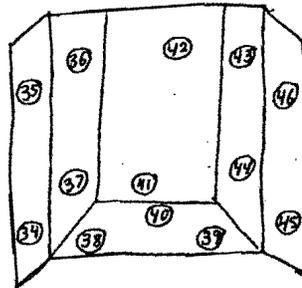
North-
West
Wall

8-29

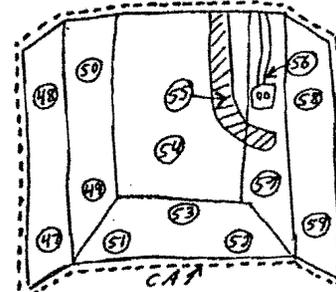
Inside of (a)



Inside of (b)



Inside of (c)



SMEAR SAMPLE DATA Survey # 3038-97-0179

NAME (PP&P) <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	Time	DATE COUNTED <i>2-27-97</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>	COUNTER OPERATOR <i>Coleman</i>		

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
1	<20	<200	See Map	34	<20	<200	See Map	
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	400			
19				52	1290			
20				53	6225			
21				54	2050			
22				55	75,000			
23				56	880			
24				57	4870			
25				58	350			
26				59	410			
27				60				
28				61				
29				62				
30				63				
31				64				
32				65				
33				66				

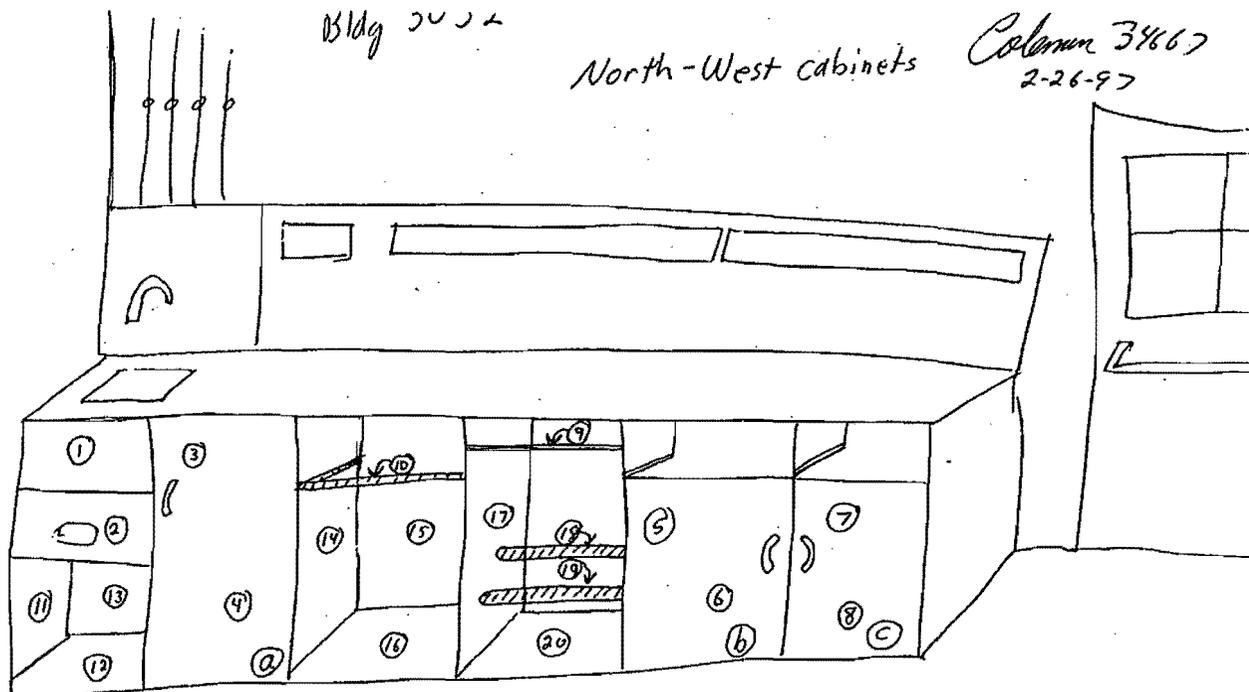
JCN-1632 (*) Give only if required.
3 7-671

Survey #
3038-97-0179

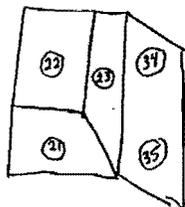
Bldg 2022

North-West cabinets

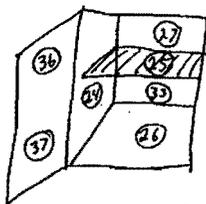
Column 34667
2-26-97



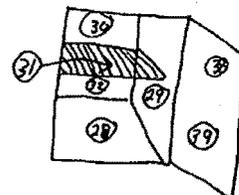
Inside of (a)



Inside of (b)



Inside of (c)



SMEAR SAMPLE DATA Survey # 3038-97-0179

NAME (if any) <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>
GIVE D/M ONLY ON SMEARS OVER: <i>80</i> d/m α <i>200</i> d/m β	REMARKS: <i>CTA-041 North-West Cabinets</i> <i>CTB-047</i>			

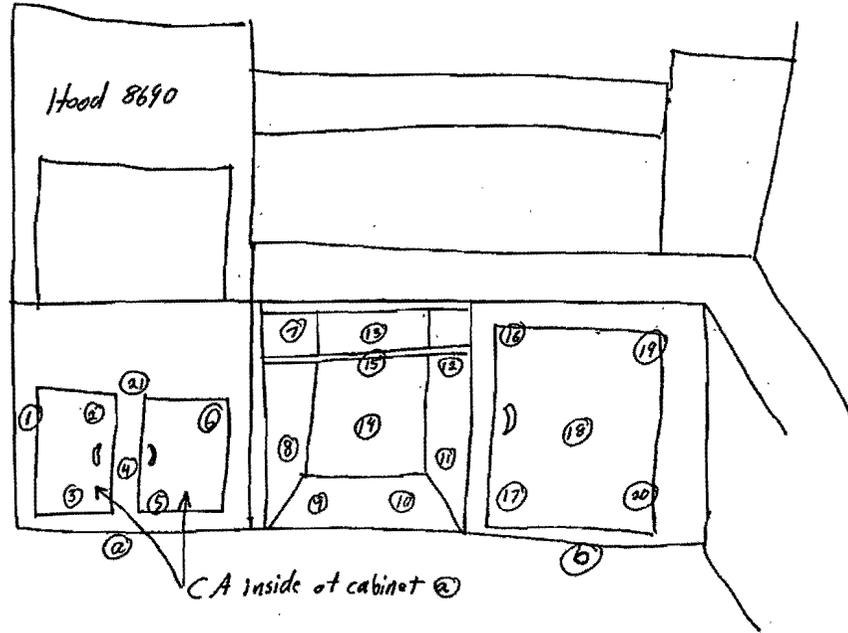
a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
1	<i><20</i>	<i><200</i>	<i>See Map</i>	34	<i><20</i>	<i><200</i>	<i>See Map</i>	67
2				35				68
3				36				69
4				37				70
5				38				71
6				39				72
7				40				73
8				41				74
9				42				75
10				43				76
11				44				77
12				45				78
13				46				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

North-East Cabinets & Hood

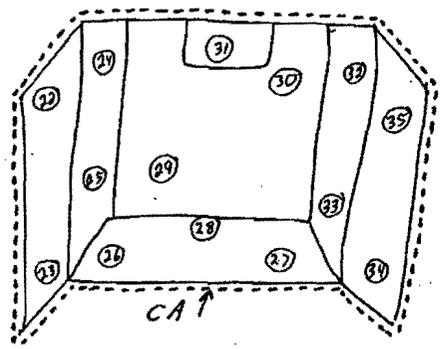
Bldg 5002

Survey #
3038-97-0179

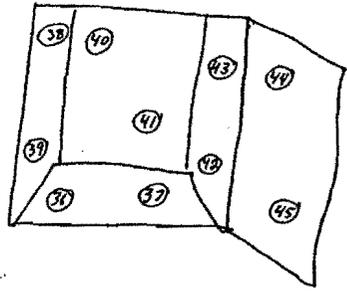
Coleman
34667
2-28-97



Inside (a)



Inside (b)



East Cabinets

Bldg 3032

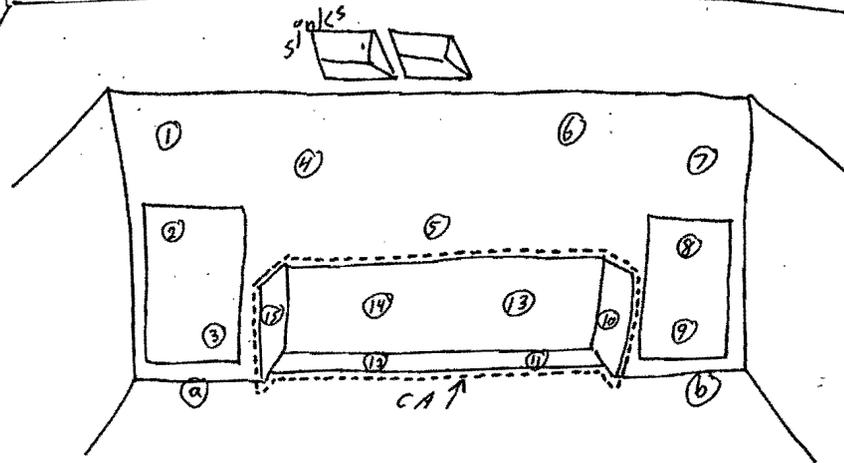
Coleman
34667

2-28-97

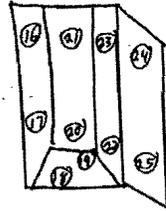
Survey #
3038-97-0179

North
Wall

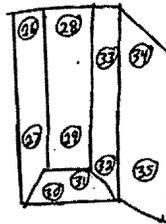
South
Wall



Inside (a)



Inside (b)



SMEAR SAMPLE DATA Survey # 3038-97-0179

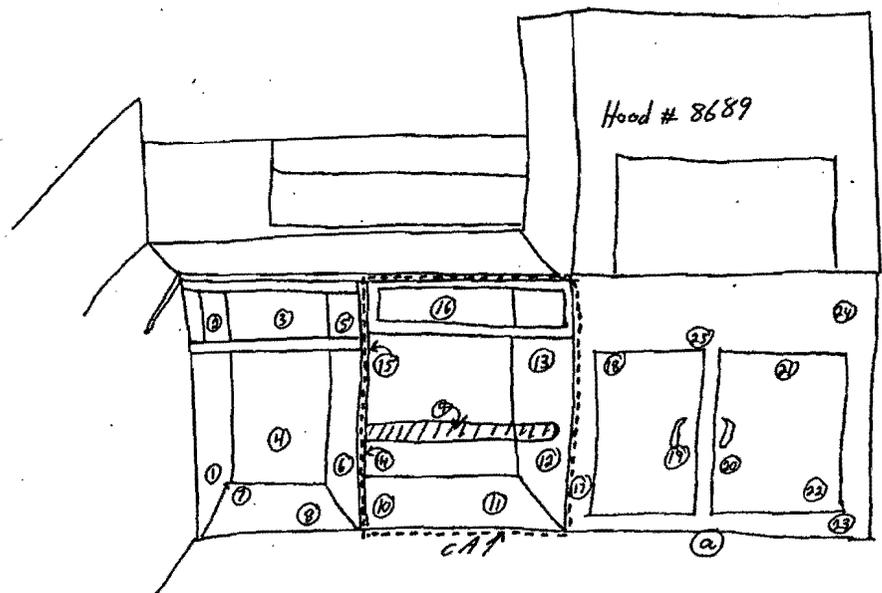
NAME (PPS)	PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN)	DATE
<i>Coleman</i>			3032	2-28-97
SMEARS NUMBERED:	RESULTS REQUIRED:	DATE COUNTED	COUNTER OPERATOR	
From 1 To 35	Date Time	2-28-97/3-4-97	<i>Coleman</i>	
GIVE D/M ONLY ON SMEARS OVER:	REMARKS:			
20 d/m α 200 d/m β	East Cabinets CTA-041, CTB-047			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	L20	L200	See Map.	34	L20	L200	See Map.	87
2			35					88
3			36					89
4			37					90
5			38					91
6			39					92
7			40					93
8			41					94
9			42					95
10			43					96
11			44					97
12			45					98
13			46					99
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					

UCN-1632 (*) Give only if required.
:3 7-67)

South-East Cabinets + Hood

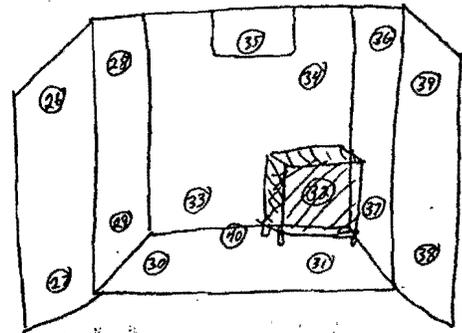
1109 JJK



Colman
34667
2-28-97

Survey #
3038-97-0179

Inside of 6



8-37

SMEAR SAMPLE DATA

Survey # 3038-97-0179

NAME (Ink) <i>Coleman</i>	PHONE	BLDG. NO. (HP&S) 3032	LOCATION (SMEARS TAKEN)	DATE 2-28-97
SMEARS NUMBERED: From 1 To 39	RESULTS REQUIRED:	Date	Time	DATE COUNTED 2-28-97 / 3-4-97
GIVE D/M ONLY ON SMEARS OVER: 20 d/m α 200 d/m β	REMARKS: South-East Cabinets CTA-041, CTB-047	COUNTER OPERATOR <i>Coleman</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
Surveyor Badge Number: <u>34667</u>	<input type="checkbox"/> Routine Survey	RWP Number: <u>3038-97-0015A</u>	
Building: <u>3032</u>	Specific Location: <u>BLDG INTERIOR EXCLUDING FIXED CONTAMINATION A</u>		
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: <u>CHEM TECH.</u>	Person-hours spent on the survey: <u>225</u>		
# of Pages: <u>21</u> Completed By: <u>T.D. Colman</u> Reviewed by: _____ Date: _____			

MARTIN MARIETTA ENERGY SYSTEMS, INC.		<input type="checkbox"/> GENERAL RWP <input checked="" type="checkbox"/> JOB-SPECIFIC RWP	RWP NUMBER 3038-97-0015 A <input checked="" type="checkbox"/> Contamination Area Entry <input type="checkbox"/> Radiation Area Entry																								
1. EFFECTIVE 4/15/97 8:00	2. EXPIRES 4/18/97 15:30	4. EXTENDED TO 4-25-97 <i>OK</i>																									
3. LOCATION OF WORK BLDG 3032.																											
6. DESCRIPTION OF WORK DECON AREAS / SPOTS OF FIXED AND TRANSFERABLE CONTAMINATION ON FLOORS, WALLS, PIPES, CEILING, AND ATTIC.																											
8. PRE-JOB CONDITIONS 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.		7. ANTICIPATED CONDITIONS DURING JOB POSSIBLE LOOSE CONTAMINATION DURING DECON PROCESS.																									
SEE SURVEY No:																											
8. REQUIRED DOSIMETER <input checked="" type="checkbox"/> TLD <input type="checkbox"/> Pocket Chamber <input type="checkbox"/> Other Dosimetry <input type="checkbox"/> Neutron <input type="checkbox"/> Extremity <input type="checkbox"/> Electronic <input type="checkbox"/> Multiple Dosimeters		9. REQUIRED RESPIRATORY PROTECTION <input type="checkbox"/> FullFace <input type="checkbox"/> PAPR <input type="checkbox"/> Supplied Air <input type="checkbox"/> SCBA TYPE OF CARTRIDGE <input type="checkbox"/> Particulate <input type="checkbox"/> GMHF-C <input type="checkbox"/> Other (specify)																									
10. TRAINING <input type="checkbox"/> RWI <input checked="" type="checkbox"/> RWII <input type="checkbox"/> Special RW Training <input type="checkbox"/> Respirator Fit Card Required																											
11. REQUIRED ANTI-C CLOTHING (NO. OF PAIRS INDICATED IN PARENTHESIS) <table style="width:100%; border:none;"> <tr> <td style="border:none;">COVERALLS:</td> <td style="border:none;">GLOVES:</td> <td style="border:none;">SHOE COVERS:</td> <td style="border:none;">Other:</td> </tr> <tr> <td style="border:none;"><input type="checkbox"/> Cloth no hood ()</td> <td style="border:none;"><input checked="" type="checkbox"/> Rubber (2)</td> <td style="border:none;"><input type="checkbox"/> Booties ()</td> <td style="border:none;"><input type="checkbox"/> Labcoat <input type="checkbox"/> Hood ()</td> </tr> <tr> <td style="border:none;"><input type="checkbox"/> Cloth with hood ()</td> <td style="border:none;"><input type="checkbox"/> Surgeon's ()</td> <td style="border:none;"><input type="checkbox"/> Rubber, low top ()</td> <td style="border:none;"><input type="checkbox"/> Raincoat</td> </tr> <tr> <td style="border:none;"><input type="checkbox"/> Splashproof ()</td> <td style="border:none;"><input type="checkbox"/> Work (specify)</td> <td style="border:none;"><input type="checkbox"/> Rubber, high top ()</td> <td style="border:none;"><input type="checkbox"/> Jacket</td> </tr> <tr> <td style="border:none;"><input checked="" type="checkbox"/> Disposable</td> <td></td> <td style="border:none;"><input checked="" type="checkbox"/> Disposable (1)</td> <td style="border:none;"><input type="checkbox"/> Hard Hat</td> </tr> </table>				COVERALLS:	GLOVES:	SHOE COVERS:	Other:	<input type="checkbox"/> Cloth no hood ()	<input checked="" type="checkbox"/> Rubber (2)	<input type="checkbox"/> Booties ()	<input type="checkbox"/> Labcoat <input type="checkbox"/> Hood ()	<input type="checkbox"/> Cloth with hood ()	<input type="checkbox"/> Surgeon's ()	<input type="checkbox"/> Rubber, low top ()	<input type="checkbox"/> Raincoat	<input type="checkbox"/> Splashproof ()	<input type="checkbox"/> Work (specify)	<input type="checkbox"/> Rubber, high top ()	<input type="checkbox"/> Jacket	<input checked="" type="checkbox"/> Disposable		<input checked="" type="checkbox"/> Disposable (1)	<input type="checkbox"/> Hard Hat				
COVERALLS:	GLOVES:	SHOE COVERS:	Other:																								
<input type="checkbox"/> Cloth no hood ()	<input checked="" type="checkbox"/> Rubber (2)	<input type="checkbox"/> Booties ()	<input type="checkbox"/> Labcoat <input type="checkbox"/> Hood ()																								
<input type="checkbox"/> Cloth with hood ()	<input type="checkbox"/> Surgeon's ()	<input type="checkbox"/> Rubber, low top ()	<input type="checkbox"/> Raincoat																								
<input type="checkbox"/> Splashproof ()	<input type="checkbox"/> Work (specify)	<input type="checkbox"/> Rubber, high top ()	<input type="checkbox"/> Jacket																								
<input checked="" type="checkbox"/> Disposable		<input checked="" type="checkbox"/> Disposable (1)	<input type="checkbox"/> 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? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes																											
14. RCO COVERAGE <input type="checkbox"/> Routine Survey Only <input type="checkbox"/> Initial <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Continuous <input type="checkbox"/> Post-Job																											
15. SPECIAL INSTRUCTIONS HP WILL DETERMINE FRISKING REQUIREMENTS BASED ON SPECIFIC TYPE OF DECON TAKING PLACE.																											
16. BIOASSAY REQUIREMENTS <input type="checkbox"/> None <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Special:																											
17. APPROVALS <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:30%;"></th> <th style="width:30%; text-align:center;">Signature</th> <th style="width:20%; text-align:center;">Badge</th> <th style="width:20%; text-align:center;">Date</th> </tr> </thead> <tbody> <tr> <td>Written/RCO</td> <td style="text-align:center;"><i>JH Coleman</i></td> <td style="text-align:center;">34667</td> <td style="text-align:center;">4-15-97</td> </tr> <tr> <td>Approved/RCO</td> <td style="text-align:center;"><i>JH Coleman</i></td> <td style="text-align:center;">34667</td> <td style="text-align:center;">4-15-97</td> </tr> <tr> <td>ALARA/RCO</td> <td style="text-align:center;"><i>N/A</i></td> <td style="text-align:center;">—</td> <td style="text-align:center;">—</td> </tr> <tr> <td>Work Group Supervisor</td> <td style="text-align:center;"><i>Jack Gaskin</i></td> <td style="text-align:center;">23449</td> <td style="text-align:center;">4-15-97</td> </tr> <tr> <td>RWP Terminated/ RCO</td> <td style="text-align:center;"><i>JH Coleman</i></td> <td style="text-align:center;">34667</td> <td style="text-align:center;">4-25-97</td> </tr> </tbody> </table>					Signature	Badge	Date	Written/RCO	<i>JH Coleman</i>	34667	4-15-97	Approved/RCO	<i>JH Coleman</i>	34667	4-15-97	ALARA/RCO	<i>N/A</i>	—	—	Work Group Supervisor	<i>Jack Gaskin</i>	23449	4-15-97	RWP Terminated/ RCO	<i>JH Coleman</i>	34667	4-25-97
	Signature	Badge	Date																								
Written/RCO	<i>JH Coleman</i>	34667	4-15-97																								
Approved/RCO	<i>JH Coleman</i>	34667	4-15-97																								
ALARA/RCO	<i>N/A</i>	—	—																								
Work Group Supervisor	<i>Jack Gaskin</i>	23449	4-15-97																								
RWP Terminated/ RCO	<i>JH Coleman</i>	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>10:45</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	Badge #	Time In	Time In	Time In	Time In
<i>S.R. Daskell</i>	12003	0728			
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
<i>A.R. Daskell</i>	3038-97-0015A	13:00			
Name	Badge #	Time In	Time In	Time In	Time In
<i>J.E. Moody</i>	33159	12:15			
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
<i>J.E. Moody</i>	3038-97-0015A	13:00			
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

Page 4

8-42

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	Badge #	Time In	Time Out	Time In	Time Out
Lawson L.R	24830	09:30	10:50		
<i>L.R. Lawson</i>	3038-97-0015A	11:50	13:30		
Deborah Crossin	6026079	12:20			
<i>Deborah Crossin</i>	3038-97-0015A	13:54			
S.R. Washell	12003 3038-97-0015A	08:15			
<i>S.R. Washell</i>	3038-97-0015A	14:30			
Name	Badge #	Time In	Time Out	Time In	Time Out
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time Out	Time In	Time Out
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time Out	Time In	Time Out
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time Out	Time In	Time Out
Signature	RWP#	Time Out	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time Out	Time In	Time Out
Signature	RWP#	Time Out	Time Out	Time Out	Time Out

Page 5

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

Page 6

RADIOLOGICAL WORK PERMIT SIGN-IN SHEET

DATE 4-12-97

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

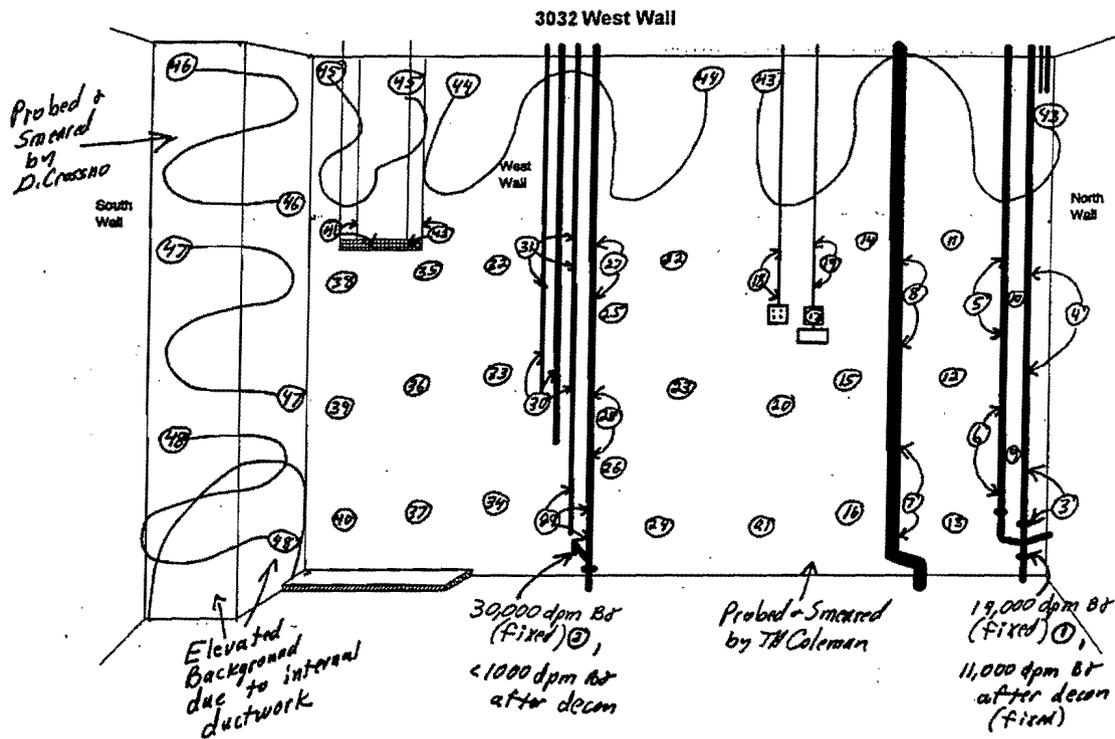
Name	Badge #	Time In	Time In	Time In	Time In
J.E. Moody	33159	7:45 AM			
<i>J.E. Moody</i>	RWP# 3038-97-0015A	Time Out 10:45 AM	Time Out	Time Out	Time Out
S.R. Paskell	12003	0745			
<i>S.R. Paskell</i>	RWP# 3038-97-0015A	Time Out 1435	Time Out	Time Out	Time Out
Name	Badge #	Time In	Time In	Time In	Time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

Page 7

8-45

ORNL Radiological Survey Data

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



Average background 150 - 250 cpm

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

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

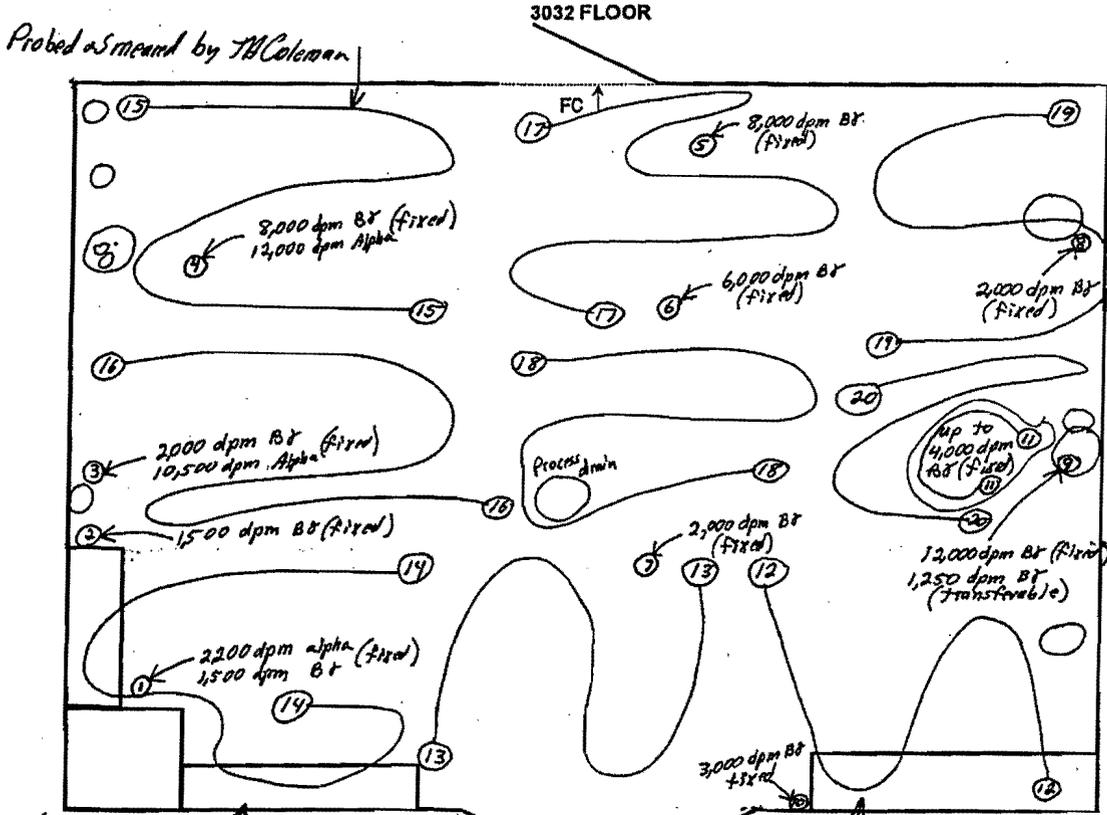
SMEAR SAMPLE DATA

NAME (HP&S) <i>Coleman / Crossno</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	Time	DATE COUNTED/ <i>4-7-97 / 4-10-97</i>
COUNTER OPERATOR <i>Coleman / Crossno</i>	REMARKS: <i>3038-11P 3038-04B</i> <i>CTB-047 CTA-041</i>			
GIVE D/M ONLY ON SMEARS OVER: <i>20</i> d/m α <i>200</i> d/m β				

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				<i>43</i>	<i>NO DASC NO G MT</i>	<i>See Map</i>		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: _____



*Probed by D. Crossno,
Smear by D. Crossno +
JH Coleman*

*Probed by JR Staten
Smear by JR Staten +
JH Coleman.*

*Resmear of #9 after decon was < 200 dpm.
All contamination deconned to < 1000 dpm Bx and < 100 dpm alpha.
Average Background 100-150 cpm Bx.*

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

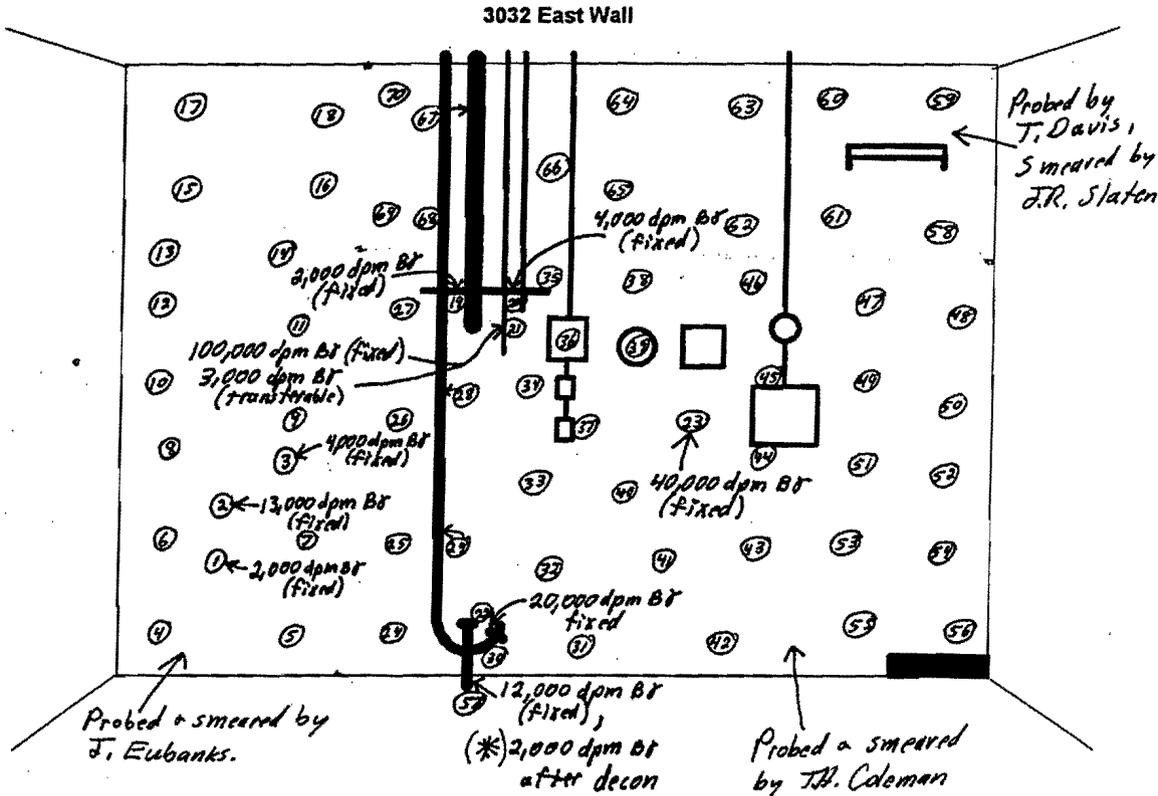
SMEAR SAMPLE DATA

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

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
1	<20	<200	See Map			87		
2						88		
3						89		
4						90		
5						91		
6						92		
7						93		
8						94		
9	*1,250					95		
10	<200					96		
11						97		
12	NDAS	NDGMT	See Map			98		
13						99		
14								
15								
16								
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33								

ORNL Radiological Survey Data

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



All contamination decontaminated to less than 1,000 dpm Bq except as noted by (*).
 Average Background 150-250 cpm Bq.

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

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

SMEAR SAMPLE DATA

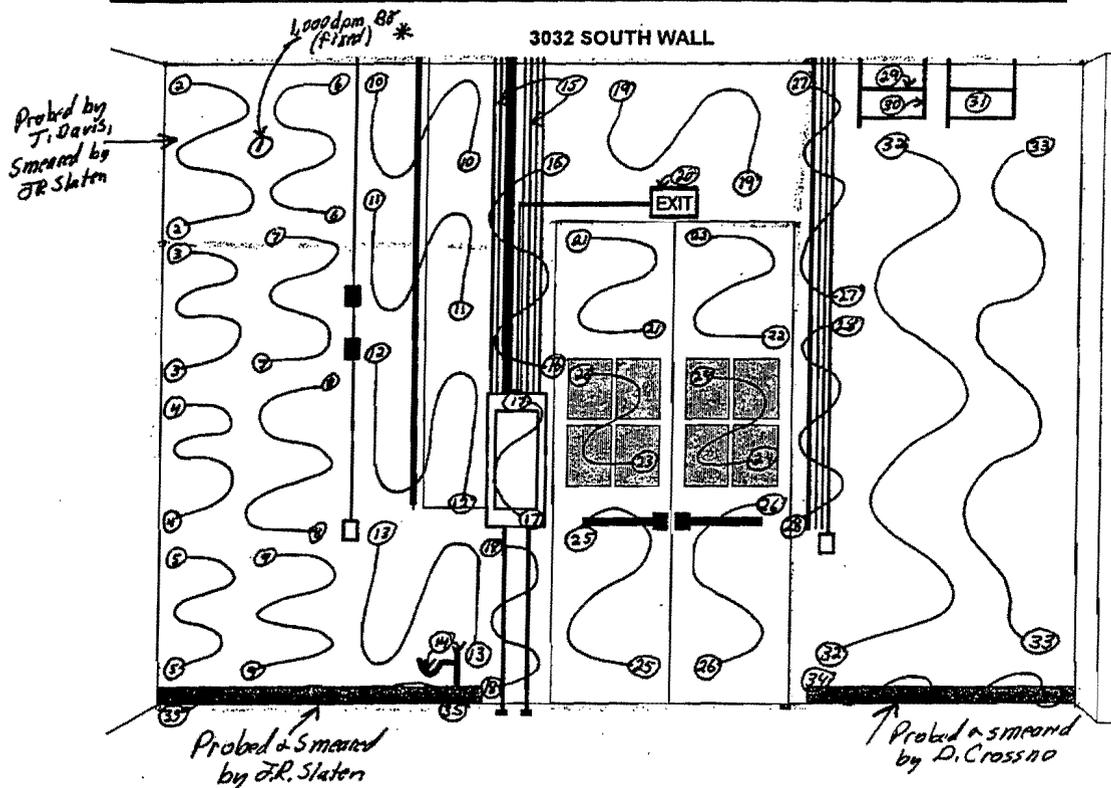
NAME (HP&S) <i>Colson/Eubanks/Slater</i>		PHONE	BLDG. NO. (HP&S)	LOCATION (SMEARS TAKEN) <i>3032 East Wall</i>	DATE <i>4-9-97 / 4-11-97</i>
SMEARS NUMBERED: From <i>1</i> To <i>70</i>		RESULTS REQUIRED:		DATE COUNTED <i>4-9-97 / 4-11-97</i>	COUNTER OPERATOR <i>Colson/Eubanks/Slater</i>
GIVE D/M ONLY 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>			

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)			
1	<20	<200	See Map	34	<20	<200	See Map	58	NDASC	NOGMT	See Map.
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	NDASC	NOGMT	See Map	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			

UCN-1632 (*) Give only if required.
13 7-671

ORNL Radiological Survey Data

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



* Deconned to <1000 dpm BS.
Average background 250-300 cpm BS.

Legend		Boundary Designations	
⊙	- Smear Location	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		
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	BLOG. 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	Time	DATE COUNTED <i>4-10-97 / 4-11-97</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>CTA-041 CTB-047</i>		
COUNTER OPERATOR <i>Crossno / Slaten</i>				

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
<i>1</i>	<i><20</i>	<i><200</i>	<i>See Map</i>	<i>3NDASC</i>	<i>NDGMT</i>	<i>See Map</i>		
			<i>3NDASC</i>	<i>NDGMT</i>	<i>See Map</i>			
<i>3</i>								
<i>4</i>								
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<i>30</i>								
<i>31</i>								
<i>32</i>								
<i>33</i>								

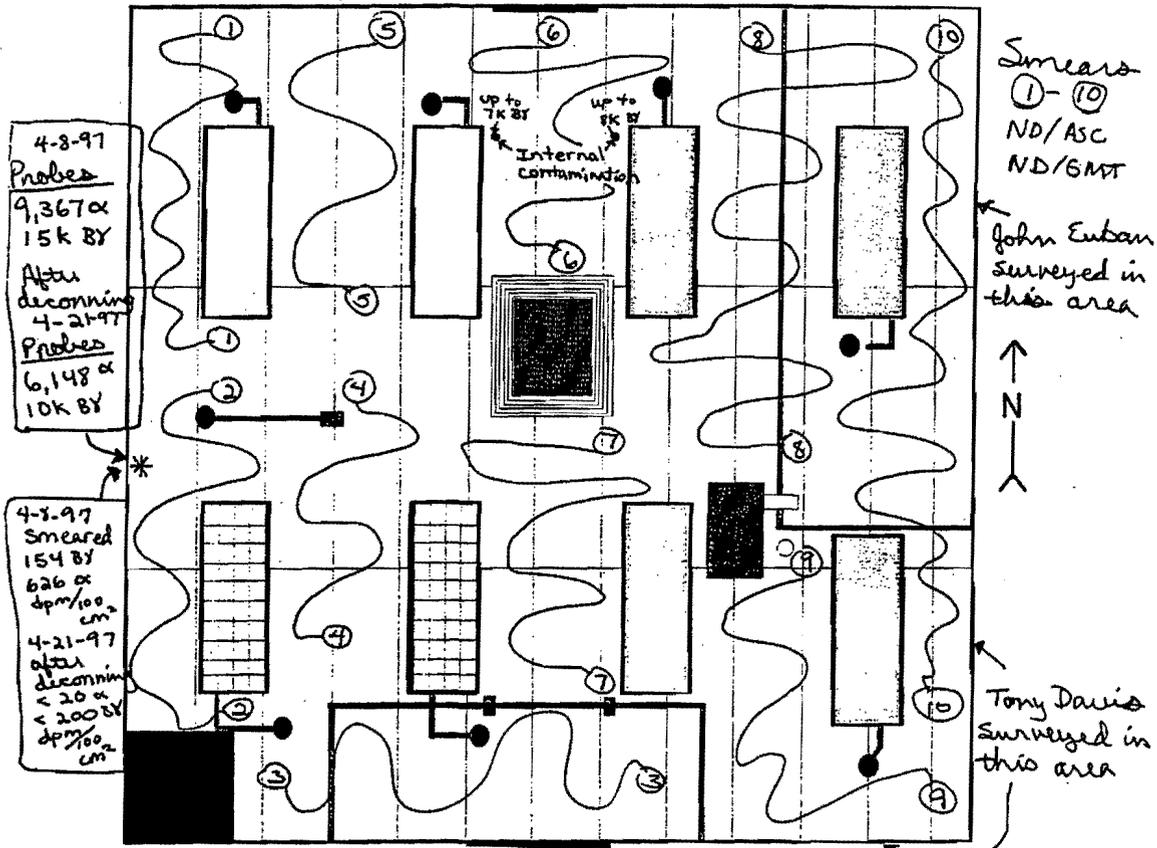
Levrouh Crossroads
626079

ORNL Radiological Survey Data

Survey Number: 3038 Field Office Date: 4-8-97 Time: 1200
thru 4-21-97 3038-7P+7B
 CTA-041 CTR-047

3032 CEILING

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



4-8-97
Probes
9,367 α
15k Bq
Alpha
decontamin
4-21-97
Probes
6,148 α
10k Bq

4-8-97
Smear
154 Bq
626 α
 $\text{dpm}/100 \text{ cm}^2$
4-21-97
alpha
decontamin
< 20 α
< 200 Bq
 $\text{dpm}/100 \text{ cm}^2$

Smears
①-⑩
ND/ASC
ND/GMT
John Euban
surveyed in
this area

Tony Davis
surveyed in
this area

①	- 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 $\text{dpm}/100 \text{ cm}^2$ Bq and 100 $\text{dpm}/100 \text{ cm}^2$ α unless
 otherwise noted. Page: 16

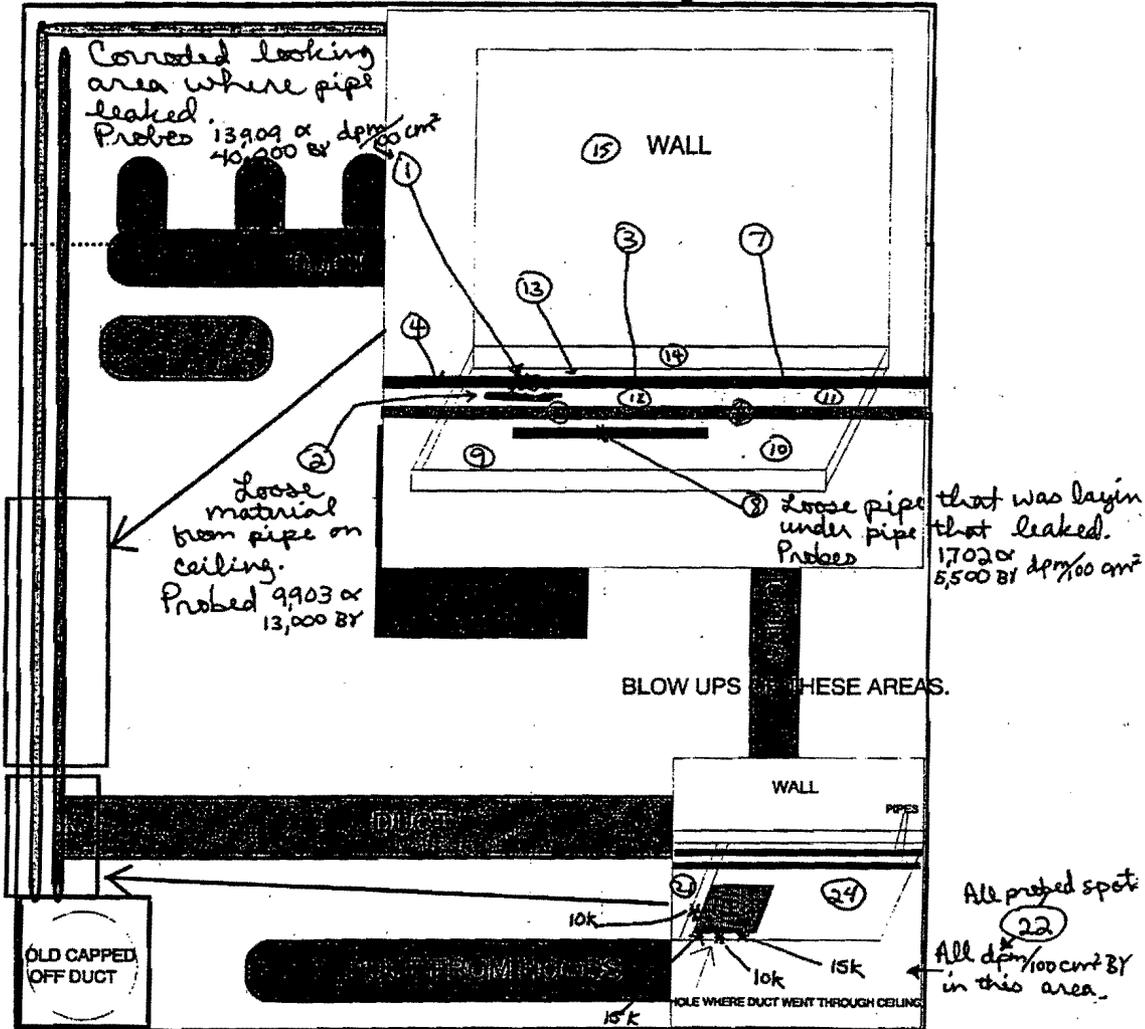
ORNL Radiological Survey Data

Survey Number: _____

3038 Field Office

Date: 4-10-97 Time: 0900

3032 ATTIC WITH INSERTS

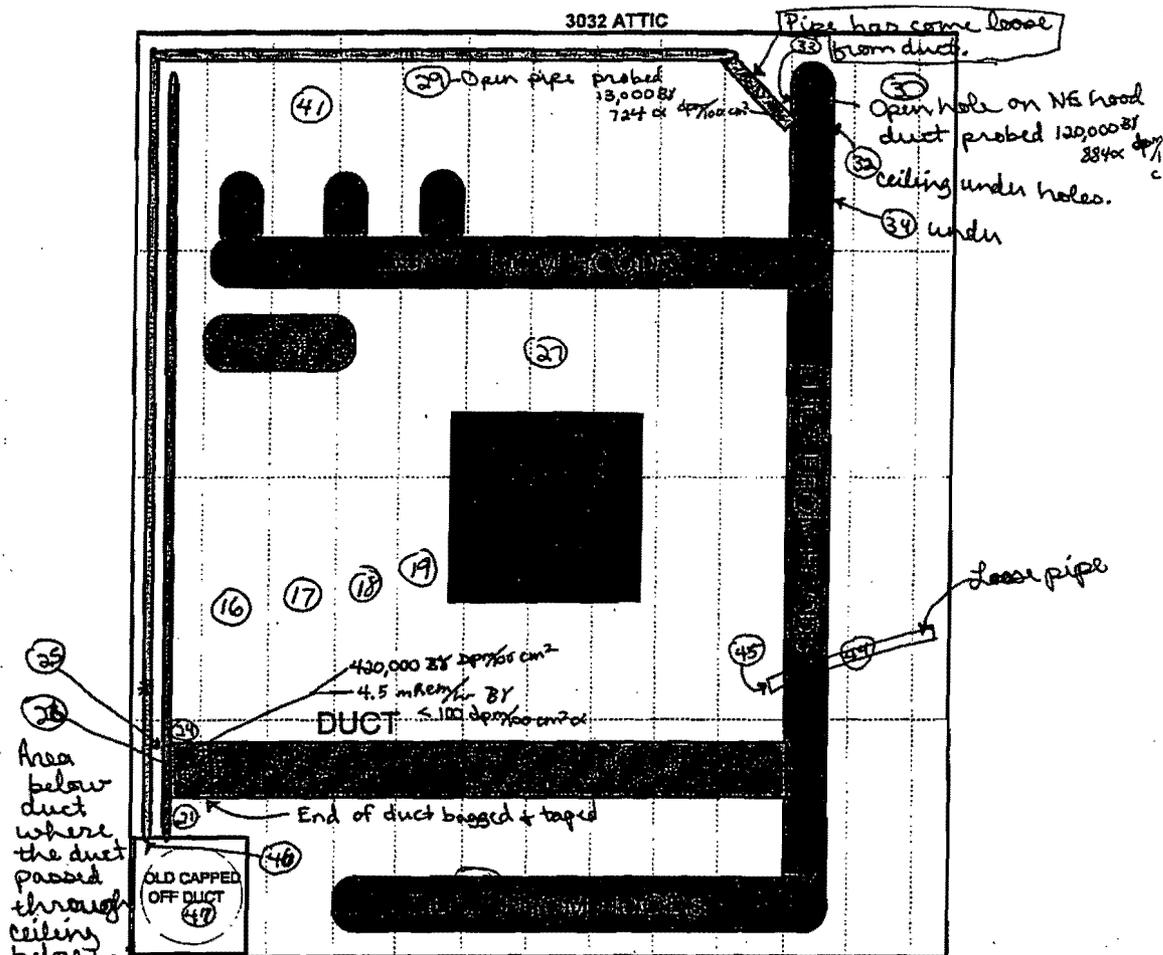


		Boundary Designations	
Ⓢ	- Smear Location	RA - Radiation Area	BA - Radiological Buffer Area
Ⓢ-Ⓢ	- Large Area Smear	HR - High Radiation Area	CA - Contamination Area
#	- Contact Dose Rate	VR - Very High Radiation Area	HC - High Contamination Area
#	- 30 cm Dose Rate	AR - Airborne Radioactivity Area	FC - 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.

ORNL Radiological Survey Data

Survey Number: _____ 3038 Field Office Date: 4-10-97 Time: 0900



①	- Smear Location	Boundary Designations	
①-②	- 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
[SDP]	- 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>Dorah 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 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 CTA-041 CTB-047 3038-78+JP+</i>					

a	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)
<i>2626</i>	<i>707</i>	<i>See</i>	34	—	<i>See</i>	67		
<i>21574</i>	<i>490</i>	<i>maps</i>	35	—	<i>maps</i>	68		
<i>3122</i>	—		36	—		69		
<i>4</i>	—		37	—		70		
<i>5 24</i>	—		38	—		71		
<i>6 24</i>	—		39	—		72		
<i>7 22</i>	—		40	—		73		
<i>8 857</i>	—		41	—		74		
<i>9</i>	—		42	—		75		
<i>10 29</i>	—		43	—		76		
<i>11 31</i>	—		44	—		77		
<i>12</i>	—		45	—		78		
<i>13</i>	—		46	—		79		
<i>14</i>	—		47	—		80		
<i>15</i>	—		48	—		81		
<i>16</i>	—		49	—		82		
<i>17</i>	—		50	—		83		
<i>18</i>	—		51	—		84		
<i>19</i>	—		52	—		85		
<i>20</i>	—		53	—		86		
<i>21</i>	—		54	—		87		
<i>22</i>	—		55	—		88		
<i>23</i>	—		56	—		89		
<i>24</i>	—		57	—		90		
<i>25</i>	—		58	—		91		
<i>26</i>	—		59	—		92		
<i>27</i>	—		60	—		93		
<i>28</i>	—		61	—		94		
<i>29 77</i>	—		62	—		95		
<i>30 53</i>	—		63	—		96		
<i>31</i>	—		64	—		97		
<i>32 190</i>	—		65	—		98		
<i>33</i>	—		66	—		99		

Deborah Crossno
626079

ORNL Radiological Survey Data

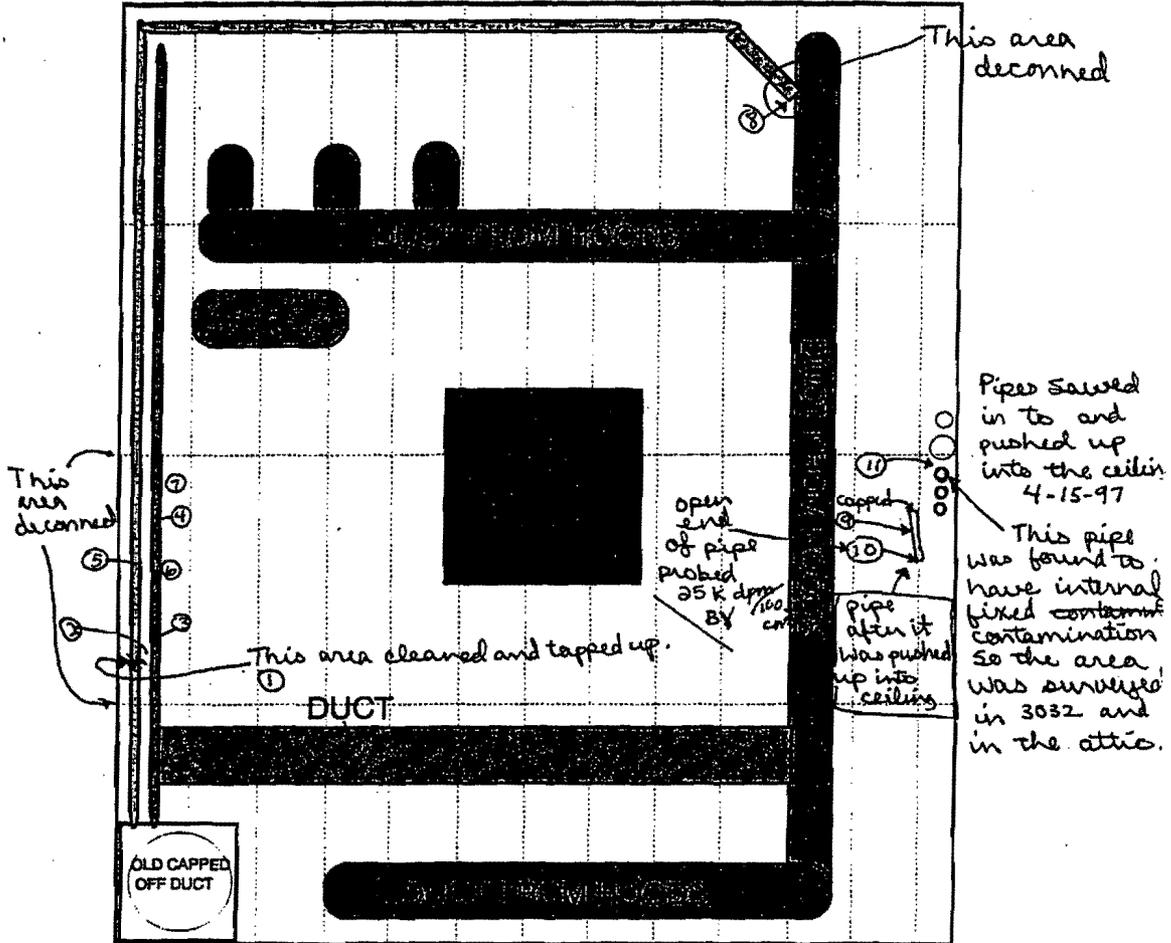
Survey Number:

3038 Field Office

Date: 4-16-97 Time: 12:30

3038-7P+7B CTA-041
CTB-047

3032 ATTIC



		Boundary Designations	
Ⓢ	- Smear Location	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	- Stop-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 (HPAS) <i>Deborah Crossno</i>	PHONE <i>4-6704</i>	BLDG. NO. (HPAS) <i>3038</i>	LOCATION (SMEARS TAKEN) <i>3032</i>	DATE <i>1900 / 1230</i> <i>4-15-97 / 4-16-97</i>
SMEARS NUMBERED: From _____ To _____	RESULTS REQUIRED: Date _____ Time _____		DATE COUNTED <i>4-15 + 16-97</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 in area below pipes that were cut in 3032 and one was found to have internal fixed contamination. Survey of attic area after decapping and pipe cutting.</i>			

α	β	LOCATION (*)	α	β	LOCATION (*)	α	β	LOCATION (*)
1	—	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	—		42			75		
10	—		43			76		
11	—		44			77		
12	—	Brace holding pipes on east wall				78		
13	—	Big pipe coming out of floor				79		
14	—	Floor	47			80		
15	—	Ladder	48			81		
16	—	Electric panel				82		
17	—	Large insulated pipe beside pipes that were cut				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:

Surveyor Badge Number: 34667

 Routine Survey

RWP Number: 3038-97-0008A

Building: 3032

Specific Location:

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

of Pages: 22

Completed By: *J. Coleman*Reviewed by: *John Slates*

Date: 5-15-97

MARTIN MARIETTA ENERGY SYSTEMS, INC.		<input type="checkbox"/> GENERAL RWP <input checked="" type="checkbox"/> JOB-SPECIFIC RWP	RWP NUMBER 3038-97-0008 A <input checked="" type="checkbox"/> Contamination Area Entry <input type="checkbox"/> 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 <input checked="" type="checkbox"/> TLD <input type="checkbox"/> Neutron <input type="checkbox"/> Electronic <input type="checkbox"/> Pocket Chamber <input type="checkbox"/> Extremity <input type="checkbox"/> Multiple Dosimeters Other Dosimetry		9. REQUIRED RESPIRATORY PROTECTION <input type="checkbox"/> FullFace <input type="checkbox"/> PAPR <input type="checkbox"/> Supplied Air <input type="checkbox"/> SCBA TYPE OF CARTRIDGE <input type="checkbox"/> Particulate <input type="checkbox"/> GMHF-C <input type="checkbox"/> Other (specify)	
10. TRAINING <input type="checkbox"/> RWI <input checked="" type="checkbox"/> RWII <input type="checkbox"/> Special RW Training		<input type="checkbox"/> Respirator Fit Card Required	
11. REQUIRED ANTI-C CLOTHING (NO. OF PAIRS INDICATED IN PARENTHESIS) COVERALLS: <input type="checkbox"/> Cloth no hood () <input type="checkbox"/> Cloth with hood () <input type="checkbox"/> Splashproof () <input checked="" type="checkbox"/> Disposable GLOVES: <input checked="" type="checkbox"/> Rubber (2) <input type="checkbox"/> Surgeon's () <input type="checkbox"/> Work (specify) SHOE COVERS: <input type="checkbox"/> Booties () <input type="checkbox"/> Rubber, low top () <input type="checkbox"/> Rubber, high top () <input checked="" type="checkbox"/> Disposable (1) Other: <input type="checkbox"/> Labcoat <input type="checkbox"/> Raincoat <input type="checkbox"/> Jacket <input type="checkbox"/> Hard Hat <input type="checkbox"/> Hood () <input type="checkbox"/> Skull Cap			
12. SPECIAL ANTI-C CLOTHING INSTRUCTIONS: TAPE INNER GLOVES TO DISPOSABLE COVERALLS (TYVEK).			
13. PRE-JOB BRIEFING REQUIRED? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes			
14. RCO COVERAGE <input type="checkbox"/> Routine Survey Only <input type="checkbox"/> Initial <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Continuous <input type="checkbox"/> Post-Job			
15. SPECIAL INSTRUCTIONS WHOLE BODY FRISK FOR ALPHA & BETA-GAMMA CONTAMINATION REQUIRED UPON EXIT FROM WORK AREA			
16. BIOASSAY REQUIREMENTS <input type="checkbox"/> None <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Special:			
17. APPROVALS	Signature	Badge	Date
Written/RCO	<i>T.A. Colman</i>	34667	1-28-97
Approved/RCO	<i>T.A. Colman</i>	34667	1-28-97
ALAR/RCO	<i>NA</i>	<i>NA</i>	<i>NA</i>
Work Group Supervisor	<i>J. M. ...</i>	13770	1-28-97
RWP Terminated/ RCO	<i>T.A. 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 <i>W W Bolinger</i>	Badge # <i>24989</i>	Time In <i>13:20</i>	Time In	Time In	Time In
Signature <i>W. W. Bolinger</i>	RWP# <i>3038-97-0008A</i>	Time Out <i>14:20</i>	Time Out	Time Out	Time Out
Name <i>L R LAWSON</i>	Badge # <i>24830</i>	Time In <i>13:20</i>	Time In	Time In	Time In
Signature <i>L.R. Lawson</i>	RWP# <i>3038-97-0008A</i>	Time Out <i>14:20</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

8-62

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 W. W. Bolinger	BADGE NUMBER 24989	TIME IN 0745	TIME IN	TIME IN	TIME IN
SIGNATURE W. W. Bolinger	RWP NUMBER 3038-97-0008A	TIME OUT 09:30	TIME OUT	TIME OUT	TIME OUT
NAME T. M. McNeal	BADGE NUMBER 24827	TIME IN 07:45	TIME IN 12:45	TIME IN	TIME IN
SIGNATURE T. M. McNeal	RWP NUMBER 3038-97-0008A	TIME OUT 09:30	TIME OUT 13:35	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>JAColeman</i>	BADGE NUMBER 34667	TIME IN 10:20	TIME IN 13:30	TIME IN	TIME IN
SIGNATURE <i>JAColeman</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

8-67

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>TA Coleman</i>	BADGE NUMBER <i>34667</i>	TIME IN <i>10:15</i>	TIME IN	TIME IN	TIME IN
SIGNATURE <i>TA 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

SMEAR SAMPLE DATA

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

1-28-97	α	β	LOCATION (*)	a	β	LOCATION (*)	a	β	LOCATION (*)		
1	<20	<200	Chair; Seat	34	220	2200	Non-compactable waste	67	<20	<200	Compactable Waste
2			Back	35				68			
3			base	36				69			
4			stem	37				70			
5			wheels	38				71			
6	NDASL	NDGMT	Large area	39				72			
7			massings of	40				73			
8			work floor area	41				74			
9			+ egress area	42				75			
10	↓	↓	↓	43				76	↓	↓	↓
11				44				77	NDASL	NDGMT	Work area; egress area floor
12	1-29-97			45				78			
13	NDASL	NDGMT	Work area; egress area floor	46				79			
14				47				80	↓	↓	↓
15				48				81	1-31-97 61220	2200	Compactable Waste
16				49				82			
17				50				83			
18				51				84			
19				52				85			
20	↓	↓	↓	53				86			
21	1-30-97		Non-compactable Waste	54				87			
22				55				88			
23	<20	<200		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			

UCN-1632 (*) Give only if required.
3 7-67)

SMEAR SAMPLE DATA

NAME (HP&S) <i>Collins</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>Collins</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		

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

ORNL Radiological Survey Data

Survey Number: 3038-97-0238

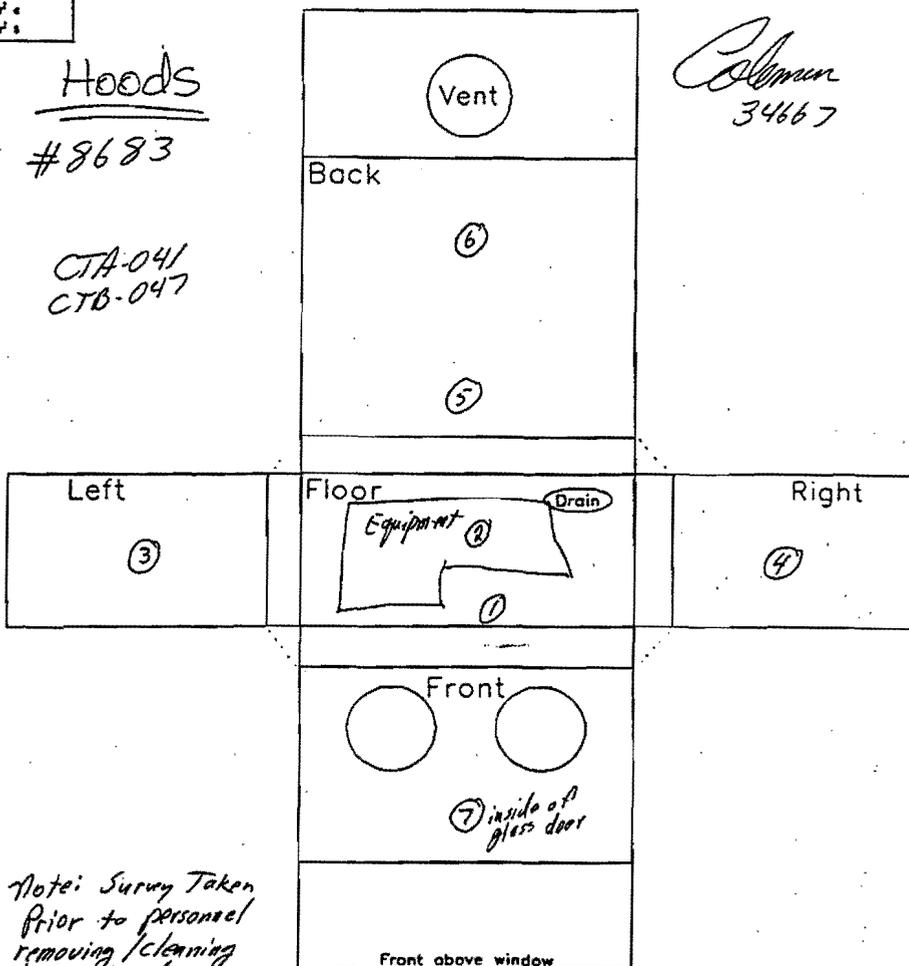
3038 Field Office

Date: 1-29-87 Time: 10:30

Give only DIM on squares over	
a	B
1	20
2	2
3	3
4	100
5	200
6	450
7	200
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
#8683
CTA-041
CTB-047

Colman
34667



Note: Survey Taken prior to personnel removing/cleaning ikras & hood.

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

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

ORNL Radiological Survey Data

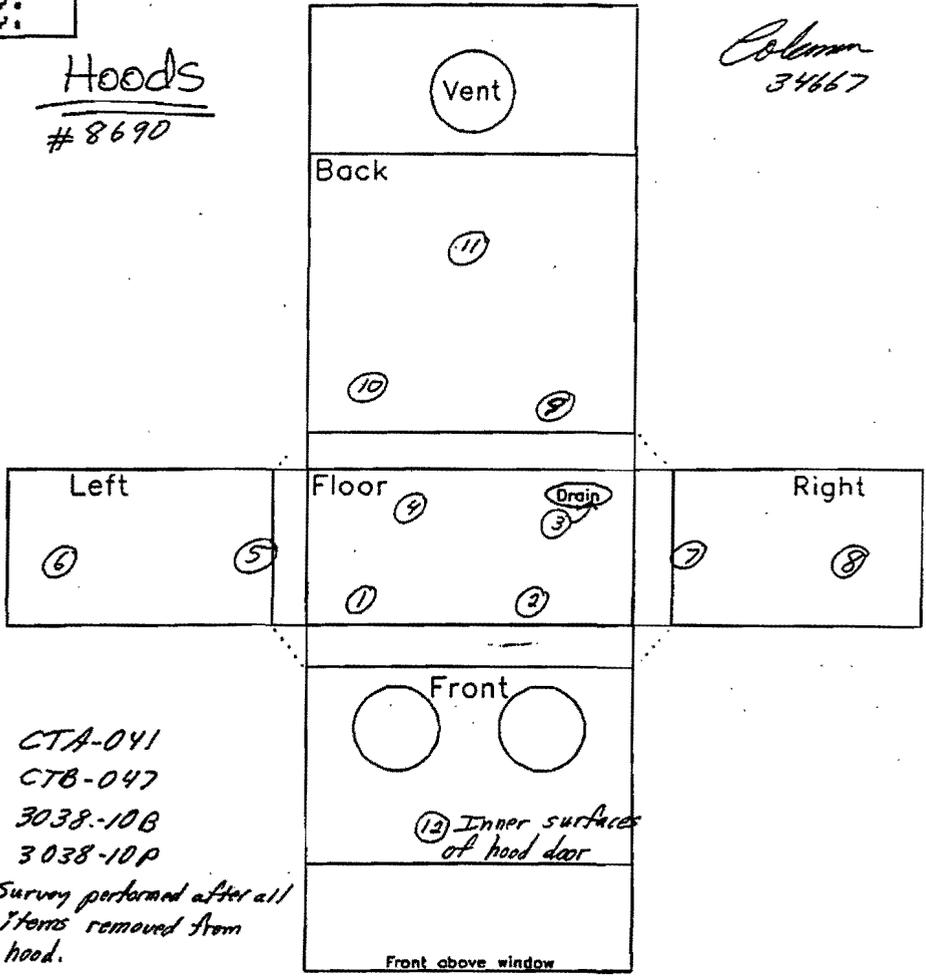
Survey Number: 3038-97-0238 3038 Field Office Date: 2-6-92 Time: 10:30

Give only DMR on meters over
 $\frac{20}{200}$ dpm/100 cm² &
 $\frac{200}{200}$ dpm/100 cm² &

A	B
1	20
2	200
3	300
4	<300
5	240
6	110,000
7	<20
8	<200
9	1000
10	450
11	2100
12	4300
13	1000
14	1500
15	15
16	14
17	15
18	16
19	17
20	18
21	19
22	20
23	21
24	22
25	23
26	24
27	25
28	26
29	27
30	28
31	29
32	30
33	31
34	32
35	33

Hoods
 # 8690

Column
 34667



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

Smear Location		Boundary Designations	
(A) - (B)	- 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

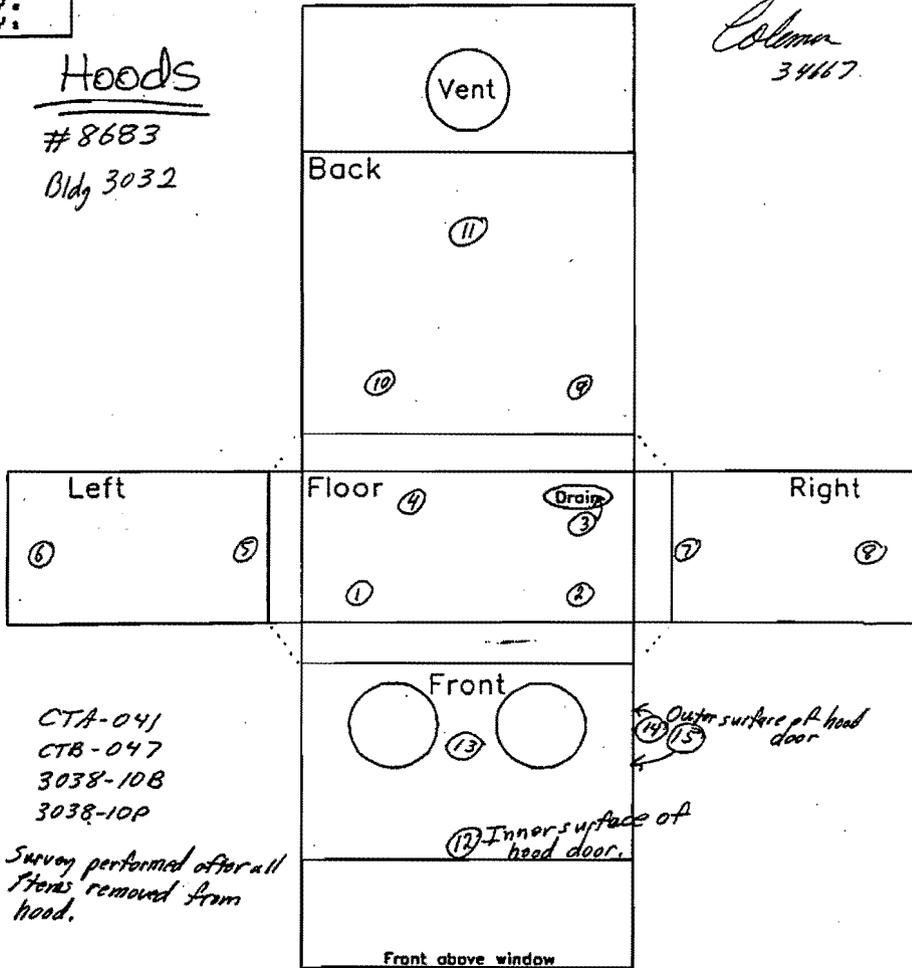
Date: 2-6-97 Time: 10:30

Give any DRA on smears over
 $\frac{20}{200}$ dpm/100 cm² e
 $\frac{200}{200}$ dpm/100 cm² s

A	B
1 <20	1 <200
2	2 ↓
3	3 1560
4	4 <200
5	5
6	6
7	7
8	8 ↓
9	9 1255
10	10 250
11	11 <200
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
 Bldg 3032

Colman
 3467



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

(S)	- Smear Location	Boundary Designations	
(L)	- 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

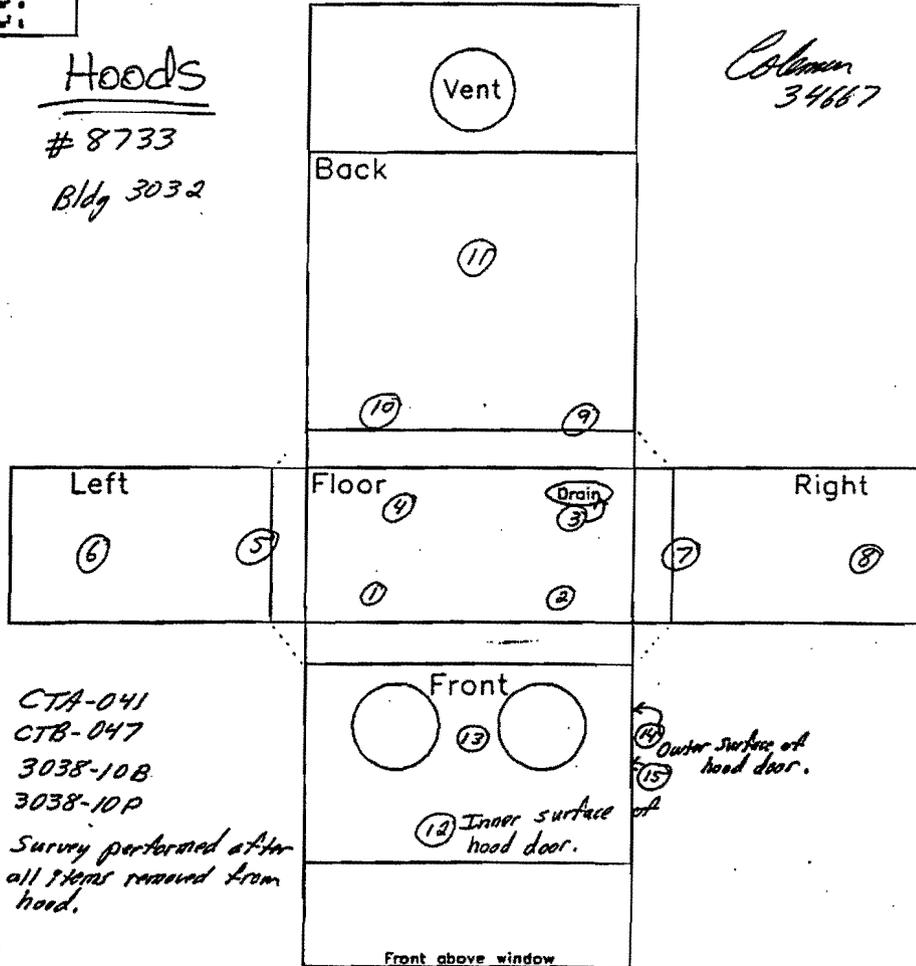
3038 Field Office

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

Give only Dose in square over	
•	B
1	<20
2	<200
3	
4	
5	275
6	<200
7	400
8	970
9	1865
10	2760
11	<200
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	

Hoods
8733
Bldg 3032

Colman
34667



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

		Boundary Designations	
⊙	- Smear Location	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		
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

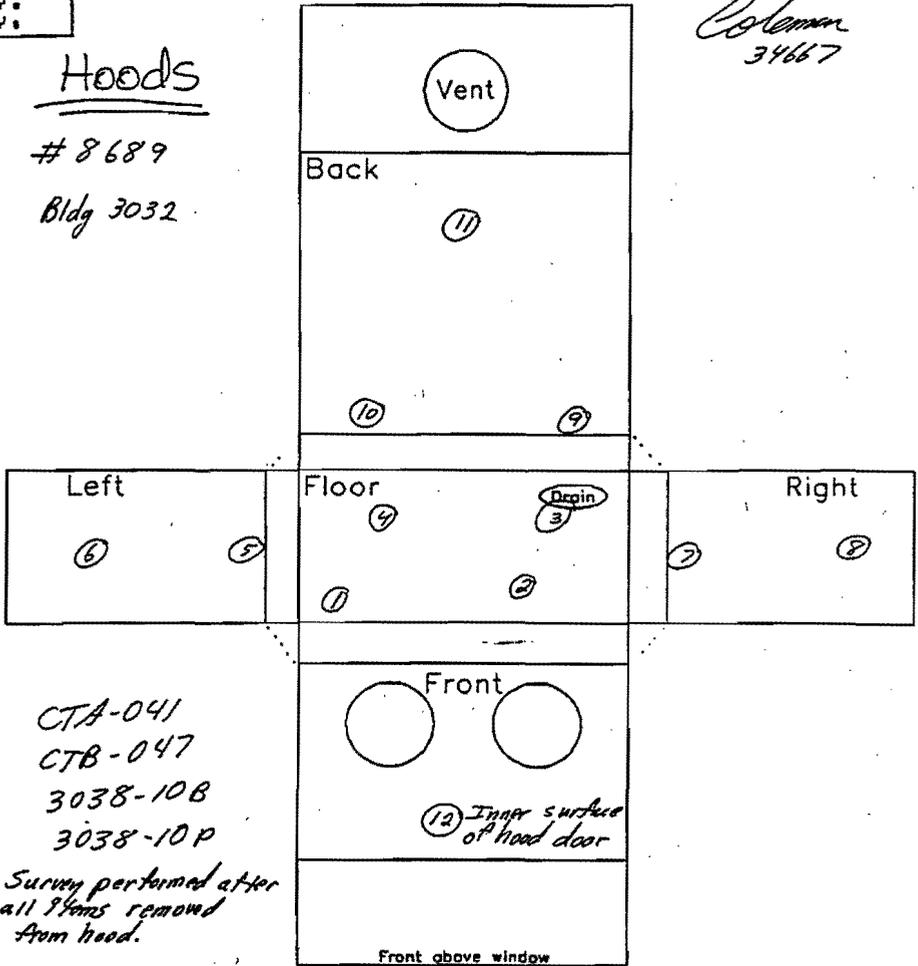
3038 Field Office

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

Give only DPM on scales over	
20 dpm/100 cm ² s	
200 dpm/100 cm ² s	
A	B
1 < 20	1 < 200
2	2
3	3
4	4
5	5
6	6 ↓
7	7/200
8	8/1000
9	9 < 200
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
8689
Bldg 3032

Coleman
34667



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

Boundary Designations			
⊙	- Smear Location	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.

ORNL Radiological Survey Data

Survey Number: 3038-97-0288 3038 Field Office Date: 2-6-97 Time: 2:00

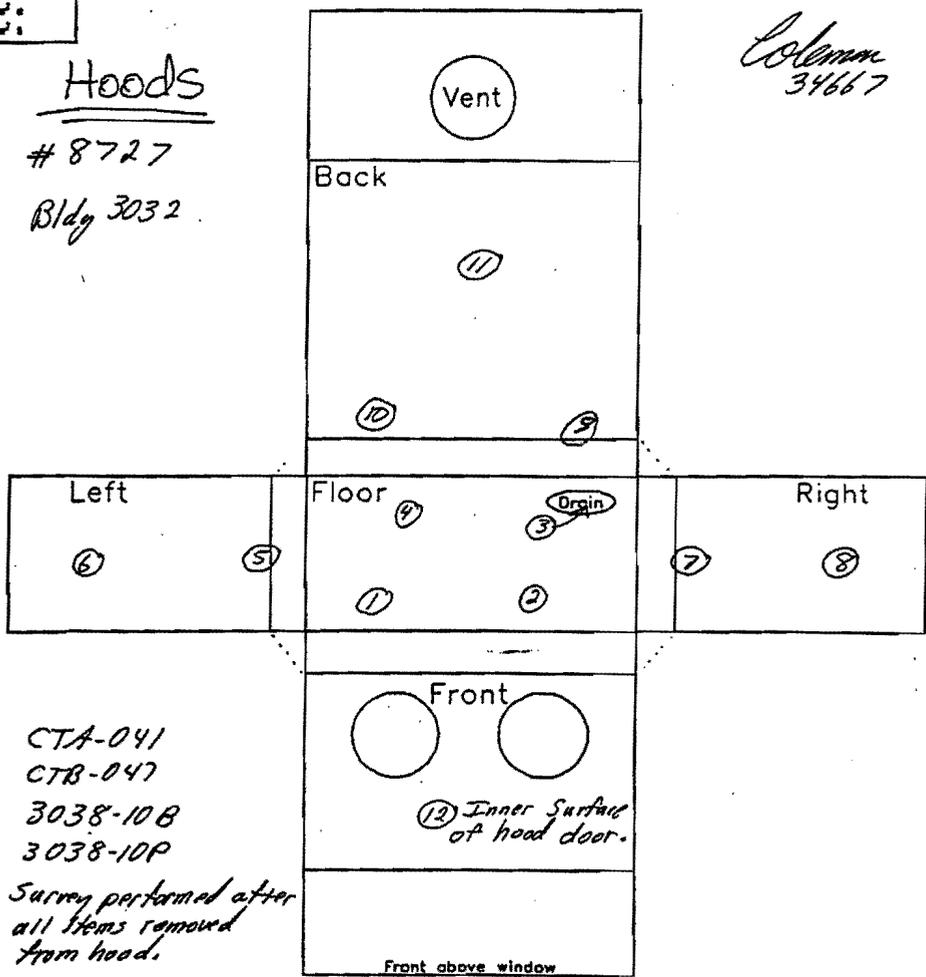
Give only DMR on counts over	
20	cpm/100 cm ² s
200	cpm/100 cm ² s

a	B
1 120	15000
2 220	2200
3 360	1200
4 600	10000
5 120	13000
6	13000
7 ↓	14000
8 300	17500
9 360	19000
10 2400	102000
11 120	14800
12 ↓	12600

Hoods
8727
Bldg 3032

Column
34667

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



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

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

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

ORNL Radiological Survey Data

Survey Number: 3038-97-0238

3038 Field Office

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

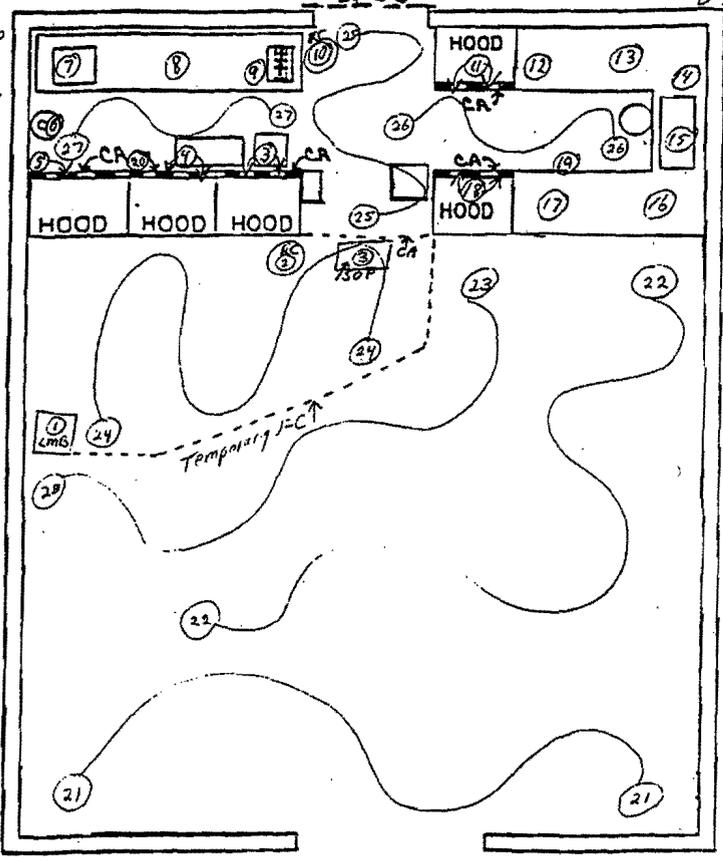
Give only D&R on scales over
20 cps/100 cm² or
200 cps/100 cm²

BUILDING 3032

Colman
34667

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

3038-10P
 3038-10B
 CTA-041
 C7B-047



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

Legend		Boundary Designations	
(S)	- Smear Location	RA - Radiation Area	BA - Radiological Buffer Area
(L)	- Large Area Smear	HR - High Radiation Area	CA - Contamination Area
(C)	- Contact Dose Rate	VR - Very High Radiation Area	HC - High Contamination Area
(30)	- 30 cm Dose Rate	AR - Airborne Radioactivity Area	FC - Fixed Contamination Area
(G)	- 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.

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