



**CORRECTIVE ACTION ELEMENTS**  
**Action Plan Cover Sheet And Signatures**

Identification No.: 98-000759 Plan No.: 01

Responsible Manager: Vern Guthrie 

Audit/Assessment Title: Building 123 D&D Waste Management Process

Short Description of Deficiency: The quality of the data generated from Building 123 sampling operations conducted without the required Sampling and Analysis Plans and associated Data Quality Objective is indeterminate. A SAP was not used for some Building 123 D&D characterization sampling operations as required.

Detailed Description: N/A

Compensatory Measures: N/A

Generic Implications: N/A

Corrective Actions Summary:

<u>Task</u>	<u>Task Description</u>
No.: <u>01</u>	<u>A competent person shall review the Reconnaissance Level Characterization Plan and Report to verify that methods used for the sampling, analysis, and characterization were adequate for the required objective.</u>

Deliverables/Completion Criteria: Interoffice Memorandum documenting the results of the reviews. If the memorandum documents inadequate methods used, a revised corrective action will be initiated.

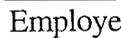
WBS/Work Package No.: N/A Task Due Date:

Work Control Form No.: N/A Date Task Completed:

Task Manager: Vern Guthrie   
Print Name

Causal Factor Determination: N/A

References: N/A

<u>Plan Manager:</u>	<u>Print Name</u>	<u>Signature</u>	<u>Date</u>	<u>Employee #</u>
<u>Vern Guthrie</u>				

Task Manager:				
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**CORRECTIVE ACTION ELEMENTS**  
**Action Plan Cover Sheet And Signatures**

Identification No.: 98-000757 Plan No.: 01

Responsible Manager: Vern Guthrie 

Audit/Assessment Title: Building 123 D&D Waste Management Process

Short Description of Deficiency: Building 123 D&D documents which prescribe quality requirements are not controlled in accordance with applicable RMRS document control procedures.

Detailed Description as needed: N/A

Compensatory Measures: N/A

Generic Implications: N/A

Corrective Actions Summary:

<u>Task</u>	<u>Task Description</u>
No.: <u>01</u>	<u>Capture the following documents (reference Report 89-0131-RMRS, Section 4.5) and place them into the RMRS document control system: Waste Management Plan Building 123; Waste Management Plan Building 123, Rev. 1; Reconnaissance Level Characterization Plan for Building 123; Project Execution Plan Building 123; Closure Plan for Building 123 Components of RCRA Unit 40; and Close-out Radiological Survey Plan for the 123 Cluster, Rev. 0 through 3. Associated documentation, including copy of reference CAP, should also be capture for inclusion into the respective document history files.</u>

Deliverables/Completion Criteria: Transmittal documentation.

WBS/Work Package No.: N/A Task Due Date July 15, 1998

Work Control Form No.: N/A Date Task Completed: \_\_\_\_\_

Task Manager: Vern Guthrie   
 Print Name

Causal Factor Determination: N/A

References: \_\_\_\_\_

Plan Manager: <u>Vern Guthrie</u>	/	/	
Print Name	Signature	Date	Employee #

Task Manager: <u>Vern Guthrie</u>	/	/	
Print Name	Signature	Date	Employee #

Author: Cynthia Dingman at JULIET19  
Date: 4/14/98 2:01 PM  
Priority: Urgent  
Receipt Requested  
TO: Vern Guthrie at Mail5  
TO: Greg Ward at MAIL8  
TO: Kathleen Wolf at Mail4  
TO: Jim Patterson at Bravo11  
TO: Jack Massie at Charlie12  
TO: Terry Loewenberg at Alpha10  
TO: Fred Hughes at Mail7  
TO: Mark Brooks at Mail1  
TO: John Bennett at Mail2  
TO: Patrick Arnold at Kilo20  
TO: Joe Anguiano  
TO: Paul Aguilar at Mail5  
TO: Juan Hernandez at Mail5  
TO: Dorthea Hoyt at Hotel17  
Subject: B123 Assessment Closeout Meeting

----- Message Contents -----

The close-out meeting for the Independent Assessment of Building 123 will be held tomorrow (Wednesday, April 15) at 3:00 p.m. in Building 116 conference room. Please notify affected personnel in your organizations. A draft assessment report will be available to those who attend the close-out meeting. If you have any questions prior to the meeting, please contact Cynthia Dingman at X3721.

The initial results of the assessment are as follows:

6 deficiencies and 2 observations were identified.

Deficiency No. 1 - Building 123 D&D waste characterization was not performed according to approved plannand and technical documents and was not performed according to the prescribed sequence.

Deficiency No. 2 - Planning documentation was not reviewed and approved for implementation by authorized personnel before the specific work commenced.

Deficiency No. 3 - Waste was generated without required 100% in-process waste inspection.

Deficiency No. 4 - The waste description for Waste Generator Instruction () does not correlate to the waste description for the selected IDC.

Deficiency No. 5 - Building 123 D&D documents are not controlled in accordance with applicable RMRS document control procedures.

Deficiency No. 6 - The TSCA Management Plan and the Asbestos Waste Management procedure no longer provide adequate instruction nor applicable requirements for the generation, handling, and storage of PCB and asbestos-contaminated waste.

Observation No. 1 - Waste from Building 123 D&D operations was characterized as low-level radioactive based upon a cost benefit determination rather than analytical methods or process knowledge.

Observation No. 2 - Building 123 Waste Management Plan and other waste planning and characterization documents were not reviewed by the appropriate waste

# DRAFT



Rocky Mountain  
Remediation Services, L.L.C.  
... protecting the environment

INDEPENDENT ASSESSMENT

4/27/98  
- Vern  
- This is the  
latest.  
- Cynthia

## ASSESSMENT REPORT

Independent Assessment No. 98-0131-RMRS

### Building 123 Decontamination and Decommissioning Waste Management Process

#### Distribution

Paul Aguilar, Low-Level Waste Disposal Projects, RMRS  
Joe Anguiano, Quality Assurance, RMRS  
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John Bennett, Quality Assurance Lead, RMRS  
Mark Brooks, Quality Assurance, RMRS  
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Greg Ward, Quality Assurance, RMRS  
Kathy Wolf, Director, Quality Assurance/Environmental Compliance, RMRS  
Martin Wheeler, Director, Waste Management, RMRS

cc:

QA&EC Records  
RMRS Records

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## 1. EXECUTIVE SUMMARY

This report provides the results of an independent assessment of the waste management process for Building 123 Decontamination and Decommissioning (D&D) activities. The assessment team evaluated both programmatic and functional elements of the project's waste management operations. Programmatic elements were assessed for effective implementation of quality requirements. Functional elements were evaluated for compliance to RFETS waste management directives. The fieldwork for the assessment was conducted between March 25, 1998 and April 8, 1998.

The primary programmatic areas reviewed include:

- Waste Management Planning/Characterization
- Document Control

The primary functional areas reviewed are as follows:

- Waste Inventory/Tracking
- Waste Packaging
- Waste Nonconformances
- Waste Documentation

In summary, the assessment team found that quality assurance requirements were not fully implemented for Building 123 D&D waste management operations.

One Strength, six Deficiencies and two Observations, which were documented during the assessment, are briefly described below. Corrective Action Process (CAP) forms have been initiated for all deficiencies noted below. For a complete description of each condition, refer to the body of the report.

### Strengths:

The RMRS staff and Project Manager for Building 123 D&D Operations are dedicated to the success of Building 123 D&D operations and were fully cooperative during the course of the assessment.

### Deficiencies:

Deficiency No. 1 - CAP No. 98-XXXXXX

The quality of the data generated from Building 123 sampling operations conducted without Sampling and Analysis Plans and associated Data Quality Objectives is indeterminate. A SAP was not used for some Building 123 D&D characterization sampling operations as required by 40 CFR 300.415 (b)(4)(ii); RFCA, Part 4, and Appendix 3, section 3.2; and as prescribed by DOE Decommissioning Handbook, Section 7.

Deficiency No. 2 - CAP No. 98-XXXXXX

The Reconnaissance Level Characterization Plan was not reviewed and approved for implementation before the specific work commenced, nor is objective evidence available regarding the review and approval of the Reconnaissance Level Characterization Report (RLCR). The information supplied in the RLCR was used to identify hazards and to determine worker protection, as well as the types and quantities of waste generated from Building 123 D&D activities.

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## Deficiency No. 3 - CAP No. 98-XXXXXX

The assessment team found that six waste crates were generated during Building 123 D&D operations without 100% in-process waste inspection as required.

## Deficiency No. 4 - CAP No. 98-XXXXXX

The waste description for Waste Generator Instruction (WGI) GI9701230284 does not correlate to the waste description for the selected Item Description Code (IDC) as stated in Solid Radioactive Waste Packaging procedure WO-1100. Note: This CAP was issued to the RMRS Waste Management organization.

## Deficiency No. 5 - CAP No. 98-XXXXXX

The Building 123 D&D documents reviewed during the assessment, which prescribe work and/or specify quality requirements, are not controlled in accordance with applicable RMRS document control procedures.

## Deficiency No. 6 - CAP No. 98-XXXXXX

The EG&G Rocky Flats Plant Toxic Substance Control Act (TSCA) Management Plan, 1-10000-EWQA, and the Asbestos Waste Management procedure, 1-10000-TRM-WP-2401, are out of date. These documents no longer provide adequate instruction nor applicable requirements for the generation, handling, and storage of PCB and asbestos-contaminated waste at RFETS. Note: This CAP was issued to the RMRS Waste Management organization.

## Observations:

### Observation No. 1

It appears that waste from Building 123 D&D operations was characterized as low-level radioactive waste based upon a cost/benefit determination rather than analytical methods or process knowledge, as required by DOE Order 5820.2A and Nevada Test Site Waste Acceptance Criteria (NTSWAC).

### Observation No. 1

The Building 123 D&D Waste Management Plan and other waste planning and characterization documents were not reviewed by the appropriate waste program personnel.

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## 2. PURPOSE

### 2.1 Subject

Building 123 D&D Waste Management Process

### 2.2 Objective

The assessment team evaluated both programmatic and functional elements of Building 123 D&D waste management operations. Programmatic elements were assessed for effective implementation of quality requirements. Functional elements were evaluated for compliance to RFETS waste management directives.

### 2.3 Scope

The scope of the assessment was limited to those areas of the Building 123 D&D waste management process that are the direct responsibility of RMRS, L.L.C., and its subcontractors. This assessment was requested by the RMRS Vice President of Operations and was performed in accordance with RMRS procedure 10.1, Independent Assessments.

*The primary programmatic areas reviewed include:*

- Waste Management Planning/Characterization
- Document Control

*The primary functional areas reviewed are as follows:*

- Waste Inventory/Tracking
- Waste Packaging
- Waste Nonconformances
- Waste Documentation

## 3. CONDUCT OF THE ASSESSMENT

### 3.1 Assessment Schedule

Entrance Meeting: March 25, 1998  
Start of Fieldwork: March 25, 1998  
End of Fieldwork: April 7, 1998  
Exit Meeting: April 15, 1998

### 3.2 Previous Assessment Activities in Subject Area

Compliance Review Report No. 98-004-WC&O was reviewed during the course of this assessment. The Compliance Review was conducted by Horne Engineering Services from January 28 through February 7, 1998. The report identified several discrepant conditions with regard to Building 123 waste generating activities. Waste Quality Action Reports were issued to Building 123 Construction Management and the RMRS Customer Service Organization. Deficiencies were identified for marking, storage, and handling requirements for asbestos contaminated waste; waste segregation; hold points for waste treatment; and waste generator training.

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A deficient condition regarding obsolete requirements and procedures has been identified as a result of the review of the referenced Compliance Review Report. CAP No. 98-XXXXXX (see Deficiency No. 6) was issued to the RMRS Waste Management organization for failure to provide current and adequate instruction and applicable requirements for the generation, handling, and storage of PCB and asbestos-contaminated waste at RFETS. This CAP effectively closes Waste Quality Action Report Nos. 98-0001 and 98-0004. For more information regarding Deficiency No. 6 and CAP No. 98-XXXXXX, refer to section 4.6 of this report.

### 3.3 Independent Verification of Previously Identified Deficiencies

No deficiencies were verified complete by this assessment. Further, no deficiencies were reopened by this assessment.

### 3.4 Assessment Methodology/Performance Criteria

The following methods were used during the performance of this assessment:

- Personnel Interviews
- Document and Record Reviews
- Observation

The following performance criteria were used to determine compliance and effectiveness:

- 10 CFR 830.120, *Quality Assurance*
- DOE Order 5700 6.C, *Quality Assurance*
- ANSI/ASQC E4-1994, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs*
- ASME-NQA-1-1994, *Quality Assurance Requirements for Nuclear Facility Application*
- DOE/EM-0142P, *US Department of Energy Decommissioning Handbook*, March 1994
- NTSWAC, August 1997, *Nevada Test Site Waste Acceptance Criteria*
- *Final Rocky Flats Clean-Up Agreement*, July 19, 1996
- 94-RWP/EWQA-0014, *Low Level Waste Management Plan*
- RMRS Quality Assurance Program Description

Note: All applicable quality assurance and regulatory requirements are relevant and appropriate for use as performance criteria for this assessment. Many of the above cited documents reference other quality assurance and regulatory standards from which specific requirements are established.

## 4. RESULTS

### 4.1 Deficiency No. 1 - CAP No. 98-XXXXXX

The quality of the data generated from Building 123 sampling operations conducted without Sampling and Analysis Plans and associated Data Quality Objectives is indeterminate. A SAP was not used for some Building 123 D&D reconnaissance level characterization sampling operations as required by 40 CFR 300.415 (b)(4)(ii); RFCA, Part 4 and Appendix 3, section 3.2; and as prescribed by DOE Decommissioning Handbook, Section 7.

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## Requirement(s)

SAPs [Sampling and Analysis Plans] will be required in support of pre-remedial characterization, waste volume calculations, waste characterization, verification of cleanup, and design data needs. Data quality objectives (DQOs) will be developed for all sampling activities. Sampling plans and related DQOs will be focused on collecting data to meet a specific need (i.e., to address a specific decision). Decision making needs will be linked directly to data collection.

Final RFCA: IGD, Appendix 3, 3.2

The following are elements of a comprehensive characterization program: 1. Review historical information. 2. Define characterization objectives. 3. Prepare a sampling and analysis plan. 4. Conduct sampling and measurement. 5. Review, analyze, and verify data.

DOE/EM-0142P, Decommissioning Handbook, Section 7.2

Work shall be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means.

10CFR 830.120(c)(2)(i) and DOE Order 5700 6.C, B, 1.a. (4)

Work shall be performed according to approved planning and technical documents and according to the prescribed sequence defined during planning when appropriate and stated....All work involving the generation, acquisition, and use of environmental data shall be planned and documented. The type and quality of environmental data needed for their intended use shall be identified and documented using a systematic planning process.

ANSI/ASQC-E4, 2.8.1

Environmental data operations shall be implemented according to the approved applicable *planning documents* and by qualified personnel. Deviations shall be documented and reported to management.

ANSI/ASQC-E4, 3.3.1

Activities affecting quality shall be prescribed by and performed in accordance with documented *instructions, procedures, or drawings* of a type appropriate to the circumstances. These documents shall include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished.

NQA-1-1994, 5

## Discussion

Reconnaissance characterization is required per the Rocky Flats Cleanup Agreement to determine the type and tractability of radiation and hazardous substances contamination, and physical hazards in buildings selected for D&D. Characterization data is generated through historical document reviews; interviews of RFETS employees whom had first-hand knowledge of facility operations and building construction and maintenance devices; physical inspections; and sampling and analysis of areas and items which are potentially radiologically or hazardous substance contaminated.

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The data is used to decide what type of safety systems and personal protective equipment are required for D&D workers, and to determine the type and quantity of waste that will be generated. Characterization data is also used to confirm the inventory of radioactive materials at RFETS, and to identify which items or structures require further characterization.

All sampling and analysis conducted to confirm and characterize radiological and hazardous substance contamination must be performed in accordance with a Sampling and Analysis Plan (SAP) that details the Data Quality Objectives (DQOs) for the analytes. DQOs ensure that decision making needs are linked directly to data collection. According to the RFCA, the purposes of the SAP include:

- to document the decisions/uses for which data are needed, and the decision process used to determine the specific sampling approach;
- to guide the field sampling crew in exactly what samples are to be collected, where and how they are to be collected, and what criteria trigger collection of additional or fewer samples;
- the analytical methods to be used, and the specific requirements of sample collection and handling for those methods.

Samples were collected in Building 123 from April to June 1997 to determine the presence of asbestos, lead, and beryllium contamination. Smears for hazardous chemical contamination (perchloric acid) and radiological surveys were conducted within the same time frame. All samples and initial radiological surveys, with the exception of asbestos, were collected without an approved SAP.

A Reconnaissance Level Characterization Plan for Building 123 (the equivalent of a SAP) was published in September, 1997, six months after sampling in Building 123 commenced. The purpose of the Characterization Plan is stated as:

"...is to outline the data requirements and methodology for Reconnaissance Level Characterization of Building 123."

The Plan further states:

"There are three aspects of the data life cycle that apply to the characterization process: Planning, Implementation, and Assessment. To produce a usable document (i.e., Reconnaissance Level Characterization Report) each of the three must be applied in sequence."

"The additional sampling/survey instructions would be developed into a Reconnaissance Level Characterization Plan (RLCP). The reconnaissance characterization information obtained by completing the RLCP feeds into the following documents: Reconnaissance Level Characterization Report (RLCR), Waste Management Plan, the Decommissioning Waste Stream and Residue Identification and Characterization Report, the project HASP, and the project's Final Survey Plan."

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The sampling and analysis data derived from operations conducted in accordance with the Reconnaissance Level Characterization Plan was to provide a baseline of data from which decisions regarding worker protection levels were made. In addition, data based upon and derived from these documents were to be used to determine waste types, volume, and subsequent disposal options. Dates of publication are provided in the following table to indicate the actual sequence of documentation.

Required Sequence	Document	Actual Sequence/ Publication Date
1st	*Reconnaissance Level Characterization Plan	3rd September 1997
2nd	*Reconnaissance Level Characterization Report	2nd August, 1997
3rd or subsequent	Health and Safety Plan	1st June, 1997
3rd or subsequent	Waste Management Plan	1st June, 1997

\*Neither file copies of the Plan nor the Report contained approval signatures.

For low-level radioactive waste destined for NTS, the Nevada Test Site Waste Acceptance Criteria (NTSWAC) requires that waste characterization methods and procedures shall ensure that the physical, chemical, and radiological characteristics of the waste are recorded and known during all stages of the waste management process. Further, the NTSWAC requires that when sampling and analysis is used for waste characterization, SAPs be referenced in Waste Profiles or characterization packages. The SAPS will be reviewed as necessary to ensure that they support the associated analytical data through appropriate sampling approaches, sample collection, sample handling, quality control, and documentation. The NTSWAC requires that SAPs contain DQOs.

Sampling and Analysis planning is required by the Rocky Flats Cleanup Agreement and by the NTSWAC. A review of Building 123 waste management and characterization planning documents revealed that the Reconnaissance Level Characterization for Building 123 D&D was performed and results were published without an approved plan. The quality of the data collected without an equivalent Sampling and Analysis Plan is indeterminate based upon the absence of sampling methodology, strategy, design, and of the lack of Data Quality Objectives.

## Recommendation

Evaluate and verify data derived from sampling operations and radiological surveys conducted without approved SAPs. Ensure future D&D characterization efforts are performed in the prescribed sequence to approved sampling and analysis plans with adequate data quality objectives.

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## 4.2 Deficiency No. 2 - CAP No. 98-XXXXXX

The Reconnaissance Level Characterization Plan was not reviewed and approved for implementation before the specific work commenced, nor is objective evidence available regarding the review and approval of the Reconnaissance Level Characterization Report (RLCR). The information supplied in the RLCR was used to identify hazards and to determine worker protection, as well as the types and quantities of waste generated from Building 123 D&D activities.

### Requirement(s)

Environmental data operations shall be implemented according to the approved applicable planning documents and by qualified personnel. Deviations shall be documented and reported to management.

ANSI/ASQC-E4, 3.3.1

Work-related instructions, procedures, and other forms of direction should be developed, verified, validated, and approved by technically competent personnel.

DOE Order 5700 6.C, B. 1., a (5)

The preparation, issue, and change of documents that specify quality requirements or prescribe activities affecting quality shall be controlled to assure that correct documents are being employed. Such documents, including changes thereto, shall be reviewed for adequacy and approved for release by authorized personnel.

NQA-1-1994, 6

### Discussion

The Reconnaissance Level Characterization Report (RF/RMRS-97-021) and the Reconnaissance Level Characterization Plan (RF/RMRS-97-045) submitted to the CERCLA Administrative Record and RMRS Records Management, respectively, did not have required approval signatures. These documents implemented requirements, provided planning, and furnished information and/or instruction.

An approval signature signifies that the appropriate reviews have occurred and that the information provided within is accurate and technically adequate for the stated purpose of the document.

Work in Building 123, in this case characterization and sampling operations, was performed without an approved plan or instructions. Further, it appears that data collected from characterization and sampling operations were reported in an unapproved document (Reconnaissance Level Characterization Report). The information in the Report was used to identify the chemical and radiological hazards from which to determine the level of worker protection required, and to estimate the type and quantity of waste that would be generated as a result of Building 123 D&D activities.

### Recommendation

Ensure that all D&D project documents receive the appropriate level of review for technical adequacy, accuracy, and completeness as signified by review and approval signatures.

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## 4.3 Deficiency No. 3 - CAP No. 98-XXXXXX

The assessment team found that six waste crates were generated during Building 123 D&D operations without 100% in-process waste inspection as required.

### Requirement(s)

The WCPP [Waste Certification Program Plan] shall provide for indoctrination and training, as necessary, of personnel performing activities affecting waste certification to ensure that suitable proficiency is achieved and maintained.  
NTSWAC 5.2

In-process inspections shall be conducted to ensure that specified process control requirements and/or WAC are achieved and maintained throughout the waste certification process.  
NTSWAC 5.10

Short term subcontractors may package wastes without the applicable waste handling courses if—and only if—a Construction Coordinator trained in waste handling AND a qualified waste inspector are present for the entire packaging operation.  
Low-Level Waste Management Plan, 4.9

### Discussion

A review of waste generated during Building 123 D&D activities revealed that six crates of waste were generated without required in-process waste inspection. Waste deposited in crates PO-3266, PO-3264, PO-3263, PO-3262, PO-3259, and PO-3257 was generated on 3/16/98 by subcontractors whom were not waste-generator qualified. A qualified waste inspector was not present during the generation and packaging of the referenced waste crates.

Waste Non-Conformance reports (NCRs) will be initiated and applied to the crates to ensure proper identification and segregation.

### Recommendation

Disposition the referenced NCRs through visual examination of waste package contents or through Real-Time Radiography. Submit NCR dispositions to the Waste Certification and Oversight for approval. Ensure all waste generators are trained and qualified and/or the presence of a qualified waste inspector during future D&D operations.

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## 4.4 Deficiency No. 4 - CAP No. 98-XXXXXX

The waste description for Waste Generator Instruction (WGI) GI9701230284 does not correlate to the waste description for the selected Item Description Code (IDC) as stated in Solid Radioactive Waste Packaging procedure WO-1100. Note: This CAP was issued to the RMRS Waste Management organization.

### Requirement(s)

Activities affecting the quality of the waste certification program shall be prescribed by and performed in accordance with instructions, procedures, or drawings. These documents shall include or reference appropriate quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished. NTSWAC 5.5

Controls shall be established to ensure the traceability of waste from the point of generation through shipment is maintained. Waste characterization documentation shall be traceable to the exact package in which the waste was placed. Controls shall be established to ensure that only correct and accepted items (e.g., waste containers and liners, cement, solidifiers) are used in the waste certification process. Identification shall be maintained on items or documents traceable to the items. NTSWAC, 5.8

Work shall be planned, authorized, and accomplished under controlled conditions using technical standards, instructions, procedures, or other appropriate means of a detail commensurate with the complexity and risk of the work. NTSWAC, 5.9

The IDC number is a three- or four-digit number assigned to a waste form type (e.g., plastics, dry combustibles, or light metals). These numbers allow for segregation of wastes into identifiable forms for ease of processing and also that appropriate matrix specific calibrations are used for when assessing nuclear material content during NDA. Low-Level Waste Management Plan 4.8.1

Waste categories shall be segregated and packaged separately (i.e., IDCs shall not be mixed...) Solid Radioactive Waste Packaging, 4.

Determine the IDC for the waste to be generated based on the valid process number and associated waste characterization information detailed in either the WSRIC Building Book or with the approved NRWOL. Solid Radioactive Waste Packaging, 5.1 [C]

Determine the rigid and fiberboard liner requirements for packaging the waste by using the IDC number and referring to Appendix 6, Rigid and Fiberboard Liner Requirements. Solid Radioactive Waste Packaging, 5.1 [D]

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## Discussion

A review of WGIs generated for Building 123 D&D operations revealed a discrepancy between the waste description on WGI No. GI9701230284 and the IDC (0438) designated for use on the WGI. IDCs are used to identify the physical form (matrix) of the waste, from which decisions are made regarding waste segregation to determine liner requirements for waste packaging. Further, IDCs are used to determine which matrix to calibrate to when assessing nuclear material content during NDA.

The IDC 0438 in Solid Radioactive Waste Packaging Procedure WO-1100 is described as: "Insulation: All insulation, fire blankets and sheet-rock to be discarded."

The waste description on WGI No. GI9701230284 reads: "Painted and non-painted light metal cabinets and countertops lined with non-friable asbestos and mastic containing asbestos."

Upon discussion with the Customer Service Organization, it appears that the designation of IDCs may—in practice—create obstacles to assigning accurate descriptions of the waste forms generated during D&D. Some unusual waste types generated during D&D activities may not be represented in the IDC tables supplied in Appendix 1 of WO-1100. Subsequently, Customer Service Representatives may be designating "best case" IDCs on D&D project WGIs, which do not accurately reflect the waste types.

The Nevada Test Site requires accurate waste characterization, identification, and process control throughout the waste management process. At RFETS, compliance with NTSWAC is demonstrated through adherence to the Low-Level Waste Management Plan and associated low-level waste packaging requirements and procedures. The Low-Level Waste Management Plan must accommodate low-level radioactive waste types that may not otherwise be addressed in packaging requirements documents and procedures.

## Recommendation

Revise the Low-Level Waste Management Plan, lower-tier requirements documents, and procedures to include instruction on the identification/characterization of (unusual) D&D wastes. Revise procedure 1-PRO-079-WGI-001, Waste Characterization, Generation and Packaging, to include instructions on the review of Waste Profiles prior to generating WGIs; and instructions on communication with the RFETS Waste Certification Official regarding identification and ultimate disposal of unusual waste types or waste streams prior to waste generating activities.

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**4.5 Deficiency No. 5 - CAP No. 98-XXXXXX**

The Building 123 D&D documents reviewed during the assessment, which prescribe work and/or specify quality requirements, are not controlled in accordance with applicable RMRS document control procedures.

**Requirement(s)**

The preparation, issue, and change of documents that specify quality requirements or prescribe activities affecting quality shall be controlled to assure that correct documents are being employed. Such documents, including changes thereto, shall be reviewed for adequacy and approved for release by authorized personnel.  
NQA-1-1994, 6

This document applies to RMRS personnel involved in the preparation/use of RMRS documents for quality affecting activities or processes.  
QA-05.01, DC-06.01

**Discussion**

A review of ten Building 123 D&D project documents revealed that several documents which prescribe activities, and their subsequent revisions, were not submitted to RMRS Document Control for appropriate distribution and revision control. Document history files, which include review and comment sheets, were not submitted to RMRS Document Control for most of the Building 123 project documents reviewed.

The following Building 123 project documents are out of compliance with RMRS Document Control procedures QA-05.01 and DC-06.01:

Number	Name	Specifies QA Requirement?	Prescribes Activities?	Deficient Condition
RF/RMRS-97-0021	Waste Management Plan Building 123	yes	yes	Not submitted to RMRS DC No controlled distribution No history file
RF/RMRS-97-029	Waste Management Plan for Building 123, Rev. 1	yes	yes	Not submitted to RMRS DC No controlled distribution No history file
RF/RMRS-97-045	Reconnaissance Level Characterization Plan for Building 123	yes	yes	Not submitted to RMRS DC No controlled distribution No history file
RF/RMRS-97-082	Project Execution Plan Building 123 Decommissioning Project	yes	yes	Not submitted to RMRS DC No controlled distribution No history file
RF/RMRS-97-052	Closure Plan for Building 123 Components of RCRA Unit 40	yes	yes	Not submitted to RMRS DC No controlled distribution No history file
RF/RMRS-97-110	Close-out Radiological Survey Plan for the 123 Cluster - Revisions 0 through 3	yes	yes	Not submitted to RMRS DC No controlled distribution No history file

Uncontrolled document numbers were obtained from RMRS Document Control by document originators; however, the 'UN' designation was not applied to the documents. The use of uncontrolled document numbers does not satisfy document control requirements for the review, approval, distribution, revision, and maintenance of documents that specify quality requirements or prescribe activities.

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## Recommendation

Submit all Building 123 project documents that specify quality requirements or prescribe activities to RMRS Document Control in accordance with QA-05.01, Preparation and Control of RMRS Documents. Include document history files (review and comment sheets) and all subsequent revisions.

### 4.6 Deficiency No. 6 - CAP No. 98-XXXXXX

The EG&G Rocky Flats Plant Toxic Substance Control Act (TSCA) Management Plan, 1-10000-EWQA, and the Asbestos Waste Management procedure, 1-10000-TRM-WP-2401, are out of date. These documents no longer provide adequate instruction nor applicable requirements for the generation, handling, and storage of PCB and asbestos-contaminated waste at RFETS. Note: This CAP was issued to the RMRS Waste Management organization.

#### Requirement(s)

The preparation, issue, and change of documents that specify quality requirements or prescribe activities affecting quality shall be controlled to assure that correct documents are being employed.

NQA-1-1996, 6

Items and processes that do not meet established requirements, goals, or do not result in the anticipated quality should be promptly identified, documented, analyzed, resolved, and followed up.

DOE Order 5700 6.C A. 3. e.

Timeliness guidelines should be implemented for distribution of new or revised controlled documents.

DOE Order 5700.6C, A. 4. a. (3)

#### Discussion

Both revisions of the Waste Management Plan for Building 123 state that PCB and asbestos wastes will be packaged in accordance with 1-10000-EWQA, TSCA Management Plan and with 1-10000-TRM-WP-2401, Asbestos Waste Management, respectively. The referenced documents were effective February, 1993 (TSCA Management Plan) and July, 1992 (Asbestos Waste Management). These documents contain references to organizations which no longer exist (Waste Quality Engineering, Waste Guidance, etc.), forms which are no longer in use (Waste Processing Request Form #RF-46367) and superseded policies and/or canceled procedures.

#### Recommendation

Review and revise, as applicable, documents and procedures relating to the management, generation, handling, packaging, labeling, storage, and disposal of PCB and asbestos-contaminated wastes.

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## 4.7 Observation No. 1

It appears that waste from Building 123 D&D operations was characterized as low-level radioactive waste based upon a cost/benefit determination rather than analytical methods or process knowledge, as required by DOE Order 5820.2A and Nevada Test Site Waste Acceptance Criteria (NTSWAC).

### Requirement(s)

Technical and administrative controls shall be directed to reducing the gross volume of waste generated and/or the amount of radioactivity requiring disposal.  
DOE Order 5820.2A, Management of Low-Level Waste

Each DOE-low-level waste generator shall separate uncontaminated waste from low-level waste to facilitate cost effective treatment and disposal.  
DOE Order 5820.2A, Management of Low-Level Waste

Attention will be given to waste minimization, in this case, the effort will be to remove the areas of radiation contamination, while segregating the contamination from the bulk (uncontaminated) material.  
Final RFCA, Attachment 9, Waste Management

Waste characterization may be conducted using process knowledge, sampling and analysis, or a combination of both.  
NTSWAC 4.0

### Discussion

A Cost Benefit Analysis was performed and results were report February 11, 1998 for Building 123 Decommissioning Interior Wall Waste Determination. The report was forwarded via memorandum from RMRS Building 123 project management to Kaiser-Hill Project Management on February 12, 1998.

The cost benefit analysis was performed "to determine the most beneficial disposal method of the Building 123 interior walls." The analysis "compared all costs and impacts to characterize, remove, package and dispose of the interior walls as either low level ACM waste and low level non-ACM waste or as uncontaminated asbestos and industrial waste." The analysis results "clearly demonstrate the most beneficial method of disposal is low level waste."

Waste characterization is based upon waste content. The basis for determining waste content is sampling and analysis of the material with application of known well-tested technology, or by sufficient process knowledge including, but not limited to: the generator's knowledge of the physical, chemical, and radiological properties of the waste; historical records, historic analytical data, system descriptions, plans, and drawings, manufacturing specifications, mass balance documentation, literature searches, living memory, and procedures.

Cost benefit analysis is not an approved method of waste characterization.

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## 4.8 Observation No. 2

The Building 123 D&D Waste Management Plan and other waste planning and characterization documents were not reviewed by the appropriate waste program personnel.

### Requirements

Environmental data operations shall be implemented according to the approved applicable planning documents and by qualified personnel. Deviations shall be documented and reported to management.

ANSI/ASQC-E4, 3.3.1

Work-related instructions, procedures, and other forms of direction should be developed, verified, validated, and approved by technically competent personnel.

DOE Order 5700 6.C, B. 1., a (5)

Waste Management activities are subject to diverse requirements external to RFCA that are dependent upon the levels of radioactivity, the types of hazards and the management strategy employed. For that reason, the amount of waste anticipated from the activity must be evaluated so that onsite storage capacity, onsite or offsite treatment capability (as needed), and final offsite disposal options are identified. This evaluation is critical due to limited capacity for onsite storage, limited onsite and offsite treatment capabilities, restrictive waste acceptance criteria at currently licensed/permitted offsite disposal facilities, and the cost of waste management.

Final RFCA: IGD, Appendix 3, 2.6.1

### Discussion

This observation is made as a "best management practice," and is intended to be used as an example for discussion and consideration rather than an identification of a deficient condition.

Neither the Waste Management Plan for Building 123, the Reconnaissance Level Characterization Plan, nor the Reconnaissance Level Characterization Report were reviewed by low-level waste program personnel. Low level waste program personnel may have contributed significant guidance to Building 123 project management regarding the volume of waste, the type of waste, and the waste disposal options for Building 123 D&D operations.

Had RMRS low-level waste management personnel been consulted during the D&D planning stages, NTS Waste Profiles for Asbestos-contaminated radioactive waste may have been initiated sooner, thereby ensuring that all disposal criteria were met prior to the generation of this waste type.

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**5. REPORT REVIEW AND APPROVAL**

Prepared by: \_\_\_\_\_ Date \_\_\_\_\_  
C.A. Dingman, Lead Assessor  
RMRS Quality Assurance

Reviewed by: \_\_\_\_\_ Date \_\_\_\_\_  
Joe Anguiano, Assessment Team  
RMRS Quality Assurance

Reviewed by: \_\_\_\_\_ Date \_\_\_\_\_  
Greg Ward, Assessment Team  
RMRS Quality Assurance

Approved by: \_\_\_\_\_ Date \_\_\_\_\_  
J. M. Hernandez, Manager  
RMRS, Quality Assurance

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## APPENDIX A

### DOCUMENTS REVIEWED

- RF/RMRS-97-0021, *Waste Management Plan Building 123*, June 1997
- RF/RMRS-97-029, *Waste Management Plan for Building 123*, Revision 1, March, 1998
- RF/RMRS-97-012, *Proposed Action Memorandum for the Decommissioning of Building 123*, Revision 4, August 21, 1997
- RF/RMRS-97-045, *Reconnaissance Level Characterization Plan for Building 123*, September 1997
- RF/RMRS-97-021, *Reconnaissance Level Characterization Report for Building 123*, August 1997
- RF/RMRS-97-022, *Building 123 Decommissioning Project Health and Safety Plan*, Revision 1, February 5, 1998
- RF/RMRS-97-082, *Project Execution Plan Building 123 Decommissioning Project*, Revision 4, September 11, 1997
- RF/RMRS-97-052, *Closure Plan for Building 123 Components of RCRA Unit 40*, Revision 0, November, 1997
- RF/RMRS-97-110, *Close-out Radiological Survey Plan for the 123 Cluster*, Revision 1, January 1998
- 1-10000-TRM-WP-2401, *Asbestos Waste Management*, July, 1992.
- 1-10000-EWQA, *Toxic Substance Control Act Management Plan*, February 1993
- 1-F78-ER-ARP.001, *CERCLA Administrative Record Program*, Revision 1
- GI9701230284A & B, *Waste Generating Instruction*, December 22, 1997
- 98-004-WC&O, *Compliance Review Report for Building 123 Rocky Mountain Remediation Services Decontamination and Decommissioning*, February 16, 1998
- Administrative Record Data Preliminary Record Document Tally*, IHSS 121, Building 123, April 9, 1998
- Building 123 Decommissioning Interior Wall Waste Determination Cost Benefit Analysis*, February 11, 1998
- CLG-013-98 Memorandum, *Cost Benefit Analysis for Removal of Interior Walls, Building 123*, from Vern Guthrie to K.A. Dorr, February 12, 1998.
- KAD-015-98 Memorandum, *Building 123 Decontamination and Demolition Interior Wall Waste Determination*, from Kent Dorr to Gary Coles, February 10, 1998.
- Building 123 Document Summary*, Revision 9, March 31, 1998
- Waste Profile ARIR-89050438L, *Insulation*, Revision 0, September 2, 1997

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## APPENDIX B

### ASSESSMENT PERSONNEL AND PERSONNEL CONTACTED

The following personnel conducted this assessment:

Lead Assessor:	Cynthia Dingman	Independent Assessment	RMRS Quality Assurance
Assessment Team:	Joe Anguiano	Quality Engineer	RMRS Quality Assurance
	Greg Ward	Quality Engineer	RMRS Quality Assurance

The following personnel provided significant contributions to the conduct of the assessment:

Name	Organization	Participation
Aguilar, Paul	RMRS Low Level Waste Projects	1,2,3
Arnold, Pat	RMRS Waste Management	2,3
Aycock, Mary	SEG, Building 123 Characterization	2,3
Bentsen, Ernie	RMRS Environmental Coordinator	1, 2,3
Brooks, Mark	RMRS QA	1, 2,3
Chandler, Skip	RMRS Safety and Health	2
Church, Alan	RMRS Waste Management	2,3
Dieter, Thomas	RMRS Project Management	3
Geisinger, Greg	Horne Engineering, WCO	1,2
Guthrie, Vern	RMRS Project Management	1,2,3
Hopkins, Ted	RMRS Environmental Compliance	2,3
Hoyt, Dorthea	RMRS Engineering	1,2
Lobdell, Dean	RMRS Waste Management	2
Loewenberg, Terry	RMRS Low Level Waste Projects	1,2,3
Manzaneres, Kathy	RMRS Document Control	2
Massie, Jack	RMRS QA	1,2,3
McCafferty, Ruth	RMRS Safety and Health	2
Miller, John	RMRS Rad Engineering	2
Nelson, Mike	RMRS Construction Management	3
Prochazka, Mic	RMRS QA	2
Robbins, Jan	RMRS Administrative Record Coordinator	2
Salyers, Dan	RMRS Disposal Projects	2
Slueterbush, Mike	SEG, Asbestos Inspection	2
Smith, Craig	RMRS Customer Service Organization	2
Wheeler, Martin	RMRS Waste Management	2
Wolf, Kathy	RMRS Quality & Environmental Compliance	3

- 1 Entrance Meeting
- 2 Interview and/or evaluation contributor
- 3 Exit Meeting

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**cc:Mail for: Mary Aycock**

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**Subject:** Re: Response to Assessment No. 98-0131-RMRS  
**From:** Kent Dorr at mail6 4/17/98 9:49 AM  
**To:** Mary Aycock at MAIL9  
**To:** Vern Guthrie at Mail5  
**To:** Jack Massie at Charlie12

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Mary, from what I have been able to read of the incomplete and very subjective report/assessment, I concur w/ your write up. I will also be providing a response to the paper.  
Kent

Reply Separator

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**Subject:** Response to Assessment No. 98-0131-RMRS  
**Author:** Mary Aycock at mail9  
**Date:** 4/16/98 1:11 PM

I am writing this memo to request your concurrence with the following response to "Deficiency No. 1" as listed in the referenced report entitled "Independent Assessment No. 98-0131-RMRS Building 123 Decontamination and Decommissioning Waste Management Process. The deficiency states the following:

"Building 123 waste characterization was not performed according to approved planning and technical documents and was not performed according to the prescribed sequence. Deficiencies exist regarding data generated from sampling operations conducted without approved Sampling and Analysis Plans and associated Data Quality Objectives..."

We are contesting this Deficiency based on the following facts:

1. At the time of initial characterization of Building 123, volumes of historical data were compiled showing asbestos, lead, radiological, and hazardous chemical sampling data which had been collected prior to 1997. Individual characterization plans, including signed radiological survey instructions were prepared based on this review and exist in the project files. These project files, which include detailed instructions for sampling activities, were not reviewed as part of the referenced assessment. A listing of the "approved planning and technical documents" used for characterization of Building 123 are attached.

2. In addition to attached planning and technical documents being in place in March of 1997, an "Approved Sampling and Analysis Plan" as defined by CERCLA (and outlined in RFCA, Appendix I under Guidance for Conducting Remedial Investigation and Feasibility Studies Under CERCLA, EPA, 1988a) was NOT required for sampling construction debris (asbestos and paint chips) or media associated with D&D actions for the building structure. The SAP requirement was defined by RMRS and K-H Compliance to be for "environmental samples" (i.e. soil and groundwater) which is why a SAP was written for the B123 Under Building Contamination (IHSS 121 and 148), but not for the building itself.

Please respond and let me know if you agree with our interpretation of the requirements which were in place in March of 1997, when initial characterization of Building 123 began.

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25/25