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RF/RMRS-97-0021



WASTE MANAGEMENT PLAN BUILDING 123

JUNE 1997

ADMIN RECORD

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WASTE MANAGEMENT PLAN

BUILDING 123

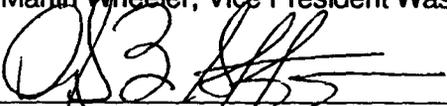
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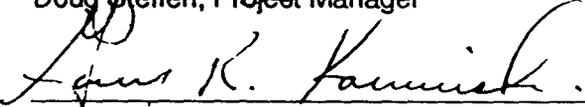
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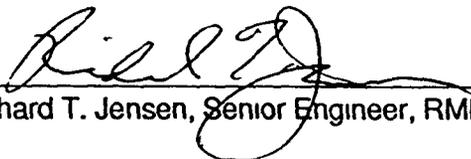


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WASTE MANAGEMENT PLAN BUILDING 123

1.0 SCOPE

Decontamination, dismantlement, and demolition of Rocky Flats Environmental Technology Site (RFETS) facilities generate a variety of solid and liquid wastes. The waste may be designated as radioactive, mixed, hazardous or non-hazardous waste and must be managed in accordance with State and Federal regulations. The purpose of this document is to describe the waste management program that addresses waste management requirements for the decontamination and decommissioning of Building 123. The building was used for analyzing and counting radioactive samples, and as such the amount of radioactive material that entered the building was very low. Less than 5,000 ft³ of radioactive and hazardous waste is anticipated, with no Transuranic waste.

There will also be a large quantity of asbestos contaminated waste. Asbestos removal will be subcontracted to a commercial vendor who is licensed to remove and handle this type of waste. Transportation and disposal of non-contaminated asbestos waste will be handled by the subcontractor, working with the RMRS Waste Disposal Group and DCI Traffic Management. They will make certain that the waste goes to a site that is licensed for asbestos disposal, that is also approved to accept waste from Rocky Flats. Except for the rare case of asbestos waste contaminated with low-level radioactivity, the subcontractor is expected to perform this work with a minimum of oversight from Waste Operations. The processing, packaging, storage, and transportation of industrial waste and the asbestos waste will be handled by subcontractors. RMRS Waste Disposal and DCI Traffic Management personnel will oversee these operations. Offsite transportation shall comply within Department of Transportation (DOT) regulations. Low-level radioactive waste, mixed wastes, and asbestos contaminated with low-level radioactivity will be certified the Kaiser-Hill Waste Certification group. The technical basis for development of the Waste Management Plan (WMP) is outlined in the U.S. Department of Energy, Office of Environmental Management Decommissioning Resource Manual, dated August 1995, and the Draft Decommissioning Program Plan.

The scope of the project includes the complete removal of all internal piping, ventilation, and above slab process waste systems in Buildings 123, 113, 114, and 123S. The buildings will be demolished and materials removed down to the base slab. If sampling underneath the slab finds contamination present, the building slab and foundation will be removed as required to remediate the contamination. Remediation of the soil around Building 123, and possible underground contamination will be done according to RMRS ER procedures. These remediation activities will also generate low-level radioactive waste in the form of soil, piping, and debris. Some hazardous or mixed waste may also be present. During building demolition this project will generate asbestos and Low-Level Radioactive Waste (LLW). Hazardous and mixed waste may also be found, but the potential for these wastes to be present is extremely low. Hazardous chemicals and laboratory equipment will be removed during the building deactivation phase. Process waste lines may have low levels of internal contamination caused by processing bioassay and environmental samples. However, over 60% of the process waste lines were replaced in the past five years. The removed pipelines were surveyed and released for disposal in the onsite sanitary landfill. Localized areas of contamination within the building may be isolated and decontaminated, to limit the amount of low-level and hazardous waste that is generated. Projected volumes and types of waste to be generated are discussed below. They are based upon preliminary planning and reconnaissance characterization activities.

2.0 RESPONSIBILITIES/POINTS OF CONTACT

This section of the WMP presents an overview of the project organization. These individuals are the main points of contact for various project activities. Key waste management personnel from within the project and other waste management contacts for the project, and a description of their waste management responsibilities is presented below.

2.1 PROJECT MANAGER (Douglas Steffen)

The Project Manager is responsible for management of the project including overall responsibility for the waste generated by the project. These responsibilities include assuring adequate and timely characterization of the waste and the projection of the quantity of waste expected. In addition, the Project Manager should ensure that required plans are in place to handle the types of waste to be generated, see that a cost estimate is made and that funds are available to dispose of the waste, and oversee and coordinate all project-specific waste management issues, including preparation of the WMP and assuring its implementation. Project personnel will also decontaminate and size reduce the waste when it is prudent to do so. The Project Manager coordinates activities with the Waste Management Liaison, Project Engineer, and Demolition Manager to ensure that issues associated with waste generation are addressed, including proper characterization, packaging, meeting appropriate RMRS waste acceptance criteria, and filling out relevant paperwork, such as travelers, Waste and Environmental Management System updates, etc. It is the responsibility of the project to ensure that waste is identified, properly documented, segregated, packaged, and prepared for storage or shipment. Waste Operations then receives the waste for onsite storage, or oversees offsite shipment.

D&D project personnel assigned to the project will provide

- Waste generation, segregation, decontamination and size reduction
- Technical support regarding waste generation, packaging and characterization
- Review of IWCPs for waste management actions

2.2 WASTE MANAGEMENT - ENVIRONMENTAL COORDINATOR (Ernie Bentsen)

This individual is assigned to the Decontamination & Decommissioning Construction Management group. He assists D&D projects with all aspects of waste management. For this project, he will assume the duties of the Environmental Coordinator when asbestos removal begins. All waste removed prior to this time will be the responsibility of the Building and the Building Coordinator. This includes coordinating with the Waste Management Liaison to handle environmental compliance and waste management issues, and interfacing with waste management personnel to schedule and complete waste management activities in a timely manner and ensure compliance with all relevant requirements.

The Waste Management Coordinator arranges for waste packages for low-level, hazardous, or mixed waste, and schedules technicians and certification personnel, as needed, to package and prepare waste for receipt by Waste Management.

2.3 WASTE MANAGEMENT - LIAISON (Dan Salyers, Waste Disposal Group)

The Waste Management Liaison coordinates with the Project Manager and is responsible for coordination of waste management activities across organizational lines. Some of the groups that may become involved include Radiological Engineering, the Waste Operations group for handling, storage and disposal, Traffic Management, the Waste Management Environmental Coordinator, and other groups such as Nuclear Safety which may assist with waste management activities. This individual will assist the Waste Management Coordinator as needed, providing access to waste management personnel across organizational lines. This individual is the contact point for all waste management activities. He coordinates onsite transfers, and oversees

subcontractor operations that deal with the loading of shipments for offsite disposal. He works with Traffic Management to prepare the Bills of lading or EPA Uniform Hazardous Waste Manifests as needed, and coordinate all shipments with Traffic Management.

2.4 WASTE OPERATIONS SUPPORT (GENERAL)

Waste Operations provides services to the Rocky Flats Environmental Technology Site (RFETS), including receipt of waste and other materials from the project, disposal and recycle as available, and storage of waste. Waste Characterization will be done by personnel assigned to the project. Waste Operations will oversee the transportation of waste both onsite and offsite. Industrial waste shipments, and asbestos will be handled by subcontractors. Waste Operations will coordinate offsite shipments and ensure that the waste is sent to an approved disposal site. They will store radioactive waste, unless arrangements are made to ship the directly to a disposal site. If waste is shipped directly offsite, they will provide oversight and coordination of all shipments.

2.4.1 Solid Waste Operations

Solid Waste Operations can provide the following services and support for the project:

- Receipt of radioactive waste that complies with RMRS Waste Acceptance Criteria
- Technical support regarding waste generation, packaging, and characterization
- LL/LLM guidance through established programs
- Storage of waste
- Review of IWCPs for waste management actions

2.4.2 Waste Disposal Projects

Waste Disposal Projects is responsible for:

- Offsite shipment of project wastes and materials for disposal, and recycling
- Preparing waste for offsite shipment
- Maintaining arrangements with offsite facilities for receipt of RFETS waste
- Scheduling waste disposal activities as necessary to support project requirements

2.4.3 Waste Certification Oversight (Kaiser-Hill)

Waste Certification Oversight is responsible for:

- waste certification of radioactive waste for shipment purposes

2.5 TRAFFIC MANAGER (DCI Traffic Management)

Waste transfer onsite and offsite will be accomplished with the assistance of a Traffic Management representative. This individual will coordinate the onsite transfer and offsite shipping of waste. Traffic Management works with the Waste Management Coordinator, Construction Superintendent, Waste Management Liaison, and the EC to ensure that waste packages are transported in a timely manner to the appropriate treatment, storage, or disposal location. A large portion of the waste is expected to be shipped directly offsite for disposal. Traffic Management is responsible to see that waste packages meet the requirements of the Department of Transportation (DOT) (49 CFR) for shipping of waste offsite. This group is also prepares the Bills of lading or EPA Uniform Hazardous Waste Manifests for the waste shipments.

2.6 RADIOLOGICAL ENGINEER (John Miller)

Radiological Engineering is responsible for all radiological surveys, release of equipment or materials to PU&D or for offsite disposal, radiological health & safety, and other miscellaneous activities associated with the radiological aspects of D&D. Radiation Control Technicians (RCTs) working under the direction of Radiological Engineering will perform surveys and assay equipment and materials. No equipment or building materials, including building rubble, will be allowed to leave Building 123 without receiving proper release from this group.

2.7 CHARACTERIZATION SPECIALIST (Mary Aycok)

This individual is responsible for conducting the Reconnaissance Characterization, and directs all sampling and analysis of building areas for both radiological and hazardous materials identification. She works together with Radiological Engineering to develop the survey plans. In the same way, they will work with environmental specialists to develop sampling and analysis plans for the IHSS areas, and as appropriate, sampling strategies for determining hazards within the building (Asbestos, lead, PCBs, beryllium, and other potential hazardous materials). The Characterization Specialist is responsible for generating a Reconnaissance Characterization Report, Sampling & Analysis plans, and other sampling strategies as needed, and the Final Characterization Report for the project.

3.0 WASTE GENERATION

This section of the WMP provides a detailed description of the wastes and excess materials that are expected to be generated by the Building 123 Decommissioning Project. The Building 123 Waste Stream Residue Identification and Characterization Book (WSRIC), process knowledge and reconnaissance characterization have been used to identify these wastes and excess materials. The Building 123 WSRIC can be referenced to obtain characterization information and a description of the methods for waste segregation based on Item Description Codes (IDCs) or Waste Form Codes (WFCs). This information is required to properly characterize and prepare radioactive or hazardous waste for packaging and certification. Characterization and sampling requirements are defined in the Building 123 Reconnaissance Level Characterization Report, the Characterization Plan and related Integrated Work Control Packages (IWCPs).

Waste will be generated during each of the following phases of the project: (1) Asbestos Abatement, (2) Building Preparation, (3) Demolition, and (4) Remediation of the Individual Hazardous Substance Sites (IHSS). Waste generated prior to asbestos abatement will be the responsibility of the building personnel. All types of waste will follow a similar process flow for disposition. After waste is generated, it must be identified and classified using established methods and documentation. Whenever possible, it is segregated for reuse or recycle. The waste is then prepared for packaging. This may include size reduction, consolidation, and bagging. Project personnel will accomplish these activities, and prepare the required documentation. Radioactive waste must be certified and packaged by trained personnel. It must conform with the particular RMRS waste acceptance criteria, depending on its classification. After the waste is packaged, the project delivers the waste to Waste Operations for storage or offsite disposal. Non-radioactive, non-hazardous waste may be taken directly offsite and handled by a subcontractor, however, Waste Management personnel will oversee their activities. Final documentation must be prepared before shipments leave the Building 123 area. They may include a radiological release, manifests, and Bills of lading. Waste Management will locate the waste in a storage area and arrange for offsite shipment. The following sections describe the types of waste and how they will be handled for each phase of the project.

3.1 ASBESTOS ABATEMENT

During this phase of the project, asbestos will be removed from the building. Materials containing asbestos, or asbestos waste, will be the primary type of waste generated. This waste includes plastic sheeting, gloves, and other materials that are exposed to the asbestos during abatement. Radiation Control Technicians (RCTs) will survey the materials before they are removed from the building. If radiation is detected, the asbestos that is contaminated will be classified as Low Level Waste. Some building rubble will also be accumulated as non-asbestos containing materials are removed to gain access to the asbestos. This rubble will be stockpiled and handled when demolition of the building begins.

The asbestos to be removed includes floor tiles, wall board, pipe insulation, and plastic and gloves used during abatement. The asbestos waste must be handled by qualified asbestos workers. It will be double bagged and placed in containers for shipment to an authorized landfill. The subcontractor will label the containers with asbestos warning labels and other required packaging labels. Project personnel will ensure that the waste is properly packaged, labeled, and that manifests and a bill of lading are prepared. EPA Uniform Hazardous Waste Manifests and the Bills of lading will be prepared by Traffic Management. The Waste Disposal group and Traffic Management will coordinate shipment of the waste offsite.

If radioactive waste is generated, qualified, waste packaging technicians assigned through the project will be called upon to take the waste from the subcontractor. Drums or boxes will be provided by the Waste Disposal group. The technicians will package and label the waste, and arrange for it to be certified by the Kaiser-Hill Waste Certification group. Working with the certification personnel, the Project Waste Coordinator will prepare all required documentation. The drums or boxes will then be turned over to Waste Operations for storage and disposal.

3.2 BUILDING PREPARATION

Activities during this phase will include the removal of any leftover equipment, decontamination of radioactive locations, and stripout of recyclable materials. Process waste lines, plumbing, scrubber systems, and similar types of support systems will be removed or decontaminated. Three potential types of waste will be generated. They are Low Level, Hazardous, and Industrial waste. There is a potential for small amounts of Low Level-Hazardous mixed waste, but it is not expected. Waste forms will consist of building debris, piping, wiring, equipment, fixtures, utility panels, alarms, etc.

Low-level waste will be handled the same as during the Asbestos Abatement. Qualified, waste packaging technicians will work with decontamination personnel and radiation monitors to identify and segregate the Low Level waste. Drums or boxes will be provided by the Waste Disposal group. The technicians will package and label the waste, and arrange for it to be certified by the Kaiser-Hill Waste Certification group. Working with the certification personnel, the Project Waste Coordinator will prepare all required documentation. The drums or boxes will then be turned over to Waste Operations for storage and disposal.

Hazardous waste will be handled in much the same manner, except it will not be necessary to certify the waste. It must be properly packaged in drums, labeled, and the required documentation generated. This will be done by the Project Waste Coordinator. The drums or boxes will then be turned over to Waste Operations for storage and disposal.

Industrial waste will be generated from building debris and leftover materials. It will include any items or debris that will not be accepted by PU&D for recycling. PU&D will take much of the equipment, and certain metallic items such as copper wire or lead that can be recycled. Any items or debris containing hazardous material must be handled as hazardous waste. Industrial waste may be stockpiled for disposal with the building rubble or sent to a landfill. During this phase of the project, any waste destined for a landfill will be handled by the Waste Disposal group.

Appropriate documentation will be generated by the Project Waste Coordinator and Traffic Management

3.3 DEMOLITION

This phase of the project will be primarily conducted by a subcontractor. After the final building radiation surveys are completed, the building rubble from decommissioning will be released as industrial waste. This waste will consist of all of the remains of the building including walls, floors, roof, windows, and all remaining fixtures. This waste will be loaded in roll-off boxes or dump trucks in preparation for offsite shipping. It must meet the criteria for shipment to an approved offsite landfill. The Waste Coordinator will ensure that the subcontractor complies with all requirements for offsite shipments, and he will obtain radiological release from Radiological Engineering. The subcontractor will follow procedures as described in "Sanitary Waste Offsite Disposal," 1-PRO-573-SWODP, 1997. The subcontractor will load and ship the waste, under the guidance of Waste Operations. Waste Operations will coordinate with Traffic Management to prepare the Bills of lading.

Should any hazardous waste be discovered during the demolition activities, trained waste technicians from the site will be used to characterize, package, and handle this waste as detailed above.

3.4 REMEDIATION OF IHSS

At this stage of the project, the building will have been removed from its foundation, demolished, and the industrial waste shipped offsite. A sampling plan has been written to characterize the waste under the slab. The results of the sampling will determine how extensive, and what type of remediation is pursued. If underground contamination, radioactive or hazardous, is discovered, the remediation of the site will produce Low Level, Hazardous, or Mixed Wastes. Depending upon the extent of the contamination, and the options pursued, it is expected that contaminated soil and pipelines would be the major source of waste. Plastic, tools, personal protective equipment, and other materials associated with remediation would also be generated. Contaminated waste will be handled by qualified, waste packaging technicians who will work with decontamination personnel and radiation monitors to identify and segregate the Hazardous or Low Level waste. Results from sampling, and radiation surveys will be used to guide this work. Drums or boxes will be provided by the Waste Disposal group. The technicians will package and label the waste, and arrange for radioactive waste to be certified by the Kaiser-Hill Waste Certification group. Working with the certification personnel, the Project Waste Coordinator will prepare all required documentation. The drums or boxes will then be turned over to Waste Operations for storage and disposal.

4.0 WASTE TYPES

This section provides information of the various classifications of waste and materials expected to be generated by the project. Most of the PU&D excess materials are expected to be removed from the building prior to beginning asbestos abatement. They have been included for informational purposes only. This information is based upon the Reconnaissance Level Characterization and interviews with current and prior building occupants.

**TABLE 1
PROJECTED WASTE GENERATION FROM BUILDING 123 D&D PROJECT**

Waste Type	Waste Forms	Disposition Of Waste	Estimated Quantity
Asbestos	Floor Tile Wall Board Insulation Plastic, Paper, from Abatement Work	- Handled by Asbestos Trained Workers - Double Bagged - Asbestos Warning Labels - Packaged & Shipped by Subcontractor - Documentation prepared by Traffic Management - Shipped to Offsite Disposal site	20,000 ft ³
Contaminated Asbestos (Low Level Waste)	Any of the forms listed with asbestos that are contaminated with radioactivity	- Handled by Radiation Trained Workers - Double Bagged & Waste Prepared for Low Level Drums - Requires Certification by K-H Waste Certification - Packaged by Qualified RFETS Technicians - Delivered to RMRS Waste Operations for storage prior to future offsite disposal	None Currently Expected
Low Level Waste	Hoods Sinks Floor or Ceiling Tile Misc wall coverings Process Lines Plastic, Paper, from Decontamination or LLW Handling Soil from Remediation Underground Pipelines Plastic, Paper, Tools Etc from remediation activities	- Handled by Radiation Trained Workers - Packaged by Qualified RFETS Technicians - Prepared for Low Level Drums or Boxes - Requires Certification by K-H Waste Certification - Delivered to RMRS Waste Operations for storage prior to future offsite disposal	3100 ft ³

**TABLE 1
PROJECTED WASTE GENERATION FROM BUILDING 123 D&D PROJECT (continued)**

Waste Type	Waste Forms	Disposition Of Waste Quantity	Estimated
Toxic Substance Control Act (TSCA) Waste	Light Ballasts No other known forms expected	- Handled by Trained Hazardous Waste Workers - Prepared for Drums - Requires Characterization by Qualified RMRS personnel - Packaged by Qualified RFETS Technicians - Delivered to RMRS Waste Operations for storage prior to future offsite disposal	15 ft ³
Hazardous Waste	None presently known	- Handled by Trained Hazardous Waste Workers - Prepared for Drums - Requires Characterization by Qualified RMRS personnel - Packaged by Qualified RFETS Technicians - Delivered to RMRS Waste Operations for storage prior to future offsite disposal	None Currently Expected
Mixed Waste	None presently known	- Handled by Trained Hazardous Waste Workers - Prepared for Drums - Requires Characterization by Qualified RMRS personnel - Requires Certification by K-H Waste Certification - Packaged by Qualified RFETS Technicians - Delivered to RMRS Waste Operations for storage prior to future offsite disposal	None Currently Expected
Industrial Waste	Floor or Ceiling Tile Misc wall materials Windows Roofing Materials Cement Plaster Process Lines Building Rubble	- Handled by Subcontractor - Loaded into Roll Offs (No additional packaging) - Can be shipped directly offsite after obtaining radiological release and proper documentation	150 Yd ³

4.1 LOW-LEVEL (LL) WASTE

Low-level waste contains <100 nCi/gram alpha-emitting transuranic nuclides. Historical information suggests that all of the radioactive waste produced as a result of Building 123 decommissioning activities will be low-level in nature. Low-level waste will be generated and managed in compliance with the RMRS WAC and the RFETS Low Level Waste Management Plan. LLW that results from decommissioning activities will be stored onsite or, where feasible, shipped directly to an approved offsite disposal or recycle facility. The low-level waste volume associated with the demolition of the building is estimated to be 2,480 ft³.

An estimate of amount of Low Level Waste to be generated was prepared based on the following assumptions:

- If a room was not posted as a radiological hazard, all materials contained in the room were considered non-contaminated and therefore, suitable for dispositioning through PU&D.
- Materials contained in rooms identified as Radiological Buffer Areas (RBAs), that were not suspected of being contaminated and can be confirmed as non-contaminated through smear surveys, were also considered suitable for PU&D. Examples of such materials are desks, cabinets, and chairs.
- Any materials that were located in a RBA were considered as not contaminated, except for hoods, drains, and air intake areas. Surveys of various rooms have shown that more than 90% of the rooms will have no contamination. Therefore, an estimate was made that 10% of the hoods and drains will be contaminated. The amount of LLW is based upon that estimate.
- Material/waste segregation was considered to be appropriate in Contaminated Areas (CAs) because contamination, if any, will be found in localized areas such as hoods, drains, or air intakes.
- Office equipment, excluding computers, located in a CA were deemed suitable for dispositioning to PU&D. Decommissioning historical knowledge is the basis for this assumption. Survey data will be used to confirm this assumption.
- Process pipelines may prove to be non-contaminated. For now, the worst case was assumed; that is, that they are all contaminated with Low Level Radioactivity. The additional factors given below were used to estimate that removal of contaminated pipelines would generate 1000 cubic feet of contaminated pipeline waste.

The total low-level waste volume was determined by estimating that 10% of the hoods, drains, and air intakes in the building will be contaminated. Another 30% was added to account for consumables such as gloves, plastic, coveralls, tape and assorted tools and paper items that will be generated during the strip out of the contaminated items. The resulting LL volume was then multiplied by 125% to compensate for package size limitations. (Not all of the volume of a waste box can be utilized).

4.2 HAZARDOUS WASTE/MIXED WASTE

A hazardous waste is defined as waste that exhibits the characteristics of corrosivity, ignitability, reactivity, or toxicity or that is listed in 6 CCR 1007-3, Section 261, Subpart D. Included in this definition is hazardous waste that has been mixed with radioactive waste. The Building 123 Decommissioning Project anticipates that very little, if any, hazardous or mixed waste will be found. All chemicals used in the building are described in the Building 123 WSRIC book. Hazardous chemicals were disposed of in Satellite Accumulation Areas, and as a result, discovery

of hazardous chemical waste is unlikely. If found, hazardous waste will be generated and managed in compliance with the Hazardous Waste Requirements Manual, RFETS Low-Level Waste Management Plan, and Non-Radioactive Waste Packaging, 1-E-88-WP-1027-NON-RAD

Deactivation activities, such as equipment, chemical, and systems removal, which will be performed prior to decommissioning, are anticipated to address the bulk of the radioactive or hazardous waste residing in Building 123. No mixed wastes are anticipated, but plans will be in place to handle mixed waste, should any be found. Most of the waste will either fall into the hazardous or industrial waste categories. Mixed or hazardous waste that results from decommissioning activities will be stored in permitted areas onsite or, where feasible, shipped directly to an approved offsite disposal or recycle facility.

4.3 INDUSTRIAL WASTE

Industrial waste is, for the purpose of this project, defined as that waste which meets industrial landfill requirements. Industrial waste will be generated as a result of the Building 123 Decommissioning Project. The industrial waste volume associated with the demolition of the building is estimated to be 150 yd³. This estimate is based on 19,000 ft³ of building to be demolished. The formula used to calculate this volume is 7.4 yd³ per 10,000 ft³ of building. Richardsons Engineering Services, Inc., in 1994, was used as the basis for this calculation. This estimate does not include foundations, the demolition only includes removal of building structures to the ground level (slab on grade). This waste will be managed in accordance with all applicable rules and regulations. It is anticipated that the resultant rubble will be loaded into roll-offs and shipped to an offsite landfill. The subcontractor will follow procedures as described in "Sanitary Waste Offsite Disposal," 1-PRO-573-SWODP, 1997. These procedures will describe the methods for preparing and shipping the waste. They also include the prohibited items. It will be the responsibility of the subcontractor, with monitoring by the Waste Coordinator, to conform with this procedure. The subcontractor will also provide safe transportation of the rubble and waste to the landfill. The DCI Traffic Management will prepare the Bills of lading for the shipments. Waste Disposal personnel will coordinate these shipments.

4.4 TOXIC SUBSTANCE CONTROL ACT (TSCA) WASTE

Non-radioactive contaminated PCB waste may be produced from the removal of light fixtures. The estimated volume of PCB waste from these sources is less than two 55-gallon drums. (This estimate is based on packaging 100 ballasts per 55-gallon drum.) This waste will be handled and packaged in compliance with 1-10000-EWQA, TSCA Management Plan. The Demolition Contractor will package the waste and onsite Transportation will transfer it to an RMRS storage area. The Waste Disposal group will then be responsible for coordinating offsite shipment and disposal.

4.5 ASBESTOS WASTE

The project anticipates generating approximately 20,000 ft³ of asbestos containing waste. Calculations for this asbestos estimate were based on measurements of suspected materials and information obtained from blueprints where materials could not be accessed to measure. The estimate includes the asbestos materials such as tiles and insulation, the plastic sheeting used to isolate areas, and perform the abatement activities, and the Tyvek and other consumable items that are used in support of the abatement.

Asbestos containing materials will be handled in accordance with the Colorado Department of Public Health and Environment (CDPH&E), OSHA, and TSCA requirements. Asbestos waste will be packaged in compliance with 1-10000-TRM-WP-2401, Asbestos Waste Management. RMRS Construction Management will oversee the abatement contractor activities. Radiological Engineering is expected to determine whether any of the asbestos areas are contaminated with low-level radioactivity. If so, Radiation Worker Training will be required for the asbestos workers.

who remove it. Packages will be provided by the site, and loading of the packages will be supervised by Waste Operations personnel. The low-level asbestos will then be turned over to RMRS Waste Disposal. The subcontractor will label packages with asbestos warning labels. The subcontractor will comply with all other packaging and shipping requirements. The offsite contractor performing the abatement work will be responsible for packaging and preparing the asbestos waste for shipment. Traffic Management will issue the Bills of lading or EPA Uniform Hazardous Waste Manifests, and the offsite contractor will deliver the waste to an approved disposal site. The subcontractor should use the approved offsite disposal company or make certain that any disposal site that is used receives approval from the DOE and the site.

4.6 PROPERTY UTILIZATION AND DISPOSAL (PU&D) MATERIALS

PU&D materials, as defined in this WMP, are those materials that have historically been accepted for storage and reuse by PU&D. These materials include, but are not limited to, office equipment such as desks, chairs, tables, carts, and bookshelves, which are located in non-contaminated areas or have been located in contaminated areas but confirmed as non-contaminated through radiological survey. The estimated volume of materials designated for PU&D is 15,800 ft³. These materials will be sent to PU&D. Table 2 shows the estimates of PU&D materials and estimated low-level waste by room.

TABLE 2
BUILDING 123 - ESTIMATES OF LOW LEVEL WASTE & PU&D MATERIALS BY ROOM

ROOM NUMBER	ITEM DESCRIPTION	ESTIMATED FT ³ TO PU & D	ESTIMATED FT ³ LL WASTE
158	File System Cabinets & Shelves Desk	700	
163	Counting Systems Cabinets & Desks	360	
157	Fume Hoods (4) Cabinets & Shelves Lab Benches	1780	150
162	Desks, Chairs, Files	300	
156	Fume Hoods (2) Muffler Furnace Storage Unit, Shelves Lab Benches	1930	160
155	Power Supplies Analyzers, Detectors Electrical Equipment	1800	
159	Utility Panels Pipeline	200	
109	Storage Shelves	220	160
111	Lab Benches Shelves & Cabinets Refrigerator, Chambers	750	
112	Fume Hoods Incubator Lab Benches Desk & Shelves	1300	
103A	Fume Hood Furnace Lab Benches Shelves	720	130
103	Fume Hood Lab Benches Cabinets	490	100
105	Fume Hood Lab Benches Cabinets & Shelves	520	210

TABLE 2
BUILDING 123 - ESTIMATES OF LOW LEVEL WASTE & PU & D MATERIALS BY
ROOM (continued)

ROOM NUMBER	ITEM DESCRIPTION	ESTIMATED FT ³ TO PU & D	ESTIMATED FT ³ LL WASTE
124	Fume Hood Lab Benches Shelves	550	100
125	Fume Hoods (9) Lab Benches Cabinets & Refrigerator	2000	370
127	Fume Hood Phosphonmeter Marble Balance Table Lab Benches	590	100
126	Lab Benches Files, Chairs, Desk Air Conditioner Refrigerator	340	
West Hall	Cabinets & Files	370	
North Hall	Cabinets Files & Desks	530	
East Hall	Cabinets	40	
Locker Room	Locker & Cabinets	300	
Throughout Building	Process Waste Piping		1000
	TOTAL	15790	2480

5.0 WASTE CERTIFICATION

Waste Certification activities will be conducted by trained personnel assigned to the project. Waste Characterization data and packaging requirements for low-level wastes will meet the requirements of the Nevada Test Site's Waste Acceptance Criteria (NTSWAC, RO 9/96). Procedures and policies for managing low-level wastes are outlined in the RFETS Low Level Waste Management Plan (44-RWP/EWQA-0014, Rev 1, 1996). All radioactive waste must be certified prior to transfer to Waste Operations.

Release of Non-contaminated material, debris, and equipment from a site contaminated with hazardous materials is accomplished by demonstrating that the materials or wastes do not exhibit any of the characteristics of hazardous waste as identified in Subpart C of 6 CCR 1007-3 SS261 or from Subpart D. Process knowledge and operating history related to the facilities can also be used to segregate hazardous contaminant areas from unaffected areas.

Building 123 WSRIC books are used as a part of the certification process. The current Building 123 WSRIC book describes each waste stream resulting from a process currently performed in the building. Processes are described, chemicals used in the process are identified, and resulting wastes IDCs or WFCs are characterized in the Building 123 WSRIC book. This book provides guidance for characterizing and disposing of waste during the deactivation phase of the project.

A second WSRIC book is being prepared to assist with waste characterization during D&D activities in Building 123. This book will describe the waste streams and provide characterization information to provide guidance for project personnel to segregate, package, and prepare the waste for receipt by Waste Disposal or for offsite shipment.

6.0 WASTE PACKAGING

LLW and LLM wastes generated by the project will be sorted at the time of removal. The waste will then be packaged and staged for further decontamination, survey, recycle, processing or packaging. Because the volume of waste is expected to be extremely low, the waste will be packaged in 55-gallon drums. Waste boxes will only be used if large amounts of LLW are discovered or if the materials are too large to fit in a 55-gallon drum. Waste Operations, in conjunction with the project, will designate the storage location for the LLW. It is expected that the majority of LLW will initially be transferred to an approved onsite storage at the site and will eventually be shipped to an offsite disposal facility. With proper approvals, it may be possible to ship the waste directly offsite.

DOT approved packages will be used to contain project generated waste that has been surveyed and packaged. Special packages may be used, under certain circumstances, to contain materials that may not fit into standard plywood boxes. The Project Manager will notify the affected waste management organization and obtain guidance if this occurs. Non-contaminated recyclable materials, such as scrap metal, may be placed in boxes and later segregated into PU&D supplied bins for ease of removal. Additional items may be placed onto pallets for transfer to PU&D.

Liquid wastes drained from process lines or sumps may produce hazardous mixed wastes if radioactive contamination is detected. Unknown liquid wastes will be sampled. Aqueous wastes, if contaminated, will be sent to onsite treatment facilities. Although none are expected to remain, any hazardous organic chemicals will be treated as excess chemicals. They will be properly packaged, and sent offsite to an approved hazardous waste disposal site.

7.0 ONSITE STORAGE, TRANSPORTATION, AND FINAL DISPOSITION

Wastes that will not be shipped directly offsite will be relocated to an appropriate onsite storage as designated by Waste Operations. Waste Operations personnel will provide site surveillance support to ensure that hazardous and mixed wastes are being managed in accordance with the conditions established in the current Site RCRA Permit.

The RMRS Waste Disposal group and Traffic Management will be involved in developing the requirements for offsite transportation of waste to the selected disposal or treatment site. The Project Manager will comply with the Rocky Flats Transportation Safety Manuals to ensure all relevant transportation requirements are met.

8.0 WASTE MINIMIZATION

The philosophy of waste minimization will be utilized in the planning and management of project generated wastes. Waste minimization will be accomplished using a waste life-cycle approach. Elimination and reduction of waste generated as a result of decommissioning is of high priority. Standard decontamination operations and processes will be evaluated for waste minimization potential and suitable minimization techniques will be implemented. If the cost is greater to demonstrate that the item is not contaminated than to pay for waste disposal, the item will be disposed of as waste.

Opportunities for waste minimization through scrap metal recycle are dependent on successful decontamination operations confirmed through radiation surveys. Equipment will be decontaminated to the greatest extent practical then surveyed in support of waste minimization. Contamination survey data may result in partial or full release of a piece of equipment for scrap metal recycle.

9.0 COMPLETION REPORT

Upon completion of the project, a Project Completion Report will be prepared. This report will include a listing of the wastes removed from the building, characterization data, and waste dispositioning information (e.g. size reduction, decontamination, or treatment) which contributed to the final forms and volumes of the wastes resulting from this project.

10.0 REFERENCES

Hazardous Waste Requirements Manual

Health and Safety Plan, RFETS, Rev 0, February 1996

RFETS Low-Level Waste Management Plan, 44-RWP/EWQA-0014, Rev 1, 1996

Rocky Flats Transportation Safety Manuals

RMRS Waste Acceptance Criteria, Rev 0, July 1996

Waste Stream and Residue Identification and Characterization, Building 123

Waste Stream and Residue Identification and Characterization for D&D

1-M12-WO-4034, Radioactive Waste Packaging Requirements

4-D99-WO-1101, Solid Radioactive Waste Packaging Inside of the Protected Area

1-10000-EWQA, TSCA Management Plan

1-C80-WO-1102-WRT, Waste/Residue Traveler Instructions

1-10000-WP-1024, Asbestos Waste Management

1-PRO-573-SWODP, Sanitary Waste Offsite Disposal

1-10000-EWQA, Section 1 5

1-E-8-WP-1027-NON-RAD, Non-Radioactive Waste Packaging

