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APPENDIX 3

IMPLEMENTATION GUIDANCE DOCUMENT

ELECTRONIC COPY

**Rocky Flats Cleanup Agreement, Appendix 3
RFCA Implementation Guidance Document
Final**

**A Working Group Product of
CDPHE
DOE RFFO
EPA
Kaiser-Hill
RMRS**

July 1999

TABLE OF CONTENTS

1. INTRODUCTION.....	1-1
1.1. SCOPE AND PURPOSE OF ROCKY FLATS CLEANUP AGREEMENT AND IMPLEMENTATION GUIDANCE DOCUMENT.....	1-1
1.2. ORGANIZATIONAL AND FUNCTIONAL RESPONSIBILITIES.....	1-2
1.2.1. CDPHE Internal Organization and Project Coordinators.....	1-3
1.2.2. DOE Internal Organization and Project Coordinators.....	1-3
1.2.3. EPA Internal Organization and Project Coordinators.....	1-4
1.3. ENFORCEABILITY OF RFCA, ATTACHMENTS, APPENDICES, AND IGD.....	1-4
1.4. OVERVIEW OF THE IGD.....	1-4
2. PROJECT SCOPING AND REGULATORY INTEGRATION	2-1
2.1. OUTLINE FOR PROJECT SCOPING.....	2-1
2.2. SCOPING PROCESS.....	2-2
2.3. IDENTIFICATION OF SCOPE AND AUTHORITIES.....	2-3
2.4. DECISION MAKING UNDER RFCA.....	2-4
2.5. AUTHORITIES AND SCOPE EXTERNAL TO RFCA.....	2-5
2.5.1. Waste Management.....	2-7
2.5.2. Water.....	2-9
2.5.3. National Environmental Policy Act.....	2-11
2.5.4. Air.....	2-12
2.5.5. Ecological Concerns.....	2-13
2.5.6. Health and Safety.....	2-14
3. TECHNICAL APPROACH AND PROCEDURES	3-1
3.1. ENVIRONMENTAL RESTORATION PROCESS AND DOCUMENTS.....	3-1
3.1.1. Interim Measure/Interim Remedial Action Decision Documents.....	3-4
3.1.2. Proposed Action Memorandum.....	3-6
3.1.3. Emergency Removal Actions.....	3-9
3.1.4. RFCA Standard Operating Protocols.....	3-9
3.1.5. No Further Action Decisions.....	3-11
3.1.6. Proposed Plans and Corrective Action Decision/Record of Decision.....	3-13
3.1.7. RCRA Facility Investigation/Remedial Investigation Process.....	3-16
3.1.8. Sampling and Analysis Plans and Data Quality Objectives.....	3-16
3.1.9. Corrective Measures Study/Feasibility Study.....	3-19
3.1.10. Technical Memoranda.....	3-19
3.1.11. RCRA Closure.....	3-20
3.1.12. Closeout Reports.....	3-21
3.1.13. Project Cost Summary.....	3-22
3.2. DECONTAMINATION AND DECOMMISSIONING.....	3-23
3.3. INTEGRATION OF DECONTAMINATION AND DECOMMISSIONING AND ENVIRONMENTAL RESTORATION.....	3-23
3.4. DATA MANAGEMENT AND QUALITY ASSURANCE/QUALITY CONTROL.....	3-24
3.4.1. Data Management.....	3-24
3.4.2. Data Quality.....	3-25
3.5. ARARS AND RFCA PERMIT WAIVER.....	3-25
3.5.1. ARARs List.....	3-27
3.5.2. Project-Specific ARARs Analysis.....	3-27
3.5.3. Exemption from Administrative Requirements of ARARs.....	3-27

3.5.4.	<i>RFCA Permit Waiver</i>	3-28
3.6.	RISK EVALUATION	3-28
3.6.1.	<i>Implementation of Risk Assessment Methodologies Within the RFCA Framework</i>	3-29
3.6.2.	<i>Environmental Restoration Ranking</i>	3-30
3.6.3.	<i>Comprehensive Risk Assessment</i>	3-30
3.6.4.	<i>Radiological Dose Evaluations</i>	3-31
3.6.5.	<i>Cumulative Effects between Dose and Risk</i>	3-31
3.7.	THE ACTION LEVELS AND STANDARDS FRAMEWORK	3-31
3.7.1.	<i>ALF Background</i>	3-31
3.7.2.	<i>Application of the Action Levels to Trigger Interim Actions</i>	3-32
3.7.3.	<i>Performance Objectives</i>	3-37
3.8.	ANNUAL REVIEWS AND UPDATES	3-37
3.8.1.	<i>Annual Updates of the Environmental Restoration Ranking</i>	3-37
3.8.2.	<i>Annual Updates for the Historical Release Report</i>	3-37
3.8.3.	<i>RFCA Annual Review</i>	3-38
3.8.4.	<i>RFCA Biennial Review</i>	3-40
3.9.	DISPUTES	3-40
3.9.1.	<i>Disputes Regarding Decisions By Lead Regulatory Agencies</i>	3-41
3.9.2.	<i>Disputes Regarding Additional Work Required Under CERCLA</i>	3-42
3.9.3.	<i>Disputes Regarding Budget and Work Planning</i>	3-42
3.9.4.	<i>EPA-State Disputes Regarding Site-wide Issues</i>	3-42
3.9.5.	<i>Disputes Regarding Overall Direction of Proposed Work</i>	3-45
3.10.	MODIFICATION OF DECISION DOCUMENTS	3-45
3.10.1.	<i>Major Modifications</i>	3-45
3.10.2.	<i>Minor Modifications</i>	3-47
3.10.3.	<i>Field Modifications</i>	3-47
3.11.	NPL DELISTING	3-48
3.12.	SOIL MANAGEMENT	3-48
3.13.	WATER MANAGEMENT	3-49
3.14.	INTEGRATED MONITORING PLAN	3-49
3.14.1.	<i>Surface Water Monitoring</i>	3-50
3.14.2.	<i>Air Quality Monitoring</i>	3-50
3.14.3.	<i>Ecological Monitoring</i>	3-51
3.14.4.	<i>Groundwater Monitoring</i>	3-51
4.	ADMINISTRATION	4-1
4.1.	BUDGET PLANNING AND EXECUTION	4-1
4.1.1.	<i>Executive Budget Formulation and Transmittal</i>	4-3
4.1.2.	<i>Congressional Action</i>	4-3
4.1.3.	<i>Budget Execution and Control</i>	4-5
4.2.	PROJECT PLANNING AND BUDGET PROCESS	4-5
4.2.1.	<i>Project Planning/Project Scoping</i>	4-5
4.3.	REGULATOR INTERACTION IN THE BUDGET AND PLANNING PROCESS	4-8
4.3.1.	<i>FY Activities</i>	4-8
4.3.2.	<i>FY+1 Activities</i>	4-8
4.3.3.	<i>FY+2 Activities</i>	4-9
4.3.4.	<i>Roles and Responsibilities</i>	4-9
4.3.5.	<i>Cost Savings Initiatives and Productivity Improvements</i>	4-10
4.4.	ADMINISTRATIVE RECORD/RECORDS MANAGEMENT/DOCUMENT CONTROL	4-10
4.4.1.	<i>Administrative Record</i>	4-10
4.4.2.	<i>Records Management</i>	4-11
4.4.3.	<i>Document Control</i>	4-12
4.5.	REPORTING	4-12

5. PUBLIC INVOLVEMENT AND STAKEHOLDER SUPPORT.....	5-1
5.1. BACKGROUND.....	5-1
5.2. PUBLIC INVOLVEMENT OBJECTIVES	5-1
5.3. PUBLIC INVOLVEMENT PLANNING.....	5-2
5.4. PUBLIC INVOLVEMENT TOOLS.....	5-3
5.5. CONTACT NUMBERS.....	5-4
6. REFERENCES.....	6-1

APPENDICES

Appendix A	RFETS Environmental Checklist
Appendix B	Preparation of an Interim Measure/Interim Remedial Action
Appendix C	Preparation of An ER Proposed Action Memorandum Document
Appendix D	Preparation of an RFCA Standard Operating Protocol Document
Appendix E	No Further Action Development Schedule
Appendix F	Environmental Data Management
Appendix G	Proposed Plan and CAD/ROD Schedule
Appendix H	Generic RCRA Facility Investigation/Remedial Investigation Schedule
Appendix I	Outline of Sampling and Analysis Plan
Appendix J	Corrective Measures Study/Feasibility Study Preparation
Appendix K	Master List of Potential ARARs
Appendix L	Summary of Risk Assessment Methodology for RFETS
Appendix M	Action Levels for Radionuclides in Soils
Appendix N	Programmatic Preliminary Remediation Goals Tables
Appendix O	Process Description for Evaluating Groundwater Impacts to Surface Water and Ecological Resources
Appendix P	Methodology for Updated Environmental Restoration Ranking
Appendix Q	Example of Historical Release Report Update
Appendix R	Administrative Record Document Identification

FIGURES

<u>Figure</u>		<u>Page</u>
2-1	Primary Oversight and Facility Disposition Flow	2-7
3-1	Environmental Restoration Process Flow	3-3
3-2	Interim Measures/Interim Remedial Action Process	3-5
3-3	Proposed Action Memorandum Process	3-8
3-4	Emergency Removal Action	3-10
3-5	Decision Points for NFA Recommendations	3-12
3-6	RCRA Facility Investigation/Remedial Investigation Process.....	3-17
3-7	Data Management and Closure.....	3-26
3-8	Application of Groundwater Action Levels Through the Integrated Monitoring Plan	3-34
3-9	Evaluation Options After Data Point Comparison	3-36
3-10	Disputes Regarding Decisions by the Lead Regulatory Agency	3-43
3-11	Disputes Regarding Budget and Work Planning	3-44
3-12	EPA/CDPHE Disputes Regarding Sitewide Issues	3-46
4-1	General Timeline for Budget, ISB, RFCA Milestones and K-H Performance Measures.....	4-2
4-2	The Federal (DOE) Budget and Planning Execution Process	4-3

ACRONYMS

AFP	Approved Funding Program
APO	Analytical Project Office
ALARA	As Low As Reasonably Achievable
ALF	RFCA Action Levels and Standards Framework for Surface Water, Groundwater, and Soils
ANSI/ASQC	American National Standard Institute/American Society for Quality Control
AOC	Area of Concern
APEN	Air Pollution Emission Notices
AR	Administrative Record
ARAR	Applicable or Relevant and Appropriate Requirement
ASD	Analytical Services Division
AST	Analytical Services Toolkit
ASTM	American Society of Testing and Materials
BRA	Baseline Risk Assessment
CAA	Clean Air Act and Amendments
CAD/ROD	Corrective Action Decision/Record of Decision
CAPCD	Colorado Air Pollution Control Division
CAMU	Corrective Action Management Unit
CDPHE	Colorado Department of Public Health and Environment
CDD	Closure Description Document
CEARP	Comprehensive Environmental Analysis and Response Program
C/ED	DOE Office of Communication and Economic Development
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHWA	Colorado Hazardous Waste Act
CMS/FS	Corrective Measure Study/Feasibility Study
COC	Chemical of Concern
COCs	Contaminants of Concern
CPB	Closure Project Baseline
CPS	Closure Project Schedule
CR	Continuing Resolution
CRA	Comprehensive Sitewide Risk Assessment
CWA	Clean Water Act
CWQCC	Colorado Water Quality Control Commission
CWTF	Consolidated Water Treatment Facility
D&D	Decontamination and Decommissioning
DMP	Data Management Plan
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
DOP	Decommissioning Operations Plan
DPP	Decommissioning Program Plan
DQO	Data Quality Objective
DRC	Dispute Resolution Committee

EDD	Electronic Data Deliverable
EDDIE	Environmental Data Dynamic Information Exchange
EE/CA	Engineering Evaluation/Cost Assessment
EPA	Environmental Protection Agency
ER	Environmental Restoration
ERA	Ecological Risk Assessment
ERAM	Ecological Risk Assessment Methodology
FFCA	Federal Facility Compliance Act
FIP	Field Implementation Plan
FSP	Field Sampling Plan
FY	Fiscal Year
GRA	General Response Actions
HA	Hazard Analysis
HASP	Health and Safety Plan
HHRAM	Human Health Risk Assessment Methodology
HPGe	High Purity Germanium
HQ	DOE Headquarters
HRR	Historical Release Report
HWIR	Hazardous Waste Identification Rule
IAG	Interagency Agreement
IA IM/IRA	Industrial Area Interim Measures/Interim Remedial Action Decision Document
IDM	Investigative Derived Materials
IGD	Implementation Guidance Document
IHSS	Individual Hazardous Substance Site
IM/IRA	Interim Measure/Interim Remedial Action
IMP	Integrated Monitoring Plan
INV	Needs Further Investigation
ISB	Integrated Sitewide Baseline
ISEDS	Integrated Sitewide Environmental Data Systems
ISM	Integrated Safety Management
IWMP	Integrated Water Management Plan
LDR	Land Disposal Restrictions
LRA	Lead Regulatory Agency
M2SD	Mean Plus Two Standard Deviations
MAL	Master Activity List
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MCS	Management Control System
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NFA	No Action/No Further Action
NLR	No Longer Representative

NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRMP	Natural Resources Management Policy
OC	Office of Communication
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Act
OU	Operable Unit
PAC	Potential Area of Concern
PAM	Proposed Action Memorandum
PARCC	Precision, Accuracy, Representatives, Completeness, Comparability
PBD	Project Baseline Description
PCB	Polychlorinated Biphenyl
PCOC	Potential Chemicals of Concern
PEG	Program Execution Guidance
POC	Points of Compliance
PP	Proposed Plan
PP/CAD/ROD	Proposed Plan/Corrective Action Decision/Record of Decision
PPE	Personal Protective Equipment
PPRG	Programmatic Preliminary Remediation Goal
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QAPjP	Quality Assurance Project Plan
QC	Quality Control
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RF CAB	Rocky Flats Citizens Advisory Board
RFEDS	Rocky Flats Environmental Data System
RFETS	Rocky Flats Environmental Technology Site
RF FO	Rocky Flats Field Office
RFI/RI	RCRA Facility Investigation/Remedial Investigation
RFSIPI	Rocky Flats Sitewide Integrated Public Involvement Plan
RI/FS	Remedial Investigation/Feasibility Study
RPD	Relative Percent Difference
RPO	Representative Process Options
RSOP	RFCA Standard Operating Protocols
SAFER	Streamlined Approach for Environmental Restoration
SAP	Sampling and Analysis Plan
SCCB	Site Change Control Board
SEC	Senior Executive Committee
SEDRC	State-EPA Dispute Resolution Committee
SESEC	State-EPA Senior Executive Committee
SNM	Special Nuclear Material
SRA	Support Regulatory Agency

1. INTRODUCTION

1.1. SCOPE AND PURPOSE OF ROCKY FLATS CLEANUP AGREEMENT AND IMPLEMENTATION GUIDANCE DOCUMENT

The Rocky Flats Cleanup Agreement (RFCA) describes the regulatory framework for performing Environmental Restoration (ER) and decommissioning activities at the Rocky Flats Environmental Technology Site (RFETS or site; Site is considered the Comprehensive Environmental Response Compensation and Liability Act [CERCLA] definition as described in RFCA ¶25 bj and bl). RFCA replaces the 1991 Interagency Agreement (IAG) (DOE, 1991). RFCA parties are the Department of Energy (DOE) (the DOE Rocky Flats Field Office is herein denoted as DOE RFFO and DOE Headquarters is denoted as DOE HQ), the Environmental Protection Agency Region VIII (EPA), and the Colorado Department of Public Health and Environment (CDPHE). The RFCA requires the preparation of an Implementation Guidance Document (IGD). (See RFCA ¶78). The IGD is a tool that the RFCA parties use to guide the planning, decision making, and implementation of ER and decommissioning at the RFETS. The IGD is updated periodically as the site closure progresses to address modifications or changes to the RFCA process.

Consistent with RFCA ¶25aj, the IGD contains information on:

- Technical approach
- Content of specific decision documents
- Implementation of accelerated actions and decommissioning
- Risk assessment

The intended purposes of the IGD are to:

- Provide a “roadmap” for project managers
- Promote the understanding and compliance of non-RFCA authorities
- Standardize and expedite the planning and execution of work
- Provide additional interpretation/clarification of RFCA
- Illustrate the procedures for work prioritization and budgeting

Project management must address a variety of RFCA topics during the planning and execution of work. The IGD organizes RFCA subject matter in a manner that highlights relevant language that may be widely distributed throughout RFCA text. In this way, the IGD is a roadmap to relevant RFCA language that must be incorporated into the closure process.

While RFCA is a broad regulatory agreement that will be the primary authority for decommissioning and ER, other independent regulatory authorities must also be considered and addressed. As such, an additional purpose of the IGD is to identify regulatory authorities

external to RFCA, to promote their consideration, and to ensure that these external authorities are addressed.

The IGD provides sample schedules, sample tables of contents, and other discussion materials to standardize work planning and execution. Although the IGD is not enforceable, a commitment by the parties to accomplish work within the schedules provided will make parties accountable and expedite work. In addition, without a clear commitment from the parties to honor the scheduling developed during project scoping, it will be difficult to establish meaningful budgets that optimize funding.

Many complex technical and regulatory issues are within the scope of RFCA. It is impossible to craft a legal agreement that will, without interpretation, provide unambiguous language that covers every instance. For this reason, in some circumstances, the IGD will provide clarification to RFCA. The IGD will be particularly useful when procedural nuances have not been explicitly addressed; the IGD consensus process will determine appropriate terms under which the planning and execution of work will be accomplished on a project-specific basis.

Finally, the IGD provides illustrations to aid understanding of the RFETS work prioritization and budgeting process. This multi-step process represents a cooperative risk management exercise that is a vital element in the process to move RFETS through CERCLA; Resource Conservation and Recovery Act (RCRA); and Colorado Hazardous Waste Act (CHWA) process to closure.

1.2. ORGANIZATIONAL AND FUNCTIONAL RESPONSIBILITIES

One purpose of RFCA is to integrate CERCLA, RCRA, and CHWA regulatory authorities in a manner that minimizes conflict and expedites action. To that end, a stated objective of the IGD is to employ the same basic approach regardless of whether the work is related to the Industrial Area or the Buffer Zone. (See RFCA ¶78). RFCA also seeks to eliminate unnecessary tasks and duplicate reviews, and to minimize the impact of overlapping statutory authorities. (See RFCA ¶251 and ¶250).

RFCA provides for a Lead Regulatory Agency (LRA) and Support Regulatory Agency (SRA) and prescribes the responsibilities of each. In ¶25a, RFCA defines the LRA as:

...that regulatory agency (EPA or CDPHE) which is assigned approval responsibility with respect to actions under this Agreement at a Particular Operable Unit.... In addition to its approval role, the LRA will function as the primary communication and correspondence point of contact. The LRA will coordinate technical reviews with the Support Regulatory Agency and consolidate comments, assuring technical and regulatory consistency, and assuring that all regulatory requirements are addressed.

In ¶25br, RFCA defines the SRA as:

...the regulatory agency (EPA or CDPHE) that, for purposes of streamlining implementation of this Agreement, where applicable, shall defer exercise of its regulatory authority at one or more particular OUs (Operable Unit) until the completion of all accelerated actions. The SRA may, however, provide comments to the LRA regarding proposed documents and work.

In addition, ¶57 of RFCA obligates each party to prepare a written description of its internal organization to be included in the IGD. Each party must designate one or more individuals to perform the functions of project coordinator. This designation may be changed by written notification to the other parties. Each party must also specify one or more points of contact for sending, receiving, and distributing correspondence.

The following sections provide the required description of key functional areas for each RFCA party. Updates will be incorporated on an as-needed basis.

1.2.1. CDPHE Internal Organization and Project Coordinators

Project Coordinator: Steve Gunderson, (303) 692-3367

Address: Colorado Department Public Health & Environment
HMWMD-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Facsimile: (303) 759-5355

Dispute Resolution Committee: Howard Roitman
Senior Executive Committee: Pat Teegarden

1.2.2. DOE Internal Organization and Project Coordinators

Project Coordinator: Joe Legare, (303) 966-2282

Address: Rocky Flats Field Office
P.O. Box 928
Golden, Colorado 80402-0928

Facsimile: (303) 966-2995
Dispute Resolution Committee: Joe Legare

Senior Executive Committee: Jessie M. Roberson

1.2.3. EPA Internal Organization and Project Coordinators

Project Coordinator: Tim Rehder, (303) 312-6293

Address: 999 18th Street, Suite 500
Denver, Colorado 80202

Facsimile: (303) 312-6067

Dispute Resolution Committee: Max Dodson

Senior Executive Committee: Jack McGraw

1.3. ENFORCEABILITY OF RFCA, ATTACHMENTS, APPENDICES, AND IGD

CHWA permits, Clean Air Act (CAA) permits, National Pollutant Discharge Elimination System (NPDES) permits, and National Environmental Policy Act (NEPA) obligations are outside of RFCA jurisdiction. Regardless, the RFCA does provide mechanisms to integrate these permits with the activities that are subject to RFCA. Specifically, RFCA addresses:

- Remedial activities for Individual Hazardous Substance Sites (IHSSs)
- Decommissioning
- Federal Facility Compliance Act (FFCA) compliance for mixed wastes that are not proposed for treatment under the Site Treatment Plan
- Timely completion of milestones
- Closure of underground storage tanks

Within this realm, RFCA consists of a hierarchy of documents with distinct legal enforceability. The preamble to RFCA, the IGD, and the RFCA appendices are not enforceable, while the body of the RFCA and RFCA attachments are enforceable. Consistent with its title, the IGD is a guidance document and is not binding on DOE, CDPHE or EPA, but will be used by the parties for reviewing the adequacy of documents and work. Approved decision are enforceable.

1.4. OVERVIEW OF THE IGD

The IGD consists of five major sections: (1) Introduction; (2) Project Scoping and Regulatory Integration; (3) Technical Approach and Procedures; (4) Administration; and (5) Public Involvement and Stakeholder Support. The Introduction discusses the scope and purpose of the IGD, the organizational and functional responsibilities of each party, and the enforceability of the IGD. The process for project scoping and the impact of RFCA on

regulatory integration is discussed in Section 2. Section 3 provides technical and procedural detail related to the basic decision tools embodied in RFCA. Additionally, Section 3 presents a discussion of technical aspects of other supporting activities that are necessary components of the combined RCRA Corrective Action/CERCLA process. Examples include risk assessment and Applicable or Relevant and Appropriate Requirement (ARAR) analysis. Section 4 focuses on planning, budgeting, and administration of RFCA record keeping obligations. Processes to promote community involvement are presented in Section 5.

2. PROJECT SCOPING AND REGULATORY INTEGRATION

A stated goal of RFCA is to streamline the decision-making process. To accomplish this, RFCA clarifies each party's role in decision making and the legal and regulatory authorities under which the decisions are to be made. RFCA also seeks to create procedures that combine the CERCLA, RCRA, and CHWA requirements so that activities conducted pursuant to the RFCA will satisfy CERCLA, RCRA, and the CHWA statutory requirements without duplicative paperwork.

One mechanism to promote streamlined decision making is project scoping. RFCA defines scoping as:

... that period of time, from initial conceptual development of proposed work to DOE's formal request for approval to perform work on an activity, during which DOE consults with the regulators regarding the goals, methods, breadth and desired outcome for such activity. (See RFCA ¶25bk).

2.1. OUTLINE FOR PROJECT SCOPING

Project scoping offers an early opportunity for the parties to evaluate and refine technical attributes of the proposed project and to evaluate the regulatory framework, including permitting requirements, within which the project will be conducted. Additionally, project scoping is an opportunity to define how the variety of RFCA requirements and procedures will be implemented. Careful project scoping provides an opportunity to resolve many issues. The overall purpose, process, and factors for project scoping are outlined below.

Purpose and Approach

- To speed decision making and cleanup through
 - Early identification of regulatory, physical, and resource barriers
 - A common understanding of goal and path
- To create a better product by using the experience and wisdom of more people

Scoping Process

- Identify key parties
- Provide information on proposed activity to each party
- Meet to scope the project

Factors in Scoping

- Purpose and goal of project

- Regulatory authorities
 - RFCA
 - Authorities external to RFCA
- Decision-makers
 - EPA
 - CDPHE
 - DOE
 - Others
- Identify critical path events and time lines
- Integration issues
 - Waste management
 - Water management
 - Air
 - NEPA
 - Ecological concerns
 - Deactivation integration with decommissioning
 - Decommissioning integration with ER

2.2. SCOPING PROCESS

As the first step in the initiation of a RFCA activity, a scoping meeting will be held between EPA, CDPHE, and DOE RFFO to coordinate the RFCA requirements. Consistent with the RFCA, the LRA designation will be based upon the location at which the activity will be conducted. The purpose of the meeting is to discuss the regulatory requirements and to agree on the scope of the action and the content of the decision document. Consistent with RFCA ¶s 89 and 107, estimated agency review times for Interim Measures/Interim Remedial Actions (IM/IRAs) will be determined. This is not necessary when scoping a Proposed Action Memoranda (PAM) because RFCA is quite specific regarding review duration. Permits that may be needed or that would otherwise be required in the absence of CERCLA §121(e)(1) and the National Contingency Plan (NCP) will be identified during the meeting. At the meeting, the LRA will inform DOE RFFO of the specific performance standards to be addressed within the decision document. Performance standards are generally expected to be based on the RFCA Action Levels and Standards Framework for Surface Water, Groundwater, and Soils (ALF), ARARs, or the Building Disposition guidelines in Attachment 9 of RFCA.

During scoping, one of three permit-related actions may occur:

- (1) If the activity is exempt from permitting DOE RFFO will: 1) identify any permit that would have been required; 2) identify the standards, requirements or limitations imposed upon the response action; and 3) propose how the response action will meet the standards, requirements or limitations. (See RFCA ¶17). This process will be identical to and coincide with the identification and resolution of ARARs for the

response action. Consistent with RFCA ¶18, EPA and CDPHE will provide their positions on any permit waivers in a timely manner.

- (2) If permits are required for off-site activities, DOE RFFO will notify and, upon request, provide CDPHE and EPA with copies of the permit applications. (See RFCA ¶20).
- (3) CDPHE will determine the need for permits for any RFCA non-decommissioning activity conducted in the Industrial Area so that appropriate permit application documentation may be submitted with the decision document for concurrent public review and approval. (See RFCA ¶103 and ¶104).

2.3. IDENTIFICATION OF SCOPE AND AUTHORITIES

CERCLA, RCRA, and CHWA are the underlying regulatory authorities for RFCA. RFCA directly defines the limits of the CERCLA/RCRA/CHWA cleanup authorities and directly facilitates the integration of the CERCLA/RCRA/CHWA cleanup authorities where they may overlap. In the process of defining the limits of the CERCLA/RCRA/CHWA cleanup authorities embodied in RFCA, RFCA also serves to directly and indirectly clarify the interface of the CERCLA/RCRA/CHWA cleanup authorities with other regulatory authorities that are external to RFCA.

To illustrate this point, the following two lists were prepared. The first list outlines the scope of RFCA. The second list outlines regulatory authorities that are outside the scope of RFCA but will be integrated with RFCA activities. Where RFCA gives CDPHE procedural discretion, an item will appear on both lists and will be designated as "elective."

RFCA Scope

- Decommissioning
 - Decontamination
 - Demolition
 - Dismantlement
- Environmental Restoration
 - Accelerated actions
 - Remedial action
 - Remediation waste management in Corrective Action Management Unit (CAMU)
 - Risk evaluations
 - ARARs
- Corrective Action Decision/Record of Decision (CAD/ROD)
- Modifications to decision documents
- RCRA closure

- Permitted units (elective)
- Interim status closure (elective)
- Final disposition of idle equipment (elective)
- Budget planning – Closure Project Baseline (CPB)
- Administrative Record (AR)
- RFCA Dispute Resolution
- Public involvement

Scope External to RFCA

- Deactivation
- Non-hazardous radioactive waste management
- RCRA process waste management/Part B Permit
 - Waste storage
 - Treatment to meet land disposal restrictions (LDR)
 - On-site disposal (optional)
- RCRA closure
 - Permitted units (elective)
 - Interim status closure (elective)
 - Final disposition of idle equipment (elective)
- NEPA
- Air permitting and National Emission Standards for Hazardous Air Pollutants (NESHAP)
- NPDES (wastewater) and stormwater permitting
- Ecological concerns
- Natural resource damage assessment
- DOE Orders
- Toxic Substances Control Act (TSCA)

The RFCA scope and authorities are discussed in detail in Section 3.0 and associated appendices. The authorities and scope external to RFCA are discussed in Section 2.6.

2.4. DECISION MAKING UNDER RFCA

Although the underlying CERCLA and CHWA substantive authorities held by EPA and CDPHE remain unchanged by RFCA, the assignment of lead and support roles by RFCA has significant procedural effects on decision making and dispute resolution. One example is the consolidation of air permit review and public comment with the RFCA decision process for an accelerated action.

RFCA combines three administrative structures to accomplish the integration of underlying CERCLA and CHWA cleanup authorities. First, RFETS has been divided into the Industrial Area and the Buffer Zone. Second, the RFCA provides for a LRA and a SRA.

The combined effect of these RFCA administrative structures is to assign the lead role to CDPHE in the Industrial Area and the lead role to EPA in the Buffer Zone. (See RFCA ¶67). The third administrative structure creates a class of “site-wide” issues. A list of site-wide documents is provided in RFCA ¶119. In contrast to the Industrial Area/Buffer Zone division of authority described above, site-wide documents and activities are subject to joint review and approval by CDPHE and EPA. For example, the Integrated Monitoring Plan (IMP) is a site-wide document that integrates a variety of monitoring obligations imposed under RFCA authorities and under authorities external to RFCA. The IMP summarizes Site-wide monitoring requirements for air, surface water, groundwater, and ecology.

Figure 2-1 is a simplified illustration of RFCA’s assignment of lead responsibility (primary oversight) for activities at RFETS. It should be understood that Figure 2-1 includes both activities subject to RFCA authority and activities external to the RFCA, like deactivation, which is overseen by the Defense Nuclear Safety Board (DNFSB). Details of activities involving the DNFSB are provided in Appendix 1 of RFCA.

In addition, the figure has been simplified for clarity and may not accurately depict the relative amount of work (e.g., the amount of remediation in the Industrial Area versus the amount of remediation in the Buffer Zone) or accurately depict every jurisdictional possibility. For instance, only very limited circumstances may exist where EPA will be the lead for decommissioning conducted in the Buffer Zone. Finally, this figure shows that all activities conducted at the site are part of the CPB (formerly called the Integrated Site-wide Baseline), which is discussed in Section 4.1.

2.5. AUTHORITIES AND SCOPE EXTERNAL TO RFCA

As noted earlier, a number of regulatory authorities external to RFCA need to be integrated with RFCA activities. It will be necessary to coordinate these external authorities during project scoping and during project implementation if there are any deviations from the planned action location or process on which the initial coordination was based. (See Kaiser-Hill Company, LLC [K-H] Directive, “Site Activity Environmental Assessment.”) These external authorities can be critical to timely project implementation. To facilitate the coordination, RFETS has created an Environmental Checklist to ensure that each internal and external authority is considered (see Appendix A). Because the RFETS Environmental Checklist is revised periodically, it is necessary to obtain the most recent version from the RFETS NEPA group.

External regulatory authorities that need to be integrated into RFCA Activities are:

- Waste Management
- Water (Wastewater, Spills)
- NEPA
- Air
- Ecology

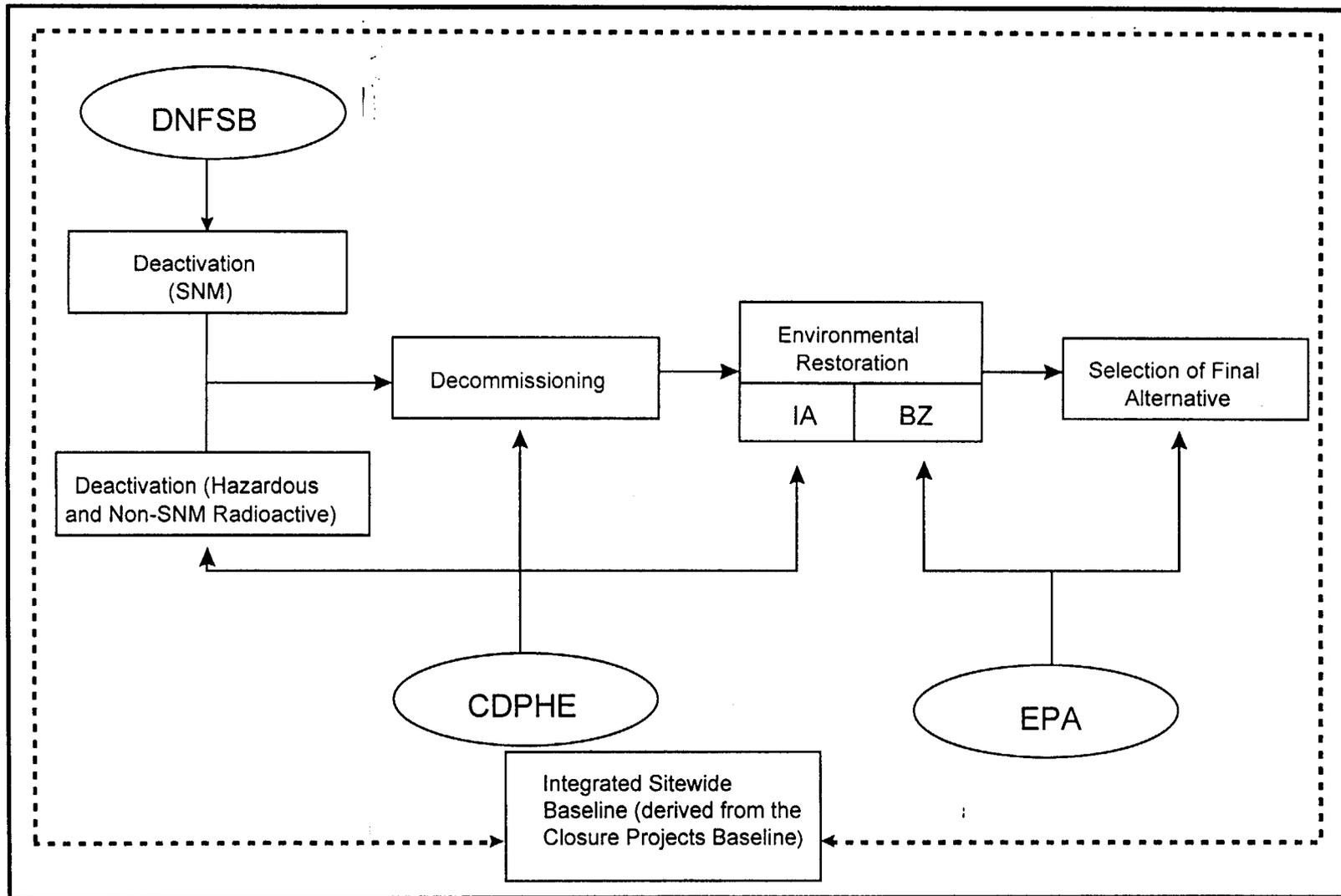


Figure 2-1 Primary Oversight and Facility Disposition Flow

KEY
 IA = Industrial Area
 BZ = Buffer Zone

- Health and Safety

Each of these authorities is discussed in the following sections.

2.5.1. Waste Management

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

Project-Specific Waste Management Strategy

Two approaches will help complete this evaluation:

- (1) Project-specific waste management strategy
- (2) CERCLA Permit waivers

Each are discussed in the following paragraphs.

During scoping it is necessary to identify a feasible strategy for long-term waste management and to provide project-specific funding to implement the strategy. This "projectization" approach should minimize the generation of "orphan" wastes with no identified long-term management alternative. The waste management strategy needs to address the following:

- Identification and quantification of each waste stream
- Segregation and staging
- Short-term storage
- Treatment
- Sampling and packaging to meet waste acceptance criteria
- If appropriate, an existing or proposed (new) contracting mechanism

This is not to say that long-term storage is not allowed. Instead, it obligates the project to identify and fund presently available long-term storage space or to fund and create new long-term storage space for those wastes where no other feasible management alternative is identified.

CERCLA Permit Waivers

CERCLA permit waivers are available to decommissioning activities, to ER activities in the Buffer Zone, and to limited ER activities in the Industrial Area. These waivers can streamline the approval of additional, protective storage capacity specifically designed to address the level of risk associated with the wastes. The basis for the waivers must be included in a submittal to CDPHE and EPA. See Section 3.5.4 for a complete discussion of permit waivers.

In addition, planning is underway to implement a CAMU for temporary waste storage as a contingency if RFETS can not meet the goals of the Site Closure Project Plan (currently called the 2006 Closure Project Baseline). When completed, the CAMU may accept remediation wastes generated from RFCA decommissioning and ER activities. Process wastes that are also hazardous wastes are not within the definition of remediation wastes and although not eligible for management in the CAMU may be co-located with remediation wastes in accordance with RFCA Appendix B. Similarly, some polychlorinated biphenyl (PCB) wastes (e.g., wastes generated from fluorescent light ballasts) will not be eligible for management in the CAMU. A variety of activities at the site involve disturbing and managing soils. Portions of the soil may be contaminated with hazardous or radiological constituents at varying levels. In many instances, management of the soils will be specifically addressed in a decision document or associated technical memoranda. In other situations (e.g., construction not associated with decommissioning or ER) there will be no RFCA decision document to cover the activity. In these situations, the soil should be managed in accordance with Section 3.12 of the IGD.

CERCLA Off-Site Rule

Wastes generated under RFCA/CERCLA authorities are subject to the CERCLA Off-Site Rule. (See RFCA ¶19 and 40 CFR § 300.440). The CERCLA Off-Site Rule requires regulatory approval of any off-site disposal facility prior to disposing wastes generated under CERCLA authority. The rule avoids having wastes from CERCLA-authorized actions contribute to present or future environmental problems by directing these wastes to management units determined to be environmentally sound and having no significant violations or uncontrolled releases. Verifications of CERCLA Off-Site Rule determinations will be accomplished as part of the Kaiser-Hill Team's Off-Site Waste Management program. If a facility does not have CERCLA approval, DOE RFFO will request approval through EPA. DOE RFFO must verify compliance with the Off-Site Rule prior to waste shipment. In addition, the determination of acceptability must be updated and documented periodically (i.e., every 6 months). EPA will make reasonable efforts to assist DOE RFFO with timely Off-Site Rule determinations.

LDR Mixed Wastes

For LDR mixed wastes, treatment will be covered under the appropriate decision documents and will not be added to the RFETS Site Treatment Plan unless The LDR waste would be managed in treatment systems implemented under the Site Treatment Plan, or they were not provided for in a decision document. The applicability of LDR treatment standards and the achievement of LDR compliance for the mixed wastes to which LDR treatment is applicable must be explicitly addressed in the appropriate decision document.

PCB Wastes

Wastes contaminated with PCBs will be generated by activities external to RFCA. Routinely generated, leaking fluorescent light ballasts that contain PCBs are fully regulated under TSCA and must be stored, inspected and disposed in accordance with the TSCA requirements. All PCB-containing ballasts removed during decommissioning of Type 1 buildings are also subject to TSCA regulation. Building types are described in the Decommissioning Program Plan (DPP) Section 3.2. RFETS also has two PCB-containing transformers in service. These transformers remain fully regulated by TSCA (administratively and substantively) unless and until they become subject to a decommissioning decision document.

If a decision document controlling the decommissioning of a Type 2 or Type 3 building specifically includes one or both of the transformers, management of the transformers must then be accomplished in a manner that attains the substantive attributes of the identified ARARs. Likewise, management of PCB light ballasts must also attain substantive ARARs. Full compliance with both substantive and administrative requirements for off-site PCB management is mandated when the PCB wastes are shipped off-site for treatment, storage, or disposal.

2.5.2. Water

Activities conducted pursuant to RFCA will generate water and wastewater that must be managed and, if necessary, treated at the appropriate facilities. In addition, each project may have to incorporate special considerations for stormwater management, spill controls and countermeasures, and other environmental protection measures.

Wastewater Management

Since 1979, RFETS has held a National Pollutant Discharge Elimination System (NPDES) permit regulating the discharge of treated wastewater into off-site waterways. A renewal of the current permit has been prepared, but has not been issued as of July 20, 1998. Generally, the NPDES permit implements the requirements of the Clean Water Act (CWA) and regulates the discharge of the site's wastewater treatment plant, Building 995, the release of

product water from Building 374, and storm water discharges. In addition to establishing the performance standards for Buildings 995 and 374, and limitations on specific parameters in the discharge, the permit also imposes a number of administrative requirements from employee training to pollution prevention and spill control practices described below. Presently, a range of wastewater treatment capability is available at RFETS, but the continued availability of these wastewater treatment capabilities is subject to change. Pursuant to RFCA, an Integrated Water Management Plan (IWMP) (RFETS, 1997) has been developed as a Site-wide document to evaluate short and long-term wastewater treatment needs. (See RFCA ¶119). As a reference source, the IWMP provides a variety of useful background information on RFETS water and wastewater management. The IWMP and updates should be reviewed during project scoping to determine if on-site wastewater treatment capacity is available for project activities.

As closure activities proceed at RFETS, and wastewater treatment capacity is gradually reconfigured or removed from service, each project will have increasing responsibility to provide project-specific water management and wastewater treatment capacity. To expedite any NPDES permitting that may be required, RFCA provides for a consolidated review process. (See RFCA ¶ 101 and ¶103). Depending on project complexity, the consolidated review process represents a commitment by EPA and CDPHE to perform review and public comment on permit applications concurrent with the accelerated action decision process. In addition, the consolidated review process is not supposed to require more time for approval than would otherwise be required under the IM/IRA or PAM process. (See RFCA ¶99).

Spill Prevention Control and Countermeasures/Best Management Practices Plan and Storm Water Pollution Prevention Planning

RFETS is subject to regulatory requirements to have a spill prevention program and to implement best management practices (BMPs) to prevent oil and hazardous substances, respectively, from entering waters of the United States. Under the CWA, a spill prevention plan is required to prevent the release of oil in harmful quantities, which are defined as follows:

For purposes of section 311(b)(4) of the Act, discharges of oil in such quantities that the Administrator has determined may be harmful to the public health or welfare or the environment of the United States include discharges of oil that:

- (a) Violate applicable water quality standards; or*
- (b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.*

BMPs are not specified in regulation, but, rather, rely on professional judgment as to the appropriate measures to take. BMPs that prevent stormwater from coming into contact with hazardous substances and barriers to prevent materials from entering surface waters are commonly employed under these requirements.

Other activities may be subject to the substantive requirements of the regulations as ARARs. In addition, some of the construction activity associated with decommissioning will be subject to select substantive requirements of the General Stormwater Permit for Construction Activities. By virtue of the CERCLA permit waivers (Section 2.6.1), formal notification under that General Permit is not required for decommissioning in the Industrial Area or accelerated actions conducted in the Buffer Zone.

Any construction activity where conditions exist that are different enough that it would be appropriate for an individual permit, may be subject to additional monitoring or substantive requirements not contained in the General Stormwater Permit for Construction Activities. Such conditions could include construction in a location contaminated from past industrial activities or where stormwater from the construction site comes into contact with industrial or process wastes. Such locations would have to be outside the Industrial Area, which is already covered by a stormwater permit. The general permit is designed for use where the primary contamination anticipated is suspended solids mobilized by precipitation. However, water that falls on the site as "stormwater" may remain stormwater. Each proposed construction activity must be evaluated individually, with particular attention to the location's proximity to contamination, the proposed time frame, and the type of construction.

Stormwater and groundwater accumulation may also fall under the Site's procedure for the management of incidental water, Control and Disposition of Incidental Waters (1-C91-EPR-SW.01 Rev. 2). The procedure establishes approved methods for disposing of water accumulated after storm events or as a result of seepage, and provides current information about organizations and points of contact.

2.5.3. National Environmental Policy Act

In accordance with RFCA ¶95 and the June 1994 DOE Secretarial Policy on NEPA, decision documents prepared under RFCA are to incorporate NEPA values. RFCA decision documents that are subject to public and/or agency review before the actions they describe are taken, ordinarily will not require separate RFETS NEPA documentation (e.g., a categorical exclusion or an environmental assessment). Those not subject to public review before action is taken, typically will require NEPA documentation. A draft of all RFCA decision documents must be submitted to the RFETS NEPA group for review to determine if:

- (1) Separate NEPA documentation is required, and
- (2) NEPA values have been adequately incorporated.

To ensure NEPA equivalence, it is also necessary to include a "no action" alternative in the alternatives analysis for all IM/IRAs, PAMs, Decommissioning Operations Plan (DOPs), and RFCA Standard Operating Protocol (RSOPs).

For decommissioning activities, it is expected that NEPA values will be incorporated into the DPP. Any decommissioning not covered by the DPP will be subject to the process described above for decision documents.

After consultation with the stakeholders, or as a matter of policy, DOE RFFO may choose to prepare separate NEPA documentation for an action. If separate NEPA documentation is required, submittal of a project to the RFETS NEPA group for review should be by letter, preferably with a completed environmental checklist. Environmental checklist forms are available from the RFETS NEPA group. NEPA documentation, if required, would be a categorical exclusion or an environmental assessment.

Many projects may be categorically excluded from the NEPA requirements unless there are factors that make a categorical exclusion inappropriate. Such factors include high levels of radiation, other risk factors, or impacts to wetlands, threatened and endangered species habitat, or other environmentally-sensitive areas. Projects that may be categorically excluded must still receive documented approval. If a project is not eligible for a categorical exclusion, an environmental assessment will be required.

2.5.4. Air

RFETS is subject to the Colorado Air Pollution Prevention and Control Act and implementing regulations. An operating permit for RFETS is currently under development by the Colorado Air Pollution Control Division (CAPCD). To expedite any air permitting that may be required, RFCA provides for a consolidated review process (See RFCA ¶101). The consolidated review process represents a commitment by EPA and CDPHE to conduct review and public comment on permit applications concurrent with the accelerated action decision process. In addition, the consolidated review process is not supposed to require more time for approval than would otherwise be required under the IM/IRA or PAM process (See RFCA ¶99).

The type of air permitting required is determined by an evaluation of the activity's potential to emit air pollutants and the site's total emission inventory. In general, activities with potential emissions of less than 1 or 2 tons per year, for the major pollutants, or other various thresholds for hazardous air pollutants are not subject to air permitting. In some cases, a commitment to abide by existing site procedures (e.g., dust control) can be sufficient to ensure that emissions remain below permitting thresholds. At higher levels of emissions, RFETS may be required to submit air permits and Air Pollutant Emission Notices (APENs). APENs are used by CDPHE to inventory emissions for planning purposes and attainment demonstrations. Modification to the RFETS Title V Operating Permit (or permit application) may be required. The regulations require that quantified emission estimates be included in the application.

Umbrella or “bubble” type permits can also be obtained. This type of permit allows RFETS contractors and subcontractors to conduct multiple excavation, clean-up, or demolition operations under a single permit that contains specified limits of annual pollutant emissions, scope definition, and control requirements. Grouping of multiple operations on a single permit is allowed by the CAPCD, provided aggregated sources are related. Once obtained, any project subject to the permit terms and conditions is required to document specified operation parameters to demonstrate compliance. The emission limitations established for bubble permits will allow for multiple projects annually. As long as the total permitted annual emissions are not exceeded and the controls specified in the permit are employed, no additional permitting or public comment is required. Questions and clarifications on air permit requirements should be directed to the RFETS air group.

2.5.5. Ecological Concerns

As a federal natural resource trustee, DOE RFFO (and its contractors) must act in the public interest with regard to conservation of natural resources. As a result of this responsibility, to ensure compliance with applicable regulatory requirements, ecological concerns must be addressed during project planning at RFETS. Compliance with the Endangered Species Act; Fish and Wildlife Coordination Act; Migratory Bird Treaty Act (MBTA); CWA; and the Colorado Nongame, Threatened, and Endangered Species Act is required for RFETS activities. Several DOE policies and orders also mandate protection of ecological resources.

Many wildlife species at RFETS are managed and protected by the State of Colorado. Penalties for violations of state wildlife protection laws can include: fines, compensation for damages, or imprisonment. The U. S. Fish and Wildlife Service administers the Endangered Species Act, the Fish and Wildlife Coordination Act, and the MBTA. These acts provide protection of ecological resources from harm. The regulatory agency with the lead for making decisions related to wildlife issues should be determined during project scoping.

Pursuant to the CWA, both the EPA and the U.S. Army Corps of Engineers (USACE) have jurisdiction over activities that affect RFETS wetlands. Generally, the EPA has jurisdiction over CERCLA activities, and the USACE has jurisdiction over non-CERCLA activities. The EPA reserves the right to make all jurisdictional determinations. If a project will affect wetlands, a mitigation plan must be developed and in place prior to beginning work. In addition to CWA requirements, DOE RFFO is required to protect wetlands under Executive Order 11990. Finally, wetlands impacts must be considered whenever water treatment and operations practices are modified or eliminated.

Prior to the start of work, RFETS activities must be evaluated by a qualified ecologist for potential to impact the Preble’s Meadow Jumping Mouse (a resident threatened species), migratory birds, threatened or endangered species and their habitats, and wetlands. Any outdoor work area must be surveyed in accordance with procedures 1-D06-EPR-END.03 (K-H, 1994a) and 1-G98-EPR-END.04 (K-H, 1994b).

If a protected species is found to be present at a work site, work may be delayed until consultation with the U. S. Fish and Wildlife Service has been completed. This is now particularly true if work will be in or may affect riparian areas on the site, because the Preble's Meadow Jumping Mouse, a species that lives in these areas, is listed as a threatened species (63 FR 26517-26530, May 13, 1998).

Other resource protection issues of importance at RFETS include weed control and revegetation. Weed control on federal lands is mandated by the Federal Noxious Weed Act, the Colorado Weed Management Act, and the Jefferson County Undesirable Plant Management Plan. In areas where long-term soil disturbances will occur, or where revegetation will be done, projects must budget appropriate funds to meet weed control needs. Revegetation with native plant species and limitation of the size of a surface disturbance is controlled by DOE Order 6430.1A (DOE, 1989).

The Natural Resources Management Policy (NRMP) establishes natural resource policies for management of the Buffer Zone. It is based on the open space cleanup objective expressed in the RFCA Vision. The NRMP will guide selection and funding of Buffer Zone management activities while the Site is being cleaned up under RFCA.

Consistent with the RFCA Vision, DOE RFFO will manage resources during cleanup to preserve currently available options for Buffer Zone open space use to facilitate post-closure resource management discussions. In addition, the NRMP will establish policies for addressing natural resource damage issues under CERCLA.

2.5.6. Health and Safety

The regulatory authorities for worker health and safety during activities conducted pursuant to RFCA are the Occupational Safety and Health Act (OSHA) requirements found at 29 CFR Parts 1910 and 1926 and DOE Order 440.1 (DOE, 1995h). DOE Order 440.1, entitled "Worker Protection Management", obligates DOE RFFO's contractors to comply with the OSHA 29 CFR Parts 1910 and 1926 requirements. The requirements embodied in the OSHA regulations are addressed in the RFETS Health and Safety Practices manual (K-H, 1997), specifically HSP 21.03.

RFETS has an Integrated Safety Management (ISM) program that is implemented for each work activity. Consistent with the site's ISM program, hazards associated with executing the work are identified and controls are put in place to mitigate the hazards to the performance of any field work.

3. TECHNICAL APPROACH AND PROCEDURES

All remediation work at RFETS will be conducted as an accelerated action for one or more IHSSs or buildings, a closure plan for RCRA regulated units, or pursuant to a CAD/ROD for an Operable Unit (OU) (See RFCA ¶96). Decommissioning will be performed as described in a PAM, IM/IRA (described in the DPP), or as described in individual DOPs for more complex activities. Deactivation, decontamination, and decommissioning will be integrated with ER to ensure efficiency between programs.

To expedite remediation work and maximize accelerated risk reduction, DOE RFFO will make extensive use of accelerated actions for buildings, IHSSs, Potential Areas of Concern (PACs), and Under Building Contamination (UBC). For ease of discussion, "IHSSs," "PACs," and "UBCs" will all be termed as "IHSSs" for the remainder of this document.

The focus of the RFETS ER Program is on cleanup. The decision process will be developed using a bias for action that: (1) identifies IHSSs or evaluates the Site for risk, (2) determines whether a cleanup is necessary, and if so, evaluates whether the IHSS is appropriate for an accelerated action, and (3) ranks the area relative to other IHSSs. The ER process flow is shown in Figure 3-1.

Since 1995, the ER Ranking has been the tool to implement this bias for action by focusing on addressing high-risk sites before low-risk sites, thus more quickly reducing risks to human health and the environment.

In the future an opportunistic approach will evaluate the accessibility of an area and what, if any, potential future impacts exist due to other remedial actions in the area.

During the remediation of the IA, ER representatives will be coordinating with decommissioning representatives as early as possible to understand the building history, remediation schedule, and what IHSS, including PAC and UBC conditions, may exist. Early coordination will increase efficient use of resources. However, any time it is determined that an IHSS is impacting human health or the environment, such that immediate action is warranted, then action will be taken as soon as possible.

Following completion of all accelerated actions, including decommissioning, the residual risks in the Industrial Area and the Buffer Zone will be evaluated. (See Section 3.6.3).

3.1. ENVIRONMENTAL RESTORATION PROCESS AND DOCUMENTS

The IAG (DOE, 1991) created 16 OUs. By the time RFCA was signed in 1996, OUs 11, 15, and 16 had been closed by means of CAD/RODs. Attachment 1 to RFCA and a prior modification to the IAG consolidated the remaining thirteen OUs into seven OUs.

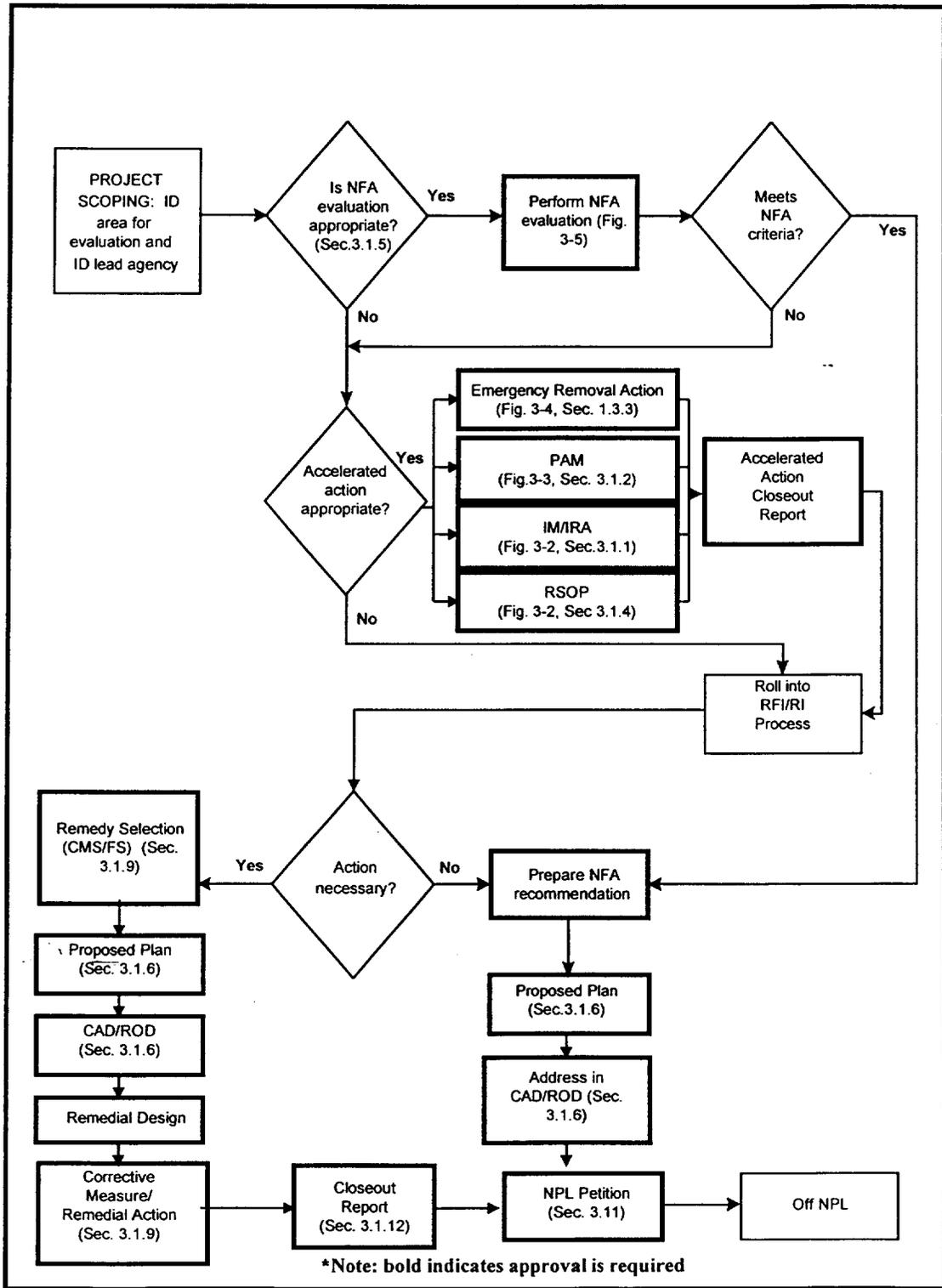


Figure 3-1 Environmental Restoration Process Flow

Development of RFETS-specific documents is described with accompanying flow charts in the following sections. Development of standard CERCLA documents will be in accordance with the NCP and other available EPA guidance documents.

In developing any RFETS decision document, DOE RFFO will meet with the regulators to present the approach to a given remedial action. (See Section 2.0.) Once the approach is agreed upon by all parties, development of the decision document will proceed as outlined below.

RFCA identifies several types of decisions for action or no action:

- IM/IRAs will be developed when a formal evaluation of remedial options is necessary or remedial activities are estimated to require more than six months from commencement of physical work to completion. The requirements for IM/IRAs are discussed in Section 3.1.1 and Appendix B.
- PAMs will be used where remedy selection is straightforward, and remedial activities are estimated to take less than six months from commencement of the physical work to completion. The requirements for PAMs are described in Section 3.1.2 and Appendix C.
- Emergency Removal Actions are discussed in Section 3.1.3.
- No Action and No Further Action decisions for IHSSs will be documented in updates to the Historical Release Report (HRR), as described in Section 3.1.5 and detailed in Attachment 6 to RFCA.
- CAD/RODs have been or will be developed by DOE RFFO for OUs 1, 3, 5, 6, 7, 11, 15, and 16. Future CAD/RODs will be developed to document the final corrective action/remedial decision for the Buffer Zone and the Industrial Area. Development of CAD/RODs will follow EPA guidance. The RFCA approach to CAD/RODs is described in Section 3.1.6.

The RFCA also identifies RSOPs that are applicable to routine ER and/or decommissioning activities that DOE RFFO may repeat without obtaining additional approval. Initial approval of an RSOP will be through the IM/IRA process (See RFCA ¶25bo). The requirements for RSOPs are addressed in Section 3.1.4 and Appendix D.

- DOPs for complex decommissioning activities will be reviewed by the LRA via either the PAM or IM/IRA review process. (See RFCA: ¶121).

Supporting documents identified in RFCA that may be required for an IHSS to reach the decision document stage, may include RCRA Facility Investigation/Remedial Investigation (RFI/RI) work plans and reports and Corrective Measure Study/Feasibility Studies (CMS/FSs), which are part of the CAD/ROD process. Other supporting documents identified in RFCA are Sampling and Analysis Plans (SAPs), Technical Memoranda (TM),

Closeout Reports, and Treatability Study Reports where necessary. The development of SAPs is discussed in Section 3.2 and the development of TMs is discussed in Section 3.1.9.

Appendices to this document are included that discuss the development of RFETS-specific documents. When documents will be developed using the standard CERCLA approach, the EPA guidance for developing these documents is cited.

The document review process is similar for all of the major documents identified in RFCA. Specific document review processes and times are found in Part 9 of RFCA. Generic schedules and suggested document formats are included with the IGD appendices.

During the public comment period, and after consultation with and approval by the LRA, DOE RFFO may initiate certain preliminary activities. These preliminary activities may include conducting appropriate sampling in accordance with the approved SAP and conducting any studies and administrative activities prerequisite to implementing the accelerated action.

If public comments are received, the approved Responsiveness Summary will be placed in public information repositories before the accelerated action is initiated except with regard to the preliminary activities described above. DOE RFFO will keep the LRA apprised of the progress of the activities required for implementation of the accelerated action through the monthly RFCA project coordinators meeting and the quarterly RFCA progress reports. (See RFCA ¶s 262 and 263).

3.1.1. Interim Measure/Interim Remedial Action Decision Documents

IM/IRAs apply to interim remedial activities or removal actions that are estimated to take more than six months from the commencement of physical work to completion. (See RFCA ¶107). Remedial activities performed under an IM/IRA will, to the extent practicable, be consistent with and contribute to the efficient performance of any anticipated long-term remedial action. The IM/IRA may also serve as a RCRA Part B permit modification, when indicated in the document. If CDPHE determines that an activity constitutes a RCRA Class 3 permit modification, the IM/IRA will be subject to the public comment process outlined in RFCA ¶108. The IM/IRA process is shown in Figure 3-2. Section 3.10 describes the process for modifying approved decision documents.

IM/IRAs will also be developed for accelerated actions where several remedial options are available. These IM/IRAs will evaluate multiple alternatives and justification of the selected alternative.

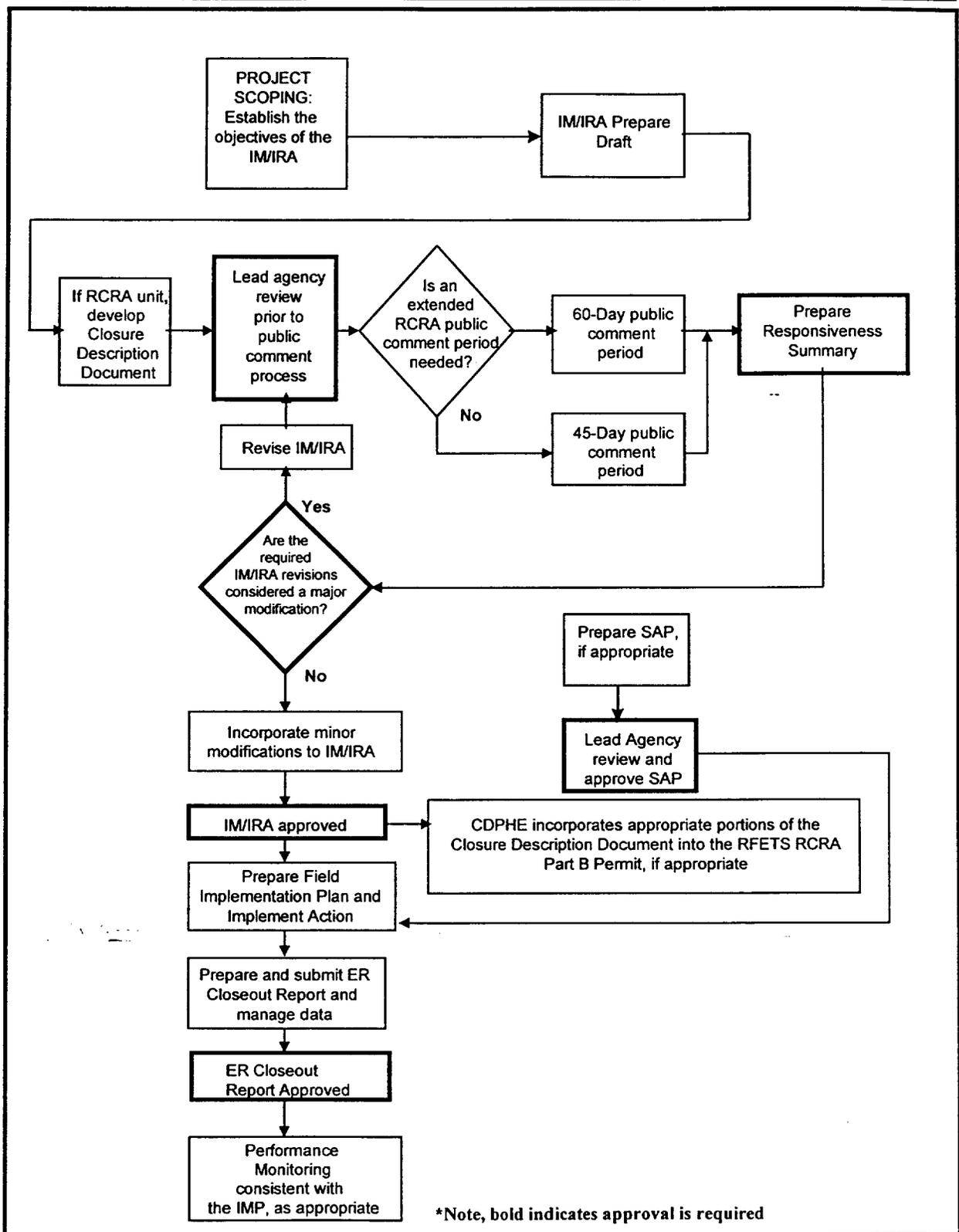


Figure 3-2 Environmental Restoration Interim Measures/Interim Remedial Action (IM/IRA) Process

The IM/IRA process requires production of three documents: the IM/IRA, the SAP, and the Closeout Report. Public comments are received and a formal responsiveness summary is included with the final IM/IRA. The responsiveness summary may also be prepared as a separate document. The document schedule will be set during Project Scoping consistent with RFCA ¶s 89, 107, and 108.

A SAP (see Section 3.1.8) is prepared concurrently with the IM/IRA and is finalized during the public comment period. Although the SAP is submitted to the agencies for review and approval, it is not reviewed by the public because of the technical detail. Any additional documents necessary to execute the accelerated action should be made available to the agencies and the public, but they are not subject to agency approval or public comment. These documents include the Health and Safety Plan (HASP), the Hazards Analysis (HA), Readiness Analysis, and the Field Implementation Plan (FIP). Although this type of information is vital to performing the action, it is not part of the RFETS authorizing sequence.

IM/IRA format and contents are discussed in Appendix B, Preparation of an IM/IRA. Consistent with RFCA ¶107, an IM/IRA includes:

...[A] brief summary of data for the site, a description of the proposed action, an explanation of how waste management considerations will be addressed, an explanation of how the proposed action relates to any long-term remedial action objectives, proposed performance standards, all ARARs and action levels related to the proposed action; and an implementation schedule and completion date for the proposed action.

Performance monitoring is required for all groundwater remedies and should be noted in the IM/IRA. Details of the performance monitoring will be developed as part of the project-specific remedial decision document and implemented through the IMP described in Section 3.14 (DOE, 1998). Performance monitoring will be required for some soil remedies, and, if appropriate, identified in the IM/IRA. (See Section 3.4.E of the ALF). To meet NEPA requirements, screening of alternatives, including no action, is required and will use the EPA Engineering Evaluation/Cost Assessment (EE/CA) process for streamlined alternatives analysis as guidance. EE/CA guidance is found in EPA *Guidance on Conducting Non-Time Critical Removal Actions Under CERCLA* (EPA, 1993). The schedule for developing an IM/IRA will follow the document review schedule outlined in ¶107 of RFCA (or ¶108, if applicable).

3.1.2. Proposed Action Memorandum

The PAM is the primary planning and implementation document for ER accelerated actions. Actions expected to take less than six months from commencement of construction to completion may be approved under the PAM process. (See RFCA ¶106). Closeout reports

for actions performed under PAMs will have the same requirements and format as for actions performed under IM/IRAs. The purpose of the PAM is to describe the nature of the contamination, the proposed mitigating action, and an implementation schedule. The PAM preparation process is summarized in Figure 3-3. The PAM may also serve as a RCRA Part B permit modification, where indicated.

The PAM process requires completion of three documents: the PAM, the SAP, and the Closeout Report. PAMs are typically brief documents (four to thirty pages in length) and reference existing information, previously published, and available documents detailing earlier field investigations. PAMs for accelerated actions are coordinated closely with EPA and CDPHE to minimize the number and duration of review cycles. If public comments are submitted, a formal responsiveness summary will be included with the final PAM, which is revised as necessary. Section 3.10 describes the process for modifying approved decision documents.

A SAP (see Section 3.1.8) is prepared concurrently with the PAM and finalized during the PAM public comment period. Although the SAP is submitted to the agencies for review and approval, it is not reviewed by the public because of the technical detail. Additional documents necessary to execute the PAM should be made available to the agencies and the public, but they are not subject to agency approval or public comment. These documents include the HASP, the HA, and the FIP. Although this type of information is vital to performing the action, it is not part of the RFETS authorizing sequence.

Details of PAM preparation are found in Appendix C. Consistent with ¶106 of RFCA, a PAM includes:

...[A] brief summary of data for the site; a description of the proposed action; an explanation of how waste management considerations will be addressed; an explanation of how the proposed action relates to any long-term remedial action objectives; proposed performance standards; all ARARs and action levels related to the proposed action; and an implementation schedule and completion date for the proposed action

Performance monitoring is required for all groundwater remedies and should be described in the PAM. Details of the performance monitoring will be developed as part of project-specific remedial decision document and implemented through the IMP described in Section 3.14 (DOE, 1998). Performance monitoring will be required for some soil remedies and, if appropriate, identified in the PAM. (See Section 3.4.E of the ALF).

The schedule for developing a PAM will closely follow the document review schedule outlined in ¶106 of RFCA, and is illustrated in Appendix C.

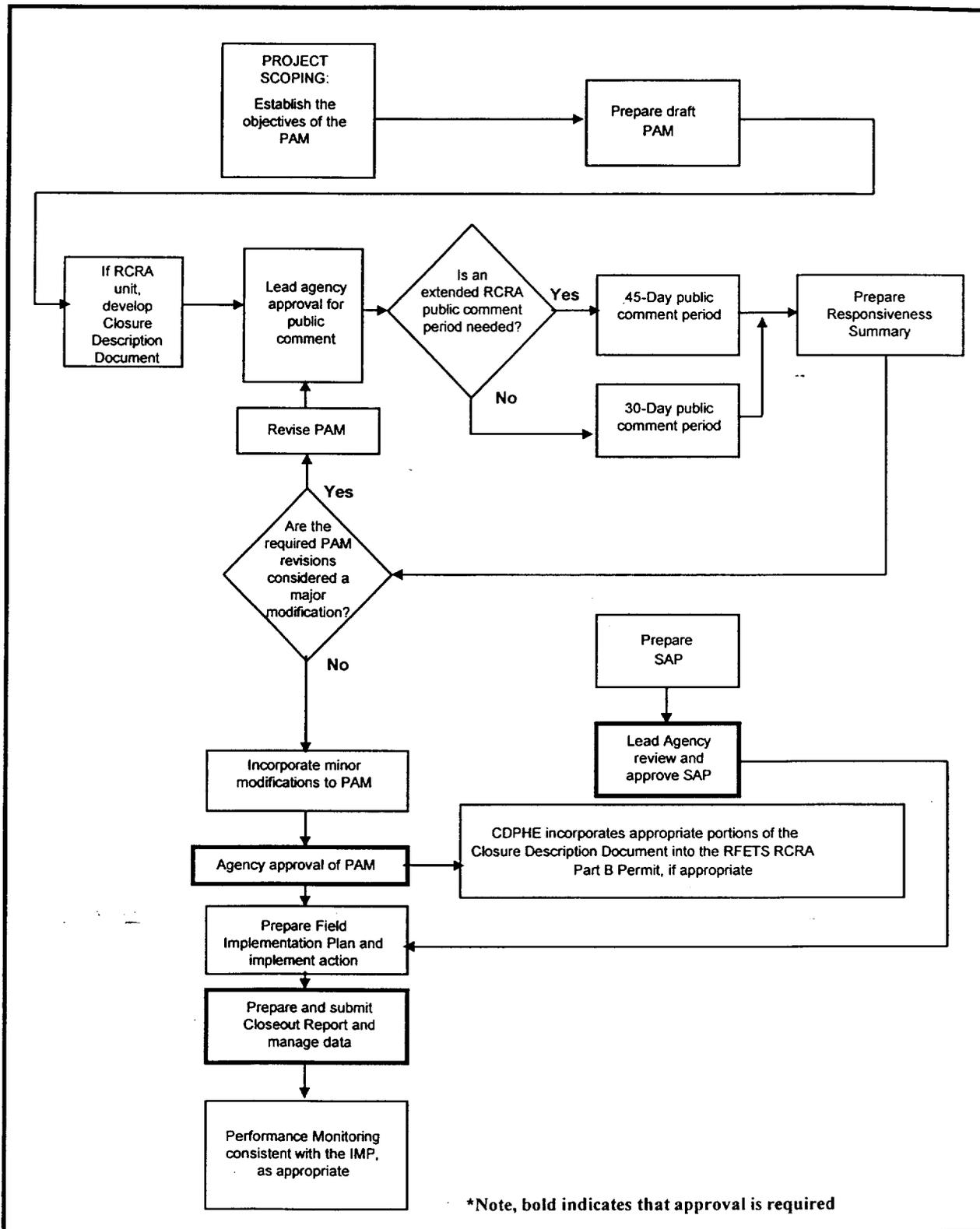


Figure 3-3 Proposed Action Memorandum (PAM) Process

3.1.3. Emergency Removal Actions

RFCA ¶96 governs Emergency Removals as follows:

DOE may initiate a time-critical removal action if it determines, in accordance with the National Contingency Plan, that an immediate response is needed to eliminate or abate a release or substantial threat of release of a hazardous substance posing an immediate and substantial endangerment to the public health and welfare or the environment. DOE shall notify EPA and CDPHE within 24 hours of this determination. Once the immediate threat has been averted or mitigated, DOE shall propose any further actions that may be necessary in accordance with the provisions of this Part or Part 10, as appropriate.

If the RCRA Contingency Plan is activated, the regulators are notified through that process. Otherwise, the DOE RFCA Project Coordinator will notify the other parties.

The Emergency Removal Action process is depicted in Figure 3-4 and will be documented in a Closeout Report that follows the outline presented in Section 3.1.12. The Closeout Report will assess whether additional evaluation is needed or if sufficient data are available to evaluate for No Action/No Further Action (NFA). The removal action will be incorporated into the annual update of the HRR.

3.1.4. RFCA Standard Operating Protocols

RSOPs:

apply to accelerated actions that are routine and substantially similar in nature, for which standardized procedures can be developed. (See RFCA ¶96).

RSOPs may be developed for remedial actions where the same approach will be applied to several different IHSSs or buildings. An example of an ER RSOP would be a generic plan for cleaning and rendering tanks inert. Review and approval of RSOPs will follow the document review process of IM/IRAs. The public comment period for RSOPs will follow the IM/IRA process. An approved RSOP is implemented by notifying the other RFCA parties. (See RFCA ¶25) RSOP format and contents are discussed in Appendix D, Preparation of an RSOP.

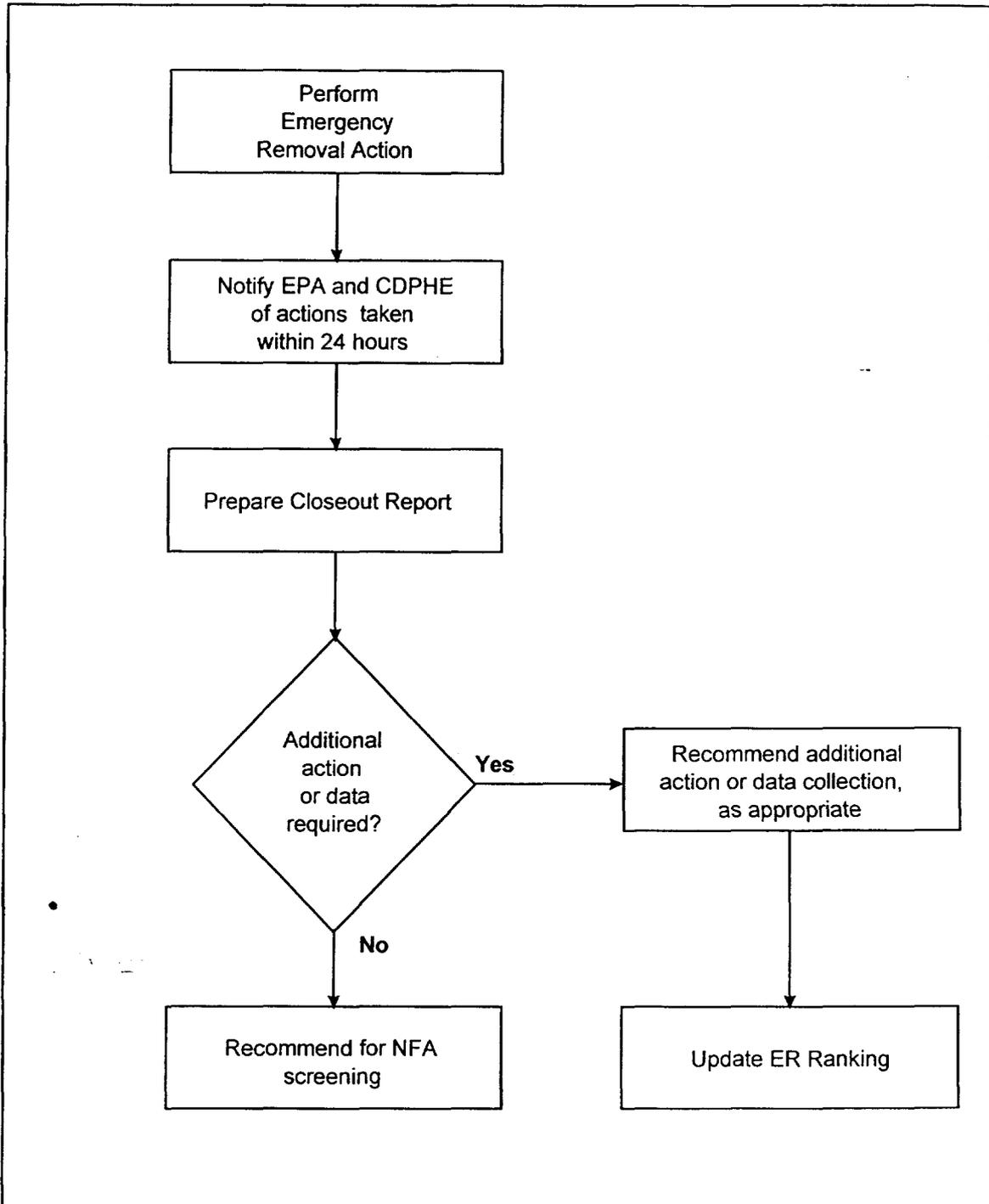


Figure 3-4 Emergency Removal Action

3.1.5. No Further Action Decisions

The criteria and documentation requirements for determining if a geographic area (IHSS, PAC, UBC, Source Area, OU, or Area of Concern [AOC]) can be recommended for NFA are detailed in RFCA Attachment 6. The NFA decision process presented within RFCA Attachment 6 meets the substantive requirements to support an NFA (as defined by CERCLA) remedy selection for a CAD/ROD. As in Attachment 6, the acronym "NFA" represents all circumstances under which an NFA decision may be warranted at RFETS:

- When the geographic area poses no current or potential threat to human health or the environment (**no action decision**)
- When a previous response eliminated the need for further response or when the ALF in RFCA Attachment 5 indicates institutional controls alone will constitute acceptable risk management (**no further action decision**)

Since RFCA and ALF incorporate institutional controls, an NFA decision will imply the implementation of institutional controls and indicates that institutional controls alone will constitute acceptable risk management. An NFA decision will mean that no (further) treatment or engineering controls are warranted for a specific geographic area, but will allow future monitoring.

RFCA Attachment 6 provides decision criteria for establishing those geographic areas at RFETS not requiring further study or remediation as part of the CERCLA process. This NFA decision process is shown in Figure 3-5 and summarized below.

1. **Conduct source evaluation** – If a review of historical release information/defensible data reveals that no current or potential contaminant source exists, then the exposure pathway is incomplete and the geographic area may be recommended for NFA.
2. **Conduct data evaluation** – If the available data are not of sufficient quality or quantity to evaluate a geographic area by means of the ALF, then additional environmental data must be collected.
3. **Conduct an ALF comparison** – If media-specific environmental data collected from the geographic area are below surface water action levels or Tier II action levels for groundwater or soils, the geographic area may be proposed for NFA.
4. **Determine required actions** – If action levels for any medium are exceeded, remedial or management action or an evaluation is required. If an evaluation demonstrates that no action is required to protect surface water and ecological resources, the area may be proposed for NFA.

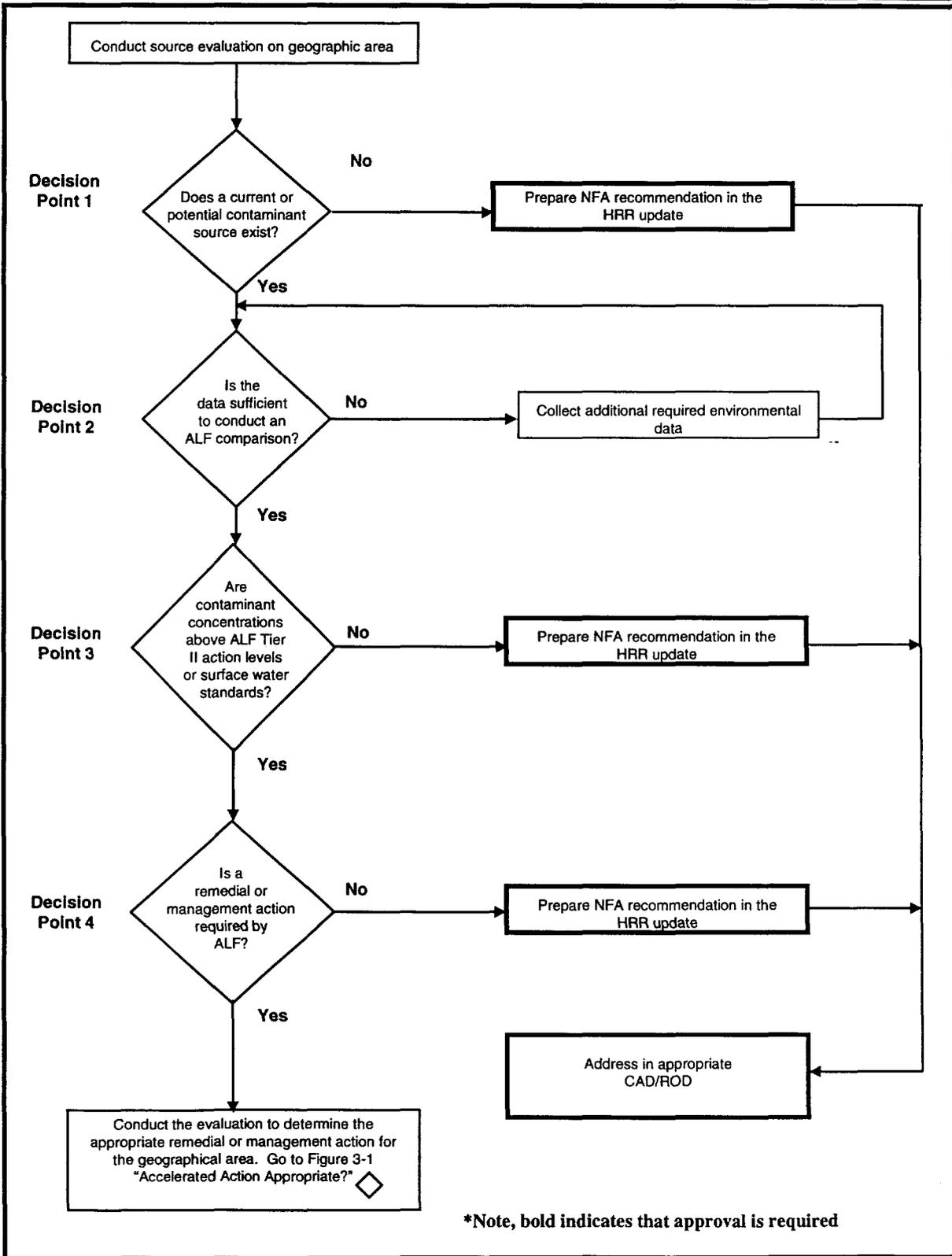


Figure 3-5 Decision Points for No Action or No Further Action Recommendations

In addition to the NFA decision process described above, a risk evaluation may be performed on specific geographic areas to justify NFA. If that risk evaluation is based on a residential exposure scenario (such as the CDPHE conservative screen), a NFA decision without institutional controls may be justified.

The rationale for an NFA decision will be summarized in an update to the HRR, and appropriate supportive documentation will be appended, as necessary. (See Section 3.8.2). Geographic areas documented in this manner will incur minimal administrative attention and costs while awaiting final disposition in a CAD/ROD. This process also removes any impediment the area might otherwise impose on adjacent or overlapping activities. All NFA decisions documented in this manner are subject to review in a CAD/ROD. Other administrative requirements for coordination of NFA decisions with the CAD/ROD process and with RCRA closures at RFETS are discussed in RFCA Attachment 6. A generic schedule for the NFA process is included in Appendix E.

3.1.6. Proposed Plans and Corrective Action Decision/Record of Decision

CAD/RODs apply to the final corrective action/remedial decision made for an OU or a group of OUs following implementation of all accelerated actions. (See RFCA ¶96). CAD/RODs have been or will be completed for OUs 1, 3, 11, 15, and 16. The consultative process provides a mechanism for the Site to consider several options (e.g., single or multiple CAD/RODs) during development of a final CAD/ROD strategy.

Individual IHSSs will be recommended as NFA sites or will be cleaned up through accelerated actions. The residual contaminant levels following accelerated actions will be documented in the various Closeout Reports, the HRR, the RFETS Soil Water Database (See Appendix F) and will be assessed in the CRA. The NFA recommendations and the results of the accelerated actions will support the preparation of the final CAD/ROD(s), regardless of which proposed CAD/ROD strategy option is implemented.

For the Industrial Area OU, CDPHE will make a recommendation to EPA whether to concur with DOE's proposed remedial decision for radionuclides and other hazardous substances that are not hazardous constituents (See RFCA ¶84). This remediation decision will be presented to the public in a Proposed Plan (PP), and finalized in a CAD/ROD. The PP and the CAD/ROD will be developed following the *Interim Final Guidance on Preparing Superfund Decision Documents (EPA, 1989a)*.

For the Buffer Zone OU, following implementation of all planned accelerated actions, EPA and DOE RFFO will make a final remedial decision. The Buffer Zone remediation decision will then be presented to the public in a PP and finalized in a CAD/ROD.

Proposed Plan

Preparation of the PP is described in the *Interim Final Guidance on Preparing Superfund Decision Documents (EPA, 1989a)*. If a CAD/ROD is proposed that requires action, the purpose of a PP is to facilitate public participation in the remedy selection process by:

- Identifying the preferred alternative for a remedial action at a site or OU and explaining the reasons for the preference
- Describing other remedial options that were considered in detail in the CMS/FS
- Soliciting public review and comment on all of the alternatives described
- Providing information on how the public can be involved in the remedy selection process

When a NFA CAD/ROD is proposed, the purpose of the PP is to facilitate public participation by:

- Explaining the basis of the no action or no further action alternative
- Describing the accelerated actions taken and the results of those actions
- Soliciting public review and comment on the no action or no further action alternative
- Providing information on how the public can be involved in the final decision to take no action or no further action.

A PP is a public participation document that is expected to be widely read. Therefore, it should be written in a clear and concise manner using non-technical language and should not exceed five to ten pages. In addition, it should direct the public to the RFI/RI and CMS/FS reports, accelerated action closure reports, and other Site-specific information as the primary source of detailed information on the remedial alternatives analyzed.

For the OUs at RFETS, the PP should list the IHSSs that have been addressed through the NFA process that will be included in the CAD/ROD for the OU. A table format is recommended for listing the IHSSs or buildings, how they were closed, and each IHSS or Closeout Report.

A PP should relate the findings of the RFI/RI, CRA, and CMS/FS in a brief, non-technical format. The information should be presented in support of the preferred alternative (including the no action or no further action alternative) and discuss how it is protective of human health and the environment.

A PP should clearly state that the LRA and DOE has identified a preferred alternative based on available information, but they have not “selected” a remedy to implement. A PP supports only preliminary decisions for an OU, and it should not make definitive findings or declarative statements that would be difficult to revise later.

A PP should emphasize that the preferred alternative is only an initial recommendation. It should clearly state changes to or from the preferred alternative may be made, if public comments or additional data indicate that such a change would result in a more appropriate solution. The plan must also state that the final decision will be documented in the CAD/ROD after the DOE RFFO and the LRA have taken into consideration all comments from the SRA and the public.

The EPA guidance on preparing decision documents describes statutory requirements for a PP and suggests language for these sections. The guidance also includes a suggested outline and detailed suggestions for writing a PP, and describes how to address changes to the PP following public comment. A specific appendix on development of a PP is not included in the IGD because RFETS PPs are expected to follow the general process EPA outlined above.

Corrective Action Decision/Record of Decision

The CAD/ROD documents the remedial action plan for an OU. DOE RFFO and the LRA in consultation with the SRA will prepare the CAD/ROD. (See RFCA ¶83, 84, and 85 for discussion of regulatory authority over CAD/RODs). The CAD/ROD has the following purposes:

- To certify that the remedy selection process was carried out in accordance with the requirements of RFCA, CERCLA, and is consistent with the NCP
- To outline the engineering components and remediation goals of the selected remedy
- To provide the public with a consolidated source of information about the history, characteristics, and risks posed by the conditions at the Site, as well as a summary of the cleanup alternatives considered, their evaluation, and the rationale behind the selected remedy

The CAD/ROD consists of three basic components: (1) a Declaration, (2) a Decision Summary, and (3) a Responsiveness Summary.

The Declaration functions as an abstract for the key information contained in the CAD/ROD, and it is signed by the EPA, CDPHE, and DOE. The Decision Summary provides an overview of the Site characteristics, the alternatives evaluated, and the analysis of the remedial options. The Responsiveness Summary addresses public comments submitted on the PP, RFI/RI and CMS/FS report, and other information in the AR.

The Interim Final Guidance for Preparing Superfund Decision Documents (EPA, 1989a) includes a section-by-section discussion of the components of a ROD, and it should be followed in developing a RFETS CAD/ROD. RCRA units can be closed within the CAD/ROD. The EPA guidance also covers preparing a NFA ROD. Rather than repeat this well-developed information the reader is referred to this guidance and to previous RFETS CAD/RODs. Appendix G includes a generic PP/CAD/ROD development schedule.

3.1.7. RCRA Facility Investigation/Remedial Investigation Process

Because remedial actions at RFETS have been combined into a limited number of OUs, only two RFI/RI remain to be conducted. Other OUs have already been investigated under the RFI/RI process and are in various stages of completion. The CERCLA process for RI development will be followed for the Buffer Zone and Industrial Area OUs (EPA, 1988a). A flow diagram of the RFI/RI process, as envisioned for RFETS, is shown in Figure 3-6. When the RFI/RIs for the Buffer Zone and the Industrial Area are developed, all identified IHSSs should have undergone risk screening and should be identified for either an NFA recommendation or accelerated action. The RFETS RFI/RIs will integrate existing data and gather new data only where data gaps related to remediation are identified. Decision-making needs will be linked directly to data collection and will address RFCA requirements for environmental monitoring in accordance with the IMP.

The Industrial Area RFI/RI will be developed following remediation of the Industrial Area. The Industrial Area RFI/RI will focus on developing an Industrial Area conceptual model and the CRA. Areas that have not undergone accelerated action, deactivation, or decommissioning will be evaluated for further data needs. The need for collection of additional data will be determined during project scoping and development of the RFI/RI work plan. If enough data are available to determine the risk from the Industrial Area and further remediation is necessary to address the risk, any additional data collected will focus on selection and design needs.

The Buffer Zone RFI/RI process may not involve the gathering of new data, but will focus on developing the CRA. The CRA will compile the summary information and risk estimates from the previous Buffer Zone BRAs where possible. However, remedial actions, taken after production of the original BRAs, may render many of the estimates obsolete, and new estimates will have to be combined with those from the Industrial Area to determine the cumulative effects on some receptors. If additional action is needed as part of the final remedial action for the Buffer Zone, the remedy will either be selected through the CMS/FS process or a presumptive remedy will be used. The remedy selection will be documented in a PP/CAD/ROD. Appendix H includes a generic RFI/RI process schedule.

3.1.8. Sampling and Analysis Plans and Data Quality Objectives

SAPs 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. The purposes of the SAPs include:

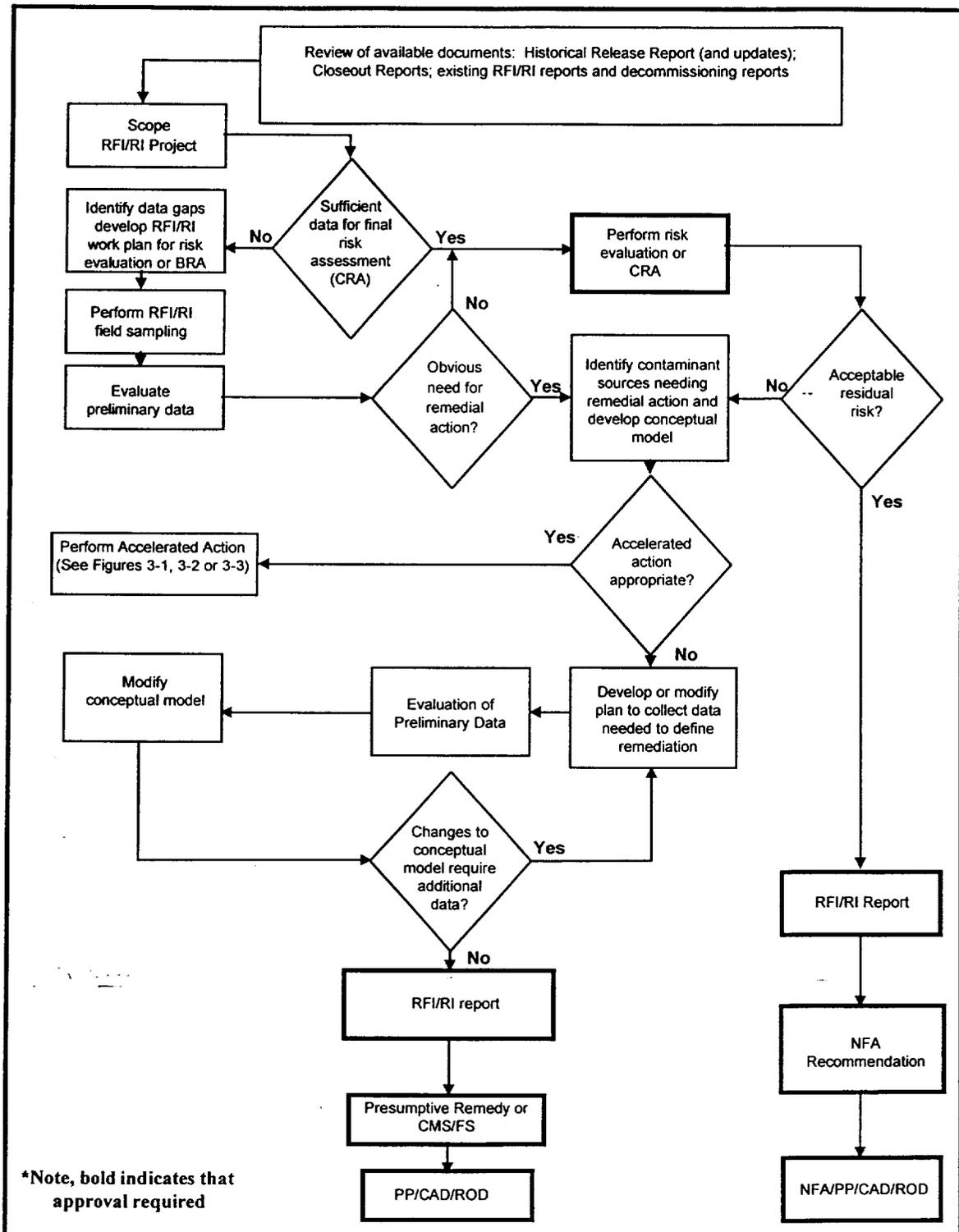


Figure 3-6 RCRA Facility Investigation/Remedial Investigation (RFI/RI)

- 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

SAPs consist of a Field Sampling Plan (FSP) and a Quality Assurance Project Plan (QAPjP). At RFETS, a Site-wide QAPjP has been developed. Therefore, most SAPs consist of the FSP and discuss project-specific modifications to the QAPjP. Because of this approach, data quality objectives focused on the project-specific data needs are developed within each SAP/FSP. Development of SAPs is described in Appendix I.

Data quality in terms of laboratory analytical methods will be focused on the primary and secondary data uses. In general, SW-846 analytical methods are appropriate for the documentation of hazardous waste characteristics, for risk evaluation, and for the determination that soils remaining following a cleanup are below the levels specified in the decision document. Radiological laboratory analysis will be performed under RFETS Statement of Work for Analytical Measurements. Field screening data are generally sufficient to meet the DQO needs of gross volume calculations before excavation or for excavation control. A statistical approach will be used, where appropriate, to determine the number of samples necessary to make a specific decision. Data will not be collected unless a specific decision has been identified for the data.

In collecting characterization or design data, a conceptual model of the IHSS, specific release, or system to be addressed will be developed based on existing data and professional judgment. The conceptual model will address contaminant transport issues such as expected presence of dense non-aqueous phase liquids, connection to higher permeability zones, and containment of the contamination by low permeability clays. Development of a conceptual model incorporating available data assists in framing the questions that justify additional data collection.

The IMP includes the sampling requirements for routine monitoring of surface water, air, and ecological resources. This monitoring plan has involved extensive DQO evaluation for samples that are collected on a routine basis. The IMP includes the location of collection points, frequency, method of sampling required, and analytical suites. The IMP also describes reporting requirements and specific triggers to increase sampling frequency or perform additional evaluations.

3.1.9. Corrective Measures Study/Feasibility Study

The CMS/FS identifies and evaluates appropriate corrective measures. “Corrective Measures Study” is a RCRA/CHWA term that is analogous the CERCLA “Feasibility Study.” Under RFCA, the CMS and FS may be the same document. (See RFCA ¶25v).

The CMS/FS developed at RFETS will be consistent with the NCP and with EPA feasibility study guidance (EPA, 1998a). The EPA proposed rule for Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities (55 FR 30798) and associated guidance will also be considered. Where appropriate, the CMS/FS will evaluate CHWA’s closure and post-closure care requirements. A sample table of contents for the CMS/FS and schedule are provided in Appendix J.

The CMS/FS tasks include:

- Establish narrative corrective/remedial action objectives and, if appropriate, numeric remedial action goals
- Develop General Response Actions (GRAs) and identify potential remedial technologies and process options
- Screen potential remedial technologies and process options and develop a list of representative process options (RPOs)
- Assemble RPOs into remedial alternatives
- Screen remedial alternatives to eliminate unfeasible and impracticable options
- Further define alternatives as necessary
- Analyze alternatives against the nine evaluation criteria, then against each other
- Prepare the CMS/FS report to document results

The above list of tasks is adapted from EPA’s *Guidance for Conducting Remedial Investigation and Feasibility Studies Under CERCLA (EPA, 1988a)*. At RFETS, the primary use of the CMS/FS process will be to evaluate the combined results of various accelerated actions. In that instance, based upon risk assessment and ARARs evaluations, the CMS/FS may result in narrative remedial action objectives and numeric remedial action goals that do not compel evaluation of a wide range of remedial technologies and process options.

The scope and content of the CMS/FS is not subject to an arbitrary formula. The evaluation of technologies and process options, and subsequent screening and analysis is focused on the risk and ARARs-based remedial action objectives.

3.1.10. Technical Memoranda

TMs will be written, if necessary, to resolve specific interpretive issues. They will be brief, similar in nature to a “white paper,” and will be focused on presentation and discussion of

information relevant to the specific issue. Many TMs will be developed to address or clarify issues, and will not be subject to the document review and revision process. When the TM modifies a previous decision document, the modifications must be accomplished consistent with Part 10 of RFCA and Section 3.10 of the IGD. The RFCA specifically identifies three types of TMs:

- BRA TM
- CMS/FS TM
- RFI/RI Work Description TM

Examples of other types of TMs would be: impact evaluations of exceedances of action levels, the examination of design data needs, an evaluation of the actual impact of an ARAR on an action, or compilation and discussion of data to determine whether a constituent above an ARAR or a RFCA ALF cleanup level is within natural background variability for the Site. TMs will be incorporated into the AR.

3.1.11 RCRA Closure

RFCA Attachment 10 provides direction on closure of RCRA interim status units. This guidance can also be applied to permitted units; however, these are not covered by the agreement. Four significant RCRA closure issues are included in RFCA:

- Closure of permitted and interim status units incorporated into a decision document in lieu of a unit-specific closure plan
- Closure of land-based and non-land-based RCRA interim status units
- Clean closure of RCRA units
- Phased closure of RCRA units

Hazardous waste management units are subject to closure under the RCRA Part B Permit or the Interim Status Closure Plan. According to RFCA ¶97, CDPHE will determine if a separate closure plan is required or if the closure/post-closure requirements will be incorporated into a decision document. Closure of land-based interim-status units will be incorporated in IM/IRAs; non-land-based interim-status units may be covered by a PAM, an IM/IRA, or an RSOP. RCRA units not closed under accelerated actions or decommissioning will be closed as part of the final CAD/ROD (e.g., 750 and 904 pads).

All closures will be performed in accordance with the CPB. Wastes generated during a closure action, wastes from a corrective action for a land-based unit or residual wastes from a non-land-based unit, are considered remediation wastes. Existing contamination will be addressed separately, as part of RCRA corrective actions/CERCLA remedial actions as determined by the ALF and detailed in the *Groundwater Conceptual Plan for the Rocky Flats Environmental Technology Site* (RMRS, 1996b).

Section I of RFCA Attachment 10 enumerates the minimum requirements for closure of land-based interim-status units (the Solar Ponds and Present Landfill). This section specifies design criteria of a cap/cover over these land-based units, as well as monitoring and other post-closure activities.

Minimum closure requirements for non-land-based units (mostly former OU 9 IHSSs) are discussed in RFCA Attachment 10, Section II. This section specifies the removal of all wastes from these units and describes how the units can accomplish clean closure via corrective action based on an appropriate decision document. If a unit cannot achieve clean closure, other requirements, including post-closure requirements, will apply.

The RCRA Part B Permit (CDPHE, 1997) parallels RFCA ¶71 by specifically providing for phased closure when appropriate. Phased closure begins when a unit is placed in a "RCRA-stable" configuration. The RCRA-stable concept is not described in or regulated by RFCA, but it is included in Section E of Part X of RFETS's RCRA Part B permit. This strategy for clean closure allows DOE RFFO to conduct the closure of a permitted unit in two stages: first by rendering a unit/portion of a unit RCRA stable, followed by completion of the final stage of closure as part of a RFCA-regulated cleanup activity. Once a permitted unit is placed in a RCRA-stable configuration, final closure of the unit is deferred until it is scheduled pursuant to the RFCA budget planning process and prioritized and integrated with other activities. RCRA-stable units will be indicated as such, pending final closure, in the Master List of RCRA Hazardous Waste Units at Rocky Flats, which is updated semi-annually. Elements of this closure strategy include waste removal, elimination of future waste input, less stringent unit management practices (e.g., inspection requirements), and removal of the unit including disposition of associated equipment and debris.

3.1.12. Closeout Reports

A Closeout Report will be prepared for all remedial or accelerated actions, including decommissioning remedial actions, when work and relevant final characterization is completed. The Closeout Report will consist of a brief description of the work that was completed, including: (1) any modifications to the original decision document; (2) final sampling and analysis report(s); (3) a description of the quantity, characteristics, storage and disposal of the remediation and process waste produced; and (4) a statement, if true, that there were no releases to the environment due to the execution of the project or, if not true, a description of the release and the response taken.

The Closeout Report will state whether, as of the date of the Closeout Report, the goals and objectives of the action were met, and, if not, what additional work is required. The complexity of the Closeout Report and the level of detail will reflect the scope and duration of the action. An example outline for a Closeout Report is shown below (only topics germane to the action are required to be included in the report):

- Introduction
- Action description
- Verification that action goals were met
- Verification of treatment process
- Radiological analysis
- Demolition survey results
- Waste stream disposition
- Deviations from the decision document
- Description of site condition at the end of decommissioning (e.g., slab, basement, etc.)
- Site reclamation
- Demarcation of excavation
- Demarcation of wastes left in place
- Dates and duration of specific activities (approximate)
- Final disposition of wastes (actual or anticipated)
- Next steps for the area (e.g., decommissioning is complete; facility demolished or ready for reuse; interim monitoring, if required; or ER action in progress or further evaluation required)

An ER closeout report will be prepared for all ER projects and will be submitted to the agencies. A decommissioning Closeout Report will be prepared for all building decommissioning projects. Only the decommissioning Closeout Reports for Types 2 and 3 (See Section 3.2) building decommissioning projects will be submitted to the agencies. The DPP requires that upon completion of the relevant final characterization (final status survey), DOE RFFO will notify CDPHE, EPA and the public in writing of the completion of decommissioning for a building or group of buildings. DOE RFFO will accomplish notification to the public with a letter to the Rocky Flats Citizen Advisory Board (RFCAB) with a copy of the Closeout Report transmittal letter, which is provided to the appropriate agencies.³

3.1.13. Project Cost Summary

Following project completion, DOE RFFO will provide the following “unburdened” general project costs to the agencies:

- Total project “burdened” and “unburdened” costs
- Project management
- Planning and site preparation
- Excavation and site restoration
- Treatment
- Transportation
- Waste disposal

The Project Cost Summary must be reviewed by K-H Legal prior to its release to the agencies to ensure the information is submitted in a manner to protect confidentiality.

3.2. DECONTAMINATION AND DECOMMISSIONING

The Decommissioning Program is governed by the DPP which describes how aspects of building decontamination and decommissioning will be implemented and elaborates on Attachment 9 of RFCA. The process described in the DPP begins with a scoping meeting, proceeds to reconnaissance level survey for contamination, a hazard assessment, and a reconnaissance level characterization report of the findings. At that point, the lead regulatory agency is notified of the categorization for concurrence. Figure 3.4.1 of the DPP provides an illustration of the process.

The DPP identifies three categories of buildings. Each category of building is subject to progressively more rigorous levels of regulatory scrutiny.

- Type 1 buildings are free of contamination.
- Type 2 buildings are “without significant contamination or hazards but in need of decontamination”.
- Type 3 buildings have significant contamination and/or hazards. Buildings 371/374, 559, 707, 771/774, 776/777, and 779 have been designated as Type 3.

For Type 1 buildings, following the reconnaissance level survey, buildings determined to be free of contamination may go directly to reuse, dismantlement, or demolition. For Type 2 and Type 3 buildings the appropriate decision document must be prepared. Buildings may be reclassified from Type 1 to Type 2 if contamination is discovered and the removal techniques will involve a threat of release. Suggested outlines for the decommissioning decision documents are provided in the DPP.

Other documents may also provide useful guidance for completing decommissioning at RFETS. The Facility Disposition Program Manual provides broad information to facilitate projects. In addition, decommissioning characterization protocols have been developed and will assist in conducting reconnaissance level characterization, in-process characterization, and final status surveys.

3.3. INTEGRATION OF DECONTAMINATION AND DECOMMISSIONING AND ENVIRONMENTAL RESTORATION

Prior to the initiation of decommissioning activities, monitoring efforts (monitoring for surface water, groundwater, and air) are required to establish the baseline conditions that exist in the Industrial Area. This effort is coordinated with the RFETS ER and

Environmental Systems and Stewardships Organizations. To establish good baseline conditions, this effort should occur very early in the decommissioning scoping phase and to the extent practicable, be incorporated into the IMP update.

The ER organization will be integrated into decommissioning project scoping to develop an understanding of the project, such as type of contaminants expected in the building; to decide whether adequate monitoring is in place to establish the baseline conditions; and to decide what part of the structure, if any, will be left at the end of decommissioning.

One mechanism used to accomplish ER and D&D integration is the IMP. This plan is a comprehensive consensus-based monitoring plan that incorporates the current thinking of DOE and its contractors, the agencies and the stakeholders. It is intended to capture the required environmental monitoring needed to demonstrate environmental compliance during ongoing operations and closure activities. More recently, the plan has been revised to begin focussing on elements that provide necessary closure documentation. For example, the latest revision to the IMP will be addressing the use of more accurate analytical methods to determine background concentrations of uranium in the groundwater. Discussions have also begun to find ways to incorporate "generic" language that captures the decision rules and data requirements for characterization of soils and building rubble that may remain in the environment at the Site past closure.

3.4. DATA MANAGEMENT AND QUALITY ASSURANCE/QUALITY CONTROL

3.4.1 Data Management

A variety of data will be generated during remediation and ER decommissioning. These data include but are not limited to:

- Air monitoring data
- Meteorological data
- Ecological data
- Surface water monitoring data (including physical and chemical information)
- Groundwater monitoring data (including analytical and field parameters)
- Well construction data
- Geological characterization data
- Spatial data
- Waste characterization data
- Field screening data
- Soils data (analytical and physical data)
- Other characterization data (including high purity germanium [HPGe] field data)

As shown in Figure 3-7, RFCA project managers are responsible for defining their data needs and managing their data to produce current decision documents and the final CAD/ROD. The RFETS Closure Support Group will provide analytical data of known quality, deliver the data to customers, and store the data in REFTS electronic data systems for current and future use. The data collected during all cleanup activities are essential to the successful closure of the RFETS and development of the final CAD/ROD. Therefore, proper management of the data is a key responsibility of the project. In addition, RFETS is required to provide copies of electronic environmental data collected as part of the RFCA process to the agencies (CDPHE and EPA). Therefore, lack of appropriate management may impact the Site's ability to meet RFCA requirements. Appendix F provides details on closure data management requirements.

3.4.2 Data Quality

The RFCA project manager must ensure that environmental data collected in support of RFCA activities meet all applicable data quality requirements (Appendix F), including:

- Analytical data quality requirements
- Program data quality requirements, and
- Evaluation of the data with respect to precision, accuracy, representativeness, completeness, and comparability (PARCC). Details on the analytical data quality assessment process and PARCC analysis are provided in Appendix F.

Quality Assurance/Quality Control (QA/QC) requirements are addressed in a graded approach in accordance with DOE Order 5700.6C (DOE, 1996e) for non-nuclear facilities, activities and services and with the NCP (40 CFR Part 300). Specifically 40 CFR §300.415 (b)(4)(ii) for CERCLA removal actions and 40 CFR §300.430(b)(8) for CERCLA remedial actions require FSPs, SAPs, PAMs, IM/IRAs, RSOPs and Closeout Reports to address quality concerns. Additional details on QA/QC are provided in Appendices F and I.

3.5. ARARS AND RFCA PERMIT WAIVER

RFCA requires a process be developed for identifying applicable or relevant and appropriate legal requirements for response actions under CERCLA. (See RFCA ¶10p). To accomplish this objective, an RFETS Master List of Potential ARARs (ARARs List) for actions that will be taken on-Site is included in the IGD Appendix K. ARARs identification will be initiated when individual projects are scoped, and ARARs will be determined when the decision document is approved. Interpretation of ARARs during a response action will be accomplished using the consultative process. Documentation of ARARs that could not be met during an accelerated action should be documented in the Closeout Report Section (3.1.12). Final ARARs for the Site will be documented in the appropriate CAD/ROD.

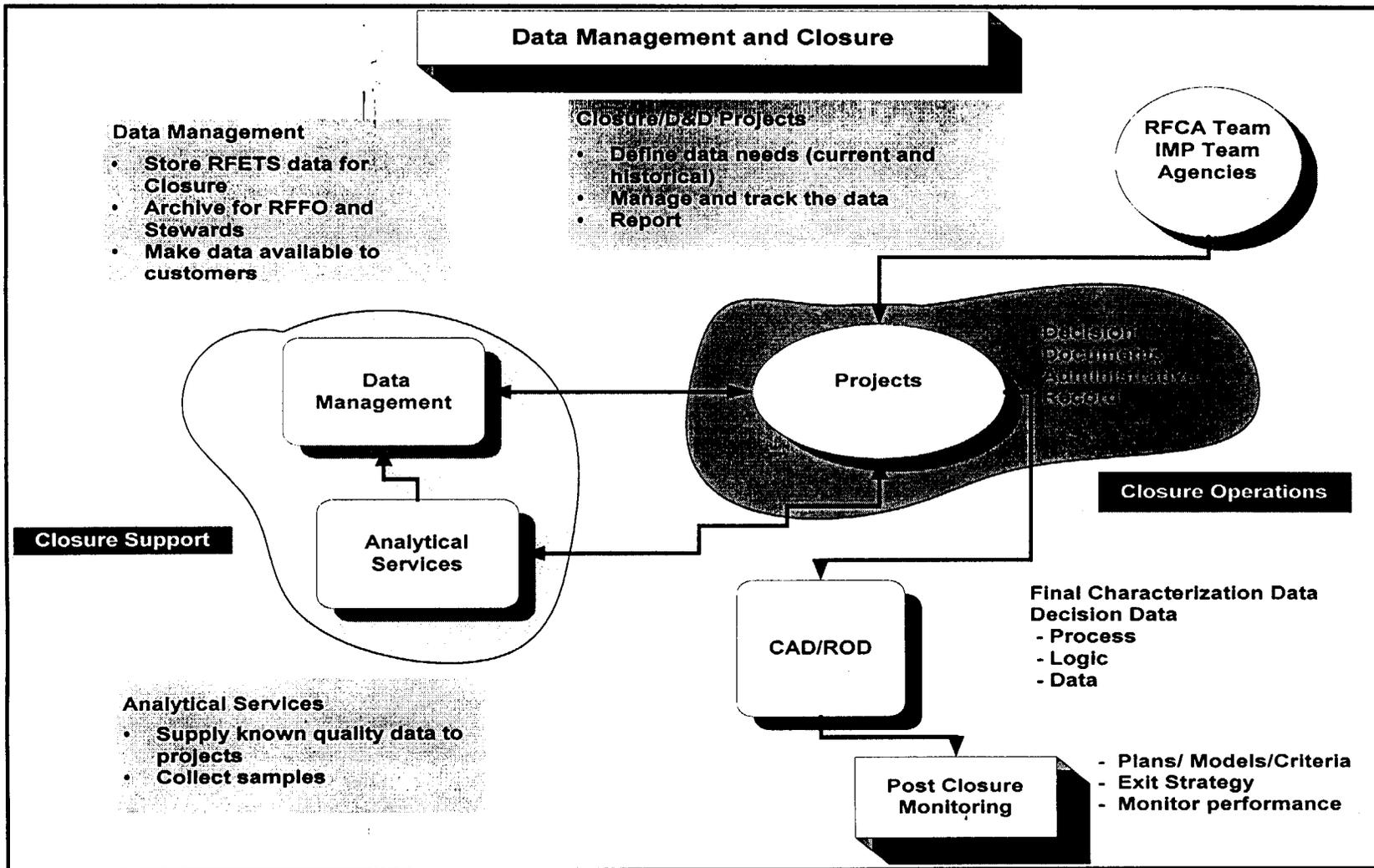


Figure 3-7 Environmental Data Management and Closure

3.5.1. ARARs List

The ARARs List (Appendix K) serves to narrow the universe of potential ARARs. Environmental requirements with little or no likelihood of applicability or relevance and appropriateness (e.g., Coastal Zone Management) have been removed from consideration. The ARARs List will be updated as needed, and at a minimum on an annual basis. (See RFCA ¶5).

3.5.2. Project-Specific ARARs Analysis

ARARs will be initially identified when projects are first scoped. The identification will be conducted consistent with the NCP, the preambles to the proposed and final NCP, CERCLA Compliance with Other Laws Manuals Part I and Part II (EPA, 1988b and EPA, 1989b), and other EPA ARARs guidance.

The identification will begin by evaluating the ARARs List for applicability or relevance and appropriateness. Once the ARARs are narrowed, the final presentation and determination will occur in conjunction with approval of the decision document. ARARs interpretations during actions will be accomplished using the consultative process. Where documentation is warranted, TMs will be prepared.

3.5.3. Exemption from Administrative Requirements of ARARs

CERCLA and RFCA require compliance with substantive, not administrative, ARARs. (See 40 CFR §300.5, definition of *Relevant and Appropriate Requirements*). EPA recognizes that, in some circumstances, the distinction between administrative and substantive requirements is not clear. To address this, EPA described the problem and factors to consider as follow:

In most cases, the classification of a particular requirement as substantive or administrative will be clear, but some requirements may fall into a gray area between the provisions related primarily to program administration and those concerned primarily with environmental and human health goals. Several factors may be considered when it is not readily apparent whether a requirement is substantive or administrative; for example, the basic purpose of the requirement, any adverse effect on the ability of the actions to protect human health and the environment if the requirement were not met, the existence of other requirements (e.g. CERCLA procedures) at the site that would provide functionally equivalent compliance, and classification of similar or identical requirements as substantive or administrative in other situations. The determination of whether a requirement is substantive or administrative need not be documented.

(See preamble to the proposed NCP, 53 FR 51443, middle column, center).

3.5.4. RFCA Permit Waiver

RFCA ¶16 provides a waiver from permitting for response activities conducted entirely on the Site. The response activities eligible for the permit waiver include:

- Removal or remedial actions in the Buffer Zone
- Decommissioning activities
- Activities under any concurrence CAD/ROD
- Remedial actions in the Industrial Area for hazardous substances that are not also hazardous wastes or hazardous constituents (e.g., radionuclides that are not mixed wastes and PCBs)

In order to receive a permit waiver, DOE RFFO must include in the decision document:

- An identification of each permit that will be exempt
- An identification of the standards, requirements, criteria, or limitations that would have had to have been met to obtain the permit
- An explanation of how the response action proposed will meet the standards, requirements, criteria, or limitations otherwise required by the permit

3.6. RISK EVALUATION

The evaluation of human health and ecological risk is central to the implementation of RFCA. ¶B2a of the RFCA preamble states that controlling the sources of contamination will be the priority of the ER Program. Unacceptable risk will be reduced by remediation or management actions. Risk reduction is best achieved through the risk assessment process.

Under the authority of CERCLA, the EPA has developed guidelines for the evaluation of human health and ecological risks and hazards (EPA, 1994b). Site-specific guidance and parameters to be used in risk evaluations have been negotiated with DOE, EPA, and CDPHE (DOE 1995b, 1995d, 1995e, Appendix L). The Site-specific guidance and parameters have been used and approved in a series of OU-specific BRAs (DOE 1995f, 1995g, 1996c, 1996d). This section documents agreed upon risk methods and parameters, and the points at which they may be applied in the risk management process defined by RFCA and the ALF.

The ALF defines action levels as "numeric levels that when exceeded, trigger an evaluation, remedial action, and/or management action". Since action levels are derived from risk calculations (or, in the case of radionuclides, dose calculations which are within risk limits), comparisons to action levels constitute a risk evaluation. Management decisions and remedial actions should be based on a detailed knowledge of the risks to human health and

the environment. The Site-specific Human Health Risk Assessment Methodology (HHRAM) (DOE, 1995b) coupled with the Ecological Risk Assessment Methodology (ERAM) (DOE 1996a, 1996b) provide the necessary tools. These methodologies are discussed in more detail in Appendix L.

3.6.1. Implementation of Risk Assessment Methodologies Within the RFCA Framework

When an action level for surface soil or subsurface soil is exceeded using single data point comparisons to action levels, the AOC is placed in the ER Ranking System and risk management options are evaluated. The sequence to be followed for action level comparisons is detailed in Section 3.7. Once it is determined that an action level is exceeded, further risk evaluation may be needed depending upon the complexity of the site under consideration.

Action levels for non-radiological chemicals are predominantly risk-based, except for organics in subsurface soils, which are calculated to be protective of surface water standards via groundwater transport. Action levels for radionuclides in groundwater and surface water are risk-based. Action levels for radionuclides in soils are dose-based. In accordance with ALF, chemical risk is considered to be additive when multiple chemicals are present, and radiological dose is additive when multiple radionuclides are present. The method for applying action levels when multiple contaminants are present is explained in Section 3.7.

The project manager must be sure decisions are made using cumulative risk when multiple contaminants are present at a site. After aggregated data are compared to action levels (see Section 3.7), a simple screening level risk assessment, using appropriate receptors and exposure factors, may be used to ensure remedial action decisions have a firm risk-based component. A situation in which a risk screen would be appropriate would be when the results of the action level comparison are very close to breakpoints.

To perform the screening level assessment, the AOC is chosen and the data are aggregated by the methods agreed to for the site-specific HHRAM. The potential contaminants of concern (COCs) can be chosen using a simplified background comparison (see Appendix L), and the exposure concentration calculated using the 95 percent upper confidence limit (UCL95) on the arithmetic mean concentration of contaminants within the AOC. If the estimated risks are below 1×10^{-6} and the hazard index less than one, the AOC may be recommended for NFA. If the risk is greater than or near 1×10^{-4} , an accelerated action may be necessary. If the risk between 1×10^{-6} and 1×10^{-4} , then a more detailed risk evaluation is warranted to ensure that an appropriate risk management decision is made. This detailed evaluation may be deferred to the CRA rather than generating multiple risk evaluations. Results of the screening level risk assessment should be reported in a condensed format (e.g., a letter report or TM).

3.6.2. Environmental Restoration Ranking

ER projects are prioritized based on an approved methodology for producing a risk-based ranking authorized in RFCA ¶74 (See Section 3.7 and Appendix L). Areas may also be added to the ranking as information from action level comparisons or risk assessments become available.

3.6.3. Comprehensive Risk Assessment

Part 8 of the RFCA states that after all accelerated actions have been completed, Site conditions, including residual risk from accelerated actions, will be evaluated and corrective/remedial action decisions will be rendered as appropriate. The preamble to the NCP discusses risk in the remedy selection process in 40 CFR 300.430(e). The preamble at 55 FR 8712 states, "*EPA selects remedies resulting in cumulative risks that fall within a range of 10^{-4} to 10^{-6} .*" OSWER Directive 9355.0-30 (EPA, 1991) more specifically states that, "*(f)or sites where the cumulative site risk to an individual based on reasonable maximum exposure for both current and future land use is less than 10^{-4} , action is generally not warranted....*" These statements are consistent with the agencies' position that a CRA must be completed, including an evaluation of the contribution of all sources of risks and hazards to off-site receptors, before a final CAD/ROD for the Industrial Area and Buffer Zone can be accepted.

The protectiveness of the final remedy to human health and the environment must be measured by evaluating the cumulative risk for the entire Site. The CRA is the mechanism that can provide the answers needed for closure of the Site. The two alternative approaches that could be chosen for performance of the CRA are outlined below.

1. The CRA may be undertaken concurrent with remediation activities in the Buffer Zone and the Industrial Area. Performed in this manner, the CRA would be a living document and updated as remediation progresses. It would be used for directing resources toward remediation targets to reduce the cumulative risk to an acceptable level. The CRA would be a management tool to expedite closure and reduce unnecessary remedial activities.
2. The CRA could be performed after all building disposition, waste removal, and remediation have taken place. Performed in this manner, the CRA would only be used for the final CAD/ROD to ensure no cumulative residual risks from RFETS to human health or the environment.

The methodology for performing the RFETS Site-wide risk assessment has not been finalized. It has not been determined if the CRA will be completed as two modules, one for the Buffer Zone and one for the Industrial Area, or if it will be performed for the entire Site at one time. If a modular approach is used, care must be taken that the modules can be combined for the final estimates of risk to appropriate on-site receptors, environmental hazard, and for modeling of effects to groundwater, surface water, and off-site receptors. The

RFETS HHRAM will be used as the starting point for developing an appropriate methodology for the CRA. The exposure scenarios and factors previously agreed upon will also be used. The RFCA parties must decide the procedure for data aggregation and determination of how AOCs will be combined for evaluation.

3.6.4. Radiological Dose Evaluations

Radiological dose evaluations of residual radioactive materials are required to ensure protection of public health under DOE Order 5400.5 (DOE, 1990) and to implement DOE's "as low as reasonably achievable" (ALARA) policy. DOE RFFO, EPA and CDPHE have agreed to use EPA's draft *Radiation Site Cleanup Regulations* (EPA, 1996c) for calculation of radionuclide action levels in soils. To be consistent with the RFCA and the ALF, all dose calculations will be done using RESRAD, the computer code the Argonne National Laboratory developed for DOE RFFO to facilitate the implementation of residual radioactive materials guidelines, and Site-specific exposure scenarios, exposure factors, and environmental parameters. A detailed explanation of the derivation of radionuclide action levels for soils is provided in the Action Levels for Radionuclides in Soils (Appendix M).

3.6.5. Cumulative Effects between Dose and Risk

Action levels for non-radionuclide chemicals are risk-based, and chemical risk is considered additive when multiple chemicals are present. Radionuclide action levels are dose-based and radiation dose is considered additive when multiple radionuclides are present. Radionuclides and non-radionuclides will be assessed independently on a project-specific basis using methodology that is protective of human health and the environment. The RFCA Parties will consult regarding whether it is appropriate to assess the cumulative effects of radionuclides and non-radionuclide chemicals on a project-specific basis if the chemical risk and radiation doses are near their respective Tier I action levels.

3.7. THE ACTION LEVELS AND STANDARDS FRAMEWORK

3.7.1. ALF Background

The goals of the ALF are to:

- Provide a basis for future decision making
- Define the common expectations for all parties
- Incorporate land and water use control into Site cleanup

The purpose of the action level is to:

- Trigger an evaluation, remedial action, or management action
- Serve as interim cleanup levels, when appropriate
- Provide “put-back” levels for interim soil removals

As defined in the ALF:

Action levels are numeric levels that, when exceeded, trigger an evaluation, remedial action, and/or management action. Final cleanup levels will be determined in the CAD/ROD. For interim remedial actions, interim cleanup levels will equal Tier 1 action levels unless some other ALF provision requires a greater level of cleanup (e.g., protection of surface water)... A standard is an enforceable narrative and/or numeric restriction established by regulation and applied so as to protect one or more existing or potential future uses. Within this framework, standards are associated with surface water use classifications and applied at points of compliance (POCs). Standards are not being directly applied to groundwater or soils.

The surface water standards are based on promulgated state surface water quality standards below the terminal ponds and are applied as action levels above the terminal ponds. The action levels for groundwater are based on the maximum contaminant levels (MCLs). For those chemical constituents without MCLs or standards, groundwater action levels are based on programmatic preliminary remediation goals (PPRGs). PPRGs are chemical-specific and medium-specific risk-based concentrations calculated for an exposure scenario (e.g., office worker, open space recreational user) using Site-specific exposure factors, standard toxicity factors, and a carcinogenic risk level of 1×10^{-6} , or a hazard index of 1 for non-carcinogenic compounds (See Appendix N for PPRG Tables).

The action levels for surface soils were developed to be protective of human exposure under the designated land use conditions. The PPRGs are used as action levels for all non-radionuclide chemicals. Action levels for radionuclides in surface soil are based on the 15/85 mrem per year dose limits, consistent with EPA's draft Radiation Site Cleanup Regulations, and DOE's proposed 10 CFR 834 (58 FR 16268).

Subsurface soil action levels for many organics were developed to be protective of groundwater using the EPA Soil Screening Guidance (EPA, 1996a, 1996b). For metals, radionuclides and other inorganics, the subsurface soil samples were set equal to surface soil action levels.

3.7.2. Application of the Action Levels to Trigger Interim Actions

Surface Water and Groundwater Monitoring

The application of the ALF to surface water and groundwater monitoring is described in detail in the IMP. The application of ALF to the groundwater portion of the IMP is shown in

Figure 3-8.

Appendix O provides a “process description” as the approach to integrate the goals and objectives of groundwater monitoring, hydrogeologic characterization, and remedial actions at RFETS. The intent of this “process description” is not to prescribe specific analyses that must be performed, but to present a general approach that defines how groundwater contamination at RFETS will be assessed and addressed. By developing an integrated process, the basis for decisions regarding the need for remediation and the evaluation of remediation performance should be consistent, and will effectively protect surface water and ecological resources.

The IMP is developed using the inputs of DOE RFFO and its contractors, the agencies, and the stakeholders, working together to reach consensus regarding the monitoring needs of all parties, both for regulatory purposes and for purposes of assuring appropriate execution of closure activities.

The IMP describes the routine Site-wide monitoring programs for surface water, groundwater, air, and ecology. Sampling locations, frequency, analyte suites, and reporting requirements are provided for each media. The IMP implements additional sampling if Tier II groundwater action levels are exceeded or if surface water action levels/standards are exceeded at POCs. These activities may be in the form of source investigations, requiring expended sampling of water, sediments and soils, or other interim measures such as soil stabilization to ascertain the effects of controls on large disperse contaminated areas whose impact on surface water is not well understood.

For those constituents for which background levels exceed the groundwater action levels, the defacto action level is the background mean plus two standard deviations. In that instance, more frequent sampling and remediation will not be triggered by exceeding the action level. Examples under discussion are uranium (all isotopes) and manganese. Background values are being developed using available data.

Soil

The application of soil action levels to trigger interim actions requires a multi-step approach that includes: soil data value comparison; determination of the AOC; aggregation of the data and comparison to the action levels, evaluation of options including additional characterization (as needed); and selection of management options. An overview of evaluation options available after the initial single data point comparison is shown in Figure 3-9, and summarized below.

Step 1: Soil Data Value Comparison

Compare single soil data values to soil action levels to determine:

- Tier I exceedance

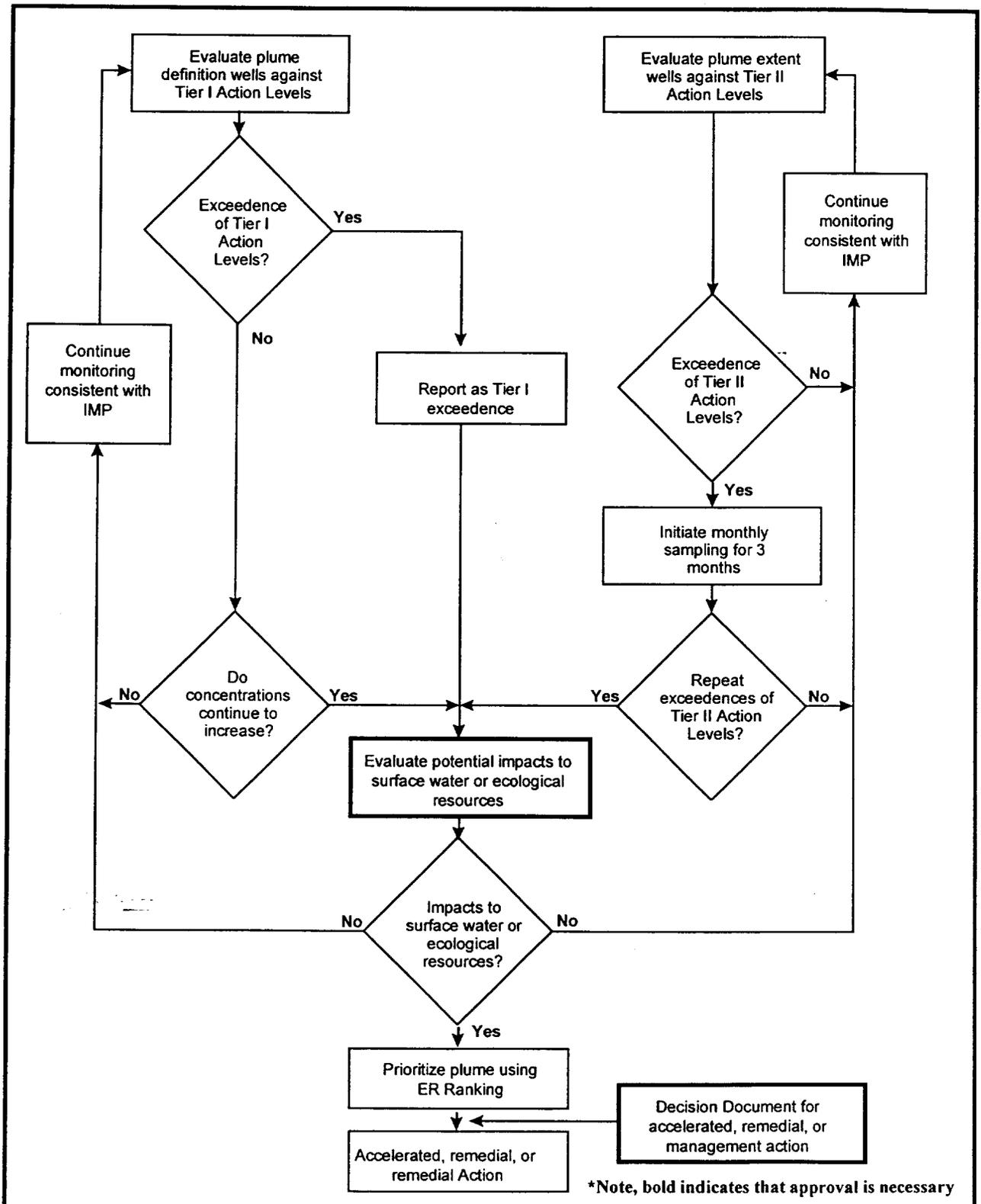


Figure 3-8 Application of Groundwater Action Levels Through the Integrated Monitoring Plan

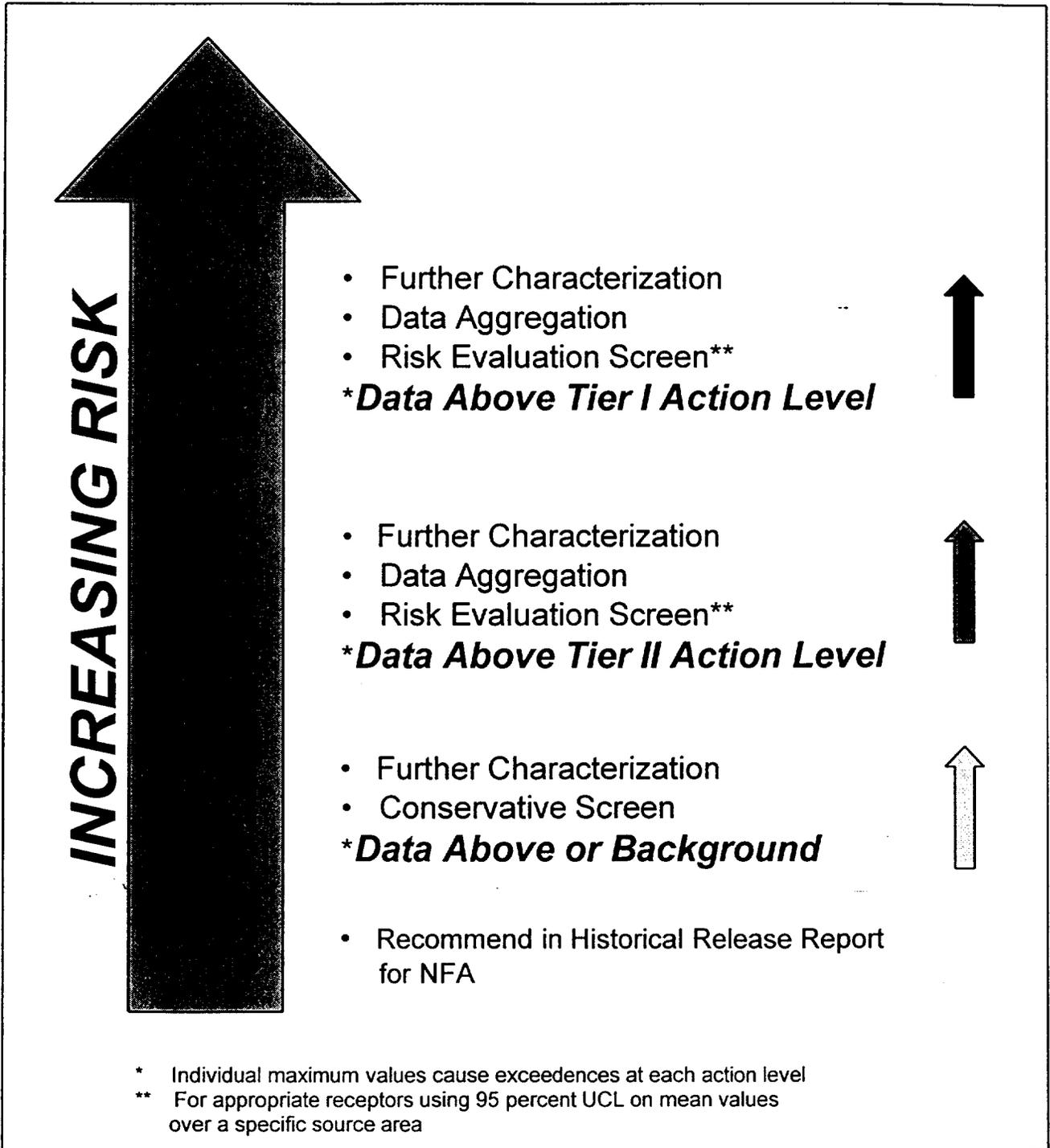


Figure 3-9 Evaluation Options After Data Point Comparison

- The ratio of each soil data value to the Tier I action level is > 1 , or
- The sum of the ratios for either non-radionuclides or radionuclides is > 1
- Tier II exceedance
 - The ratio of each soil data value to the Tier II action level is > 1 , or
 - The sum of the ratios for either non-radionuclides or radionuclides is > 1
- Below Tier II and above background or conservative screen
 - The ratio of each soil data value to the Tier II action level is < 1 , or
 - The sum of the ratios for either non-radionuclides or radionuclides is < 1

Step 2: Data Aggregation

The spacial extent of contamination must be known for a remedial action to be planned and undertaken. The AOC is determined for this purpose. When an evaluation of a Tier I exceedance shows an area of very limited extent (e.g., a "hot spot"), data aggregation may not be appropriate, and an action may be performed. The AOC is determined and the data aggregated as follows:

- Determine AOC with respect to action levels using comparison to:
 - background mean plus 2 standard deviations for inorganics
 - detection limits for organics
 - AOCs will be established based on the spacial data distribution
 - There is no lower limit on the size of an AOC, but no single AOC will exceed 10 acres
- Average data over the AOC, as appropriate
- Use the UCL95 of the mean for comparison to the appropriate action level

Step 3: Evaluation Options

Other evaluation options shown in Figure 3-9 include further characterization or a more detailed risk analysis. If the amount of data available for an AOC is limited, then further characterization may be required. If the result of the action level screen, after data aggregation, is near the breakpoint of, then a more detailed risk assessment may be performed to better define the appropriate action. If the results of the action level comparison are below Tier II, then it may be appropriate to apply the CDPHE conservative screen or another risk evaluation to allow a NFA decision that does not require institutional controls (Section 3.1.5).

Step 4: Management Options

Various management options are available for AOCs depending on the outcome of the

action level evaluation and the media. These are detailed in RFCA Attachment 5. (A general discussion is presented in RFCA Attachment 5, Section 1.3, and action determinations for subsurface and surface soils are detailed in Section 4.3 and in Section 5.3, respectively.)

3.7.3. Performance Objectives

As stated in RFCA, Attachment 5, interim cleanup levels for interim remedial actions will equal Tier I action levels unless a provision of ALF, such as protection of surface water, requires a lower remediation goal. Each project will define its specific remediation goals in the appropriate decision document.

3.8. ANNUAL REVIEWS AND UPDATES

3.8.1. Annual Updates of the Environmental Restoration Ranking

In accordance with RFCA Attachment 4, the ER Ranking will be updated annually, or more frequently if significant new information or updated action levels become available. If no cleanup or investigation activities occur within a fiscal year, the ranking will not be updated that year. With the consensus of all parties, the priority of any ER site can be changed before updating the list, if additional information indicates that this is required.

The original ER Ranking methodology was refined for the 1996 report to make it compatible with RFCA and ALF. Appendix P presents the general methodology for ranking ER sites including media-specific evaluations and chemical score tabulation. The methodology produces a prioritized list of ER sites, and includes both a list of sites that require more information and a list of sites awaiting final disposition.

The ER Ranking will no longer be the sole source for identifying the remedial action sequence. The RFCA Parties recognize that future remedial actions will be addressed based on opportunity and D&D schedules. This opportunistic approach will evaluate the accessibility of an area and what, if any, potential future impacts exist due to other remedial actions in the area. The opportunistic approach will be balanced against the ER Ranking; any time it is determined that an IHSS is impacting human health or the environment, such that immediate action is warranted, then action will be taken as soon as possible.

3.8.2. Annual Updates for the Historical Release Report

The HRR is required by CERCLA §103(c) to describe the known, suspected or likely releases of hazardous substances from RFETS. Original authorization for the HRR was provided in Section I.B.5 of the IAG (DOE, 1991). The HRR, which was published in June 1992,

provided a complete listing of all known spills, releases, and/or incidents involving hazardous substances that had occurred since the inception of RFETS. Section I.B.3 of the IAG established the requirement for DOE RFFO to notify EPA and CDPHE of any newly-identified or suspected releases or threats of release at RFETS, which may threaten human health or the environment. HRR updates were initially required every three months; however, all three parties to the IAG have agreed that DOE RFFO can submit HRR updates annually. The first annual HRR update report was delivered on August 30, 1996.

The process for updating the HRR has been developed through negotiations and document reviews by DOE, EPA, and CDPHE. As shown in the example presented in Appendix Q, the document format includes: a description of the release event; complete physical and chemical descriptions of the constituents released; validated analytical data; responses to the event; fate of the constituents released; action/no action recommendations; comments; and a reference section. If the HRR update entry serves as a NFA recommendation, it should also state the category of NFA being proposed and should specify which criteria from RFCA Attachment 6 justify NFA. Because NFA recommendations based on ALF comparisons require institutional controls, this condition should be started in the HRR entry.

Among other purposes, the HRR updates serve as a basis for approving soil disturbance permits, as an aid in making waste determinations, as an aid in deciding the appropriate level of personal protection equipment for work in an IHSS; tracking IHSS status (e.g., boundary changes); and communicating IHSS information (e.g., analytical information for waste determinations required by EPA and CDPHE). RFCA Attachment 6, No Action/No Further Action Decision Criteria for RFETS, expands the scope of the HRR updates to include information on geographic areas for which a NFA recommendation is warranted.

The NFA decisions recommended in the HRR updates are intended to be "place keepers." An IHSS can be placed on hold until an OU-wide administrative process (PP, CAD/ROD, RCRA Permit Modification, etc.) is initiated.

3.8.3. RFCA Annual Review

RFCA ¶5 states that:

The Parties shall conduct an annual review of all applicable new and revised statutes and regulations and written policy and guidance to determine if an amendment pursuant to Part 19 (Amendment of Agreement) is necessary.

The RFCA Annual Review is completed by July 19 each year by reviewing Attachment 5 and the following major environmental laws, and associated regulations, written policy, and guidance:

- CERCLA

- RCRA
- TSCA
- CWA
- Clean Air Act (CAA)
- NEPA
- Ecology (e.g., Endangered Species Act)
- Radiation
- Radioactive Waste
- Defense Authorization Acts and Appropriation Acts

Questions which should be addressed for each area during the review are:

- Are there any new or revised statutes, regulations, written policy, or guidance
- Has the regulatory change been implemented at the Site
- Does the regulatory change need to be implemented
- Does the regulation change impact RFCA and is an amendment required

The annual review prescribed in RFCA paragraph 5 is sometimes referred to as the "Regulatory Review." In addition to the annual review prescribed in RFCA paragraph 5, the RFCA Parties committed to conducting an internal annual review of the radionuclide soil action levels (RSALS). Questions to be addressed on an annual basis include:

- Is there new scientific information available that would impact the interim action levels
- Has a national soil action level been promulgated within the year? If yes, the parties commit to revisit RFETS interim action levels
- How were the interim action levels applied to the Site over the course of the year
- Have the remedies been effective

For more details, see the Responsiveness Summary for Soil Action Levels released on November 6, 1996.

While not required by RFCA, the RFCA Project Coordinators invite the public to submit any new information relevant to the RFCA or RSALS for these reviews during a 30-day comment period. A public meeting by the RFCA Project coordinators will be held if requested. The results of the annual regulatory review and the annual RSAL review are combined and documented in a RFCA Annual Review report which is completed by the end of August.

In addition to the regulatory annual review and the RSAL annual review, RFCA requires the following items also be reviewed on an annual basis:

- IMP (§267)
- Rocky Flats Sitewide Integrated Public Involvement Plan (RFSIPIP)

- (¶ 281 (g))
- ER Ranking (¶ 79)
- AR (¶ 284)
- Milestones (¶ 147)
- Target Activities (¶ 136)
- Summary Level Baseline (¶141)
- ALF (¶ 5)
- HRR (¶119(1))

An annual review commitment is discussed in the IWMP and the IGD.

For more details on the annual review past processes, see the 1998 RFCA Regulatory/RSAL Annual Review Report.

3.8.4. RFCA Biennial Review

RFCA ¶257 states that:

The parties shall assess the implementation of the Agreement every two years with the first assessment being conducted no later than the second anniversary date of the execution of this Agreement. In this assessment, the parties shall conduct a review of the substantive and procedural requirements for this Agreement, including but not limited to the regulatory approach set forth in Part 8, to determine what measures each Party will take to ensure effective implementation of this Agreement. Such measures may include reallocation of resources, internal reorganization, revised procedures for consultation or internal coordination, and additional training of appropriate staff.

The RFCA Biennial Review will be completed by the second anniversary date of the execution of RFCA (by July 19, 1998) and every two years thereafter. The Biennial review is accomplished by establishing a RFCA Party assessment team charged with evaluating the progress at the Site during the past two years. The assessment team may conduct interviews and/or file and document reviews of parties responsible for the implementation and progress of RFCA and parties who were involved with the initial negotiations of the agreement.

For more details on the biennial review past processes, see the 1998 RFCA Biennial Review Assessment Report.

3.9. DISPUTES

Part 15 of the RFCA enumerates procedures for dispute resolution. RFCA directs the parties to attempt first to resolve disputes informally. Where the dispute cannot be informally

resolved, the RFCA directs the parties to raise the disputed issue quickly. The types of disputes identified in the RFCA include:

- Disapproval of a proposed final document (RFCA ¶s 115, 188)
- Denial or partial grant of a change requested for a regulatory milestone (RFCA ¶s169, 188)
- Stop work orders (RFCA ¶s176, 188)
- Force majeure (RFCA ¶175)
- Permit waivers (RFCA ¶16)
- Proposed permit modifications (RFCA ¶s22, 188)
- Accelerated Actions (RFCA ¶69)
- Decommissioning (RFCA ¶69)
- Determinations that conditions or activities constitute a release or threat of release (RFCA ¶69)
- CAMU (RFCA ¶82)
- Additional work required under CERCLA (RFCA ¶200)
- RFCA interpretation or implementation (RFCA ¶189)
- Amendments to RFCA (RFCA ¶190)
- IMP (RFCA ¶188)
- Imposition of fees by CDPHE (RFCA ¶188)

The RFCA also identifies five classes of disputes and specifies the procedures for each. The five classes of disputes include:

- Decisions by lead regulatory agencies
- Disputes regarding additional work required under CERCLA
- Disputes regarding budget and work planning
- EPA-State disputes regarding site-wide issues
- Disputes regarding overall direction of proposed work

More specifics may be included in the future based on the results of the RFCA Biennial review concerning timing of disputes and recognizing issues as a dispute.

3.9.1. Disputes Regarding Decisions By Lead Regulatory Agencies

The RFCA creates two organizations to perform dispute resolution. The Dispute Resolution Committee (DRC) consists of the following individuals:

- CDPHE – Hazardous Waste and Materials Management Division Director
- DOE – Assistant Manager for Environmental Compliance, RFFO
- EPA – Region VIII Assistant Regional Administrator for Ecosystems Protection and Remediation

The DRC is the first level of formal dispute resolution. The second level of dispute resolution is the Senior Executive Committee (SEC). The SEC consists of the following individuals:

- CDPHE – Director, Office of Environment
- EPA – Assistant Regional Administrator
- DOE – Manager, RFFO

The SEC receives disputes that the DRC has unanimously elevated without resolution or disputes that the DRC has resolved but are under appeal. A schematic of the process is provided in Figure 3-10.

3.9.2. Disputes Regarding Additional Work Required Under CERCLA

Disputes regarding additional work required under CERCLA follow the basic procedures outlined in Figure 3-10. Authority to review appeals of SEC decisions is controlled by RFCA ¶69.

3.9.3. Disputes Regarding Budget and Work Planning

DOE disputes regarding budget and work planning employ the procedures diagrammed in Figure 3-11.

3.9.4. EPA–State Disputes Regarding Site-wide Issues

For purposes of EPA-State disputes regarding Site-wide issues, the State-EPA Dispute Resolution Committee (SEDRC) and the State-EPA Senior Executive Committee (SESEC) have the same composition as the DRC and SEC except the DOE does not vote on those committees. The RFCA identifies the following as Site-wide issues:

- PP/draft permit modifications
- CADs/RODs
- Updates to the ER Ranking
- Updates to the IGD
- Future RSOPs for activities regulated under this agreement that are related to more than one OU

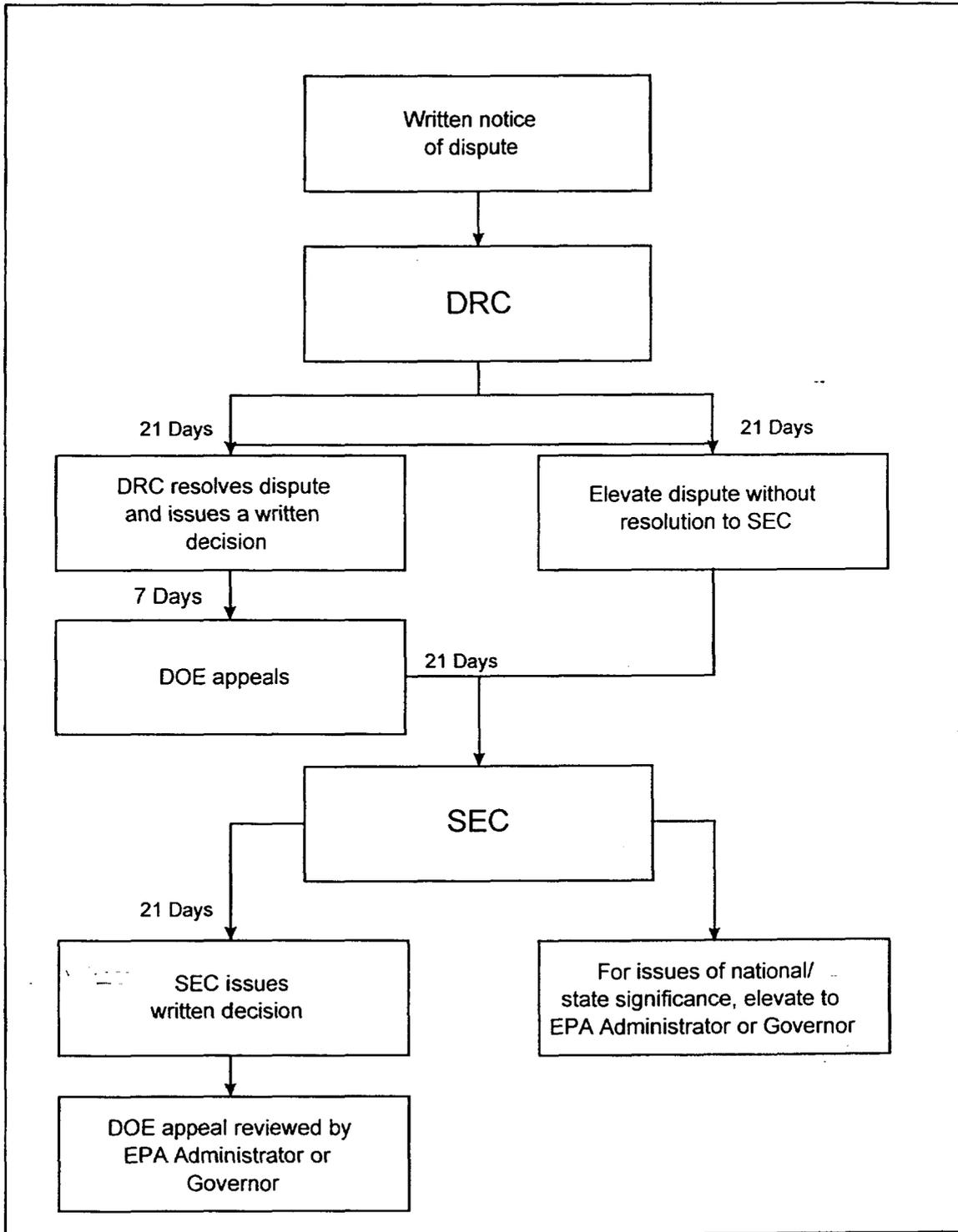


Figure 3-10 Process for Disputes Regarding Decisions by the Lead Regulatory Agency

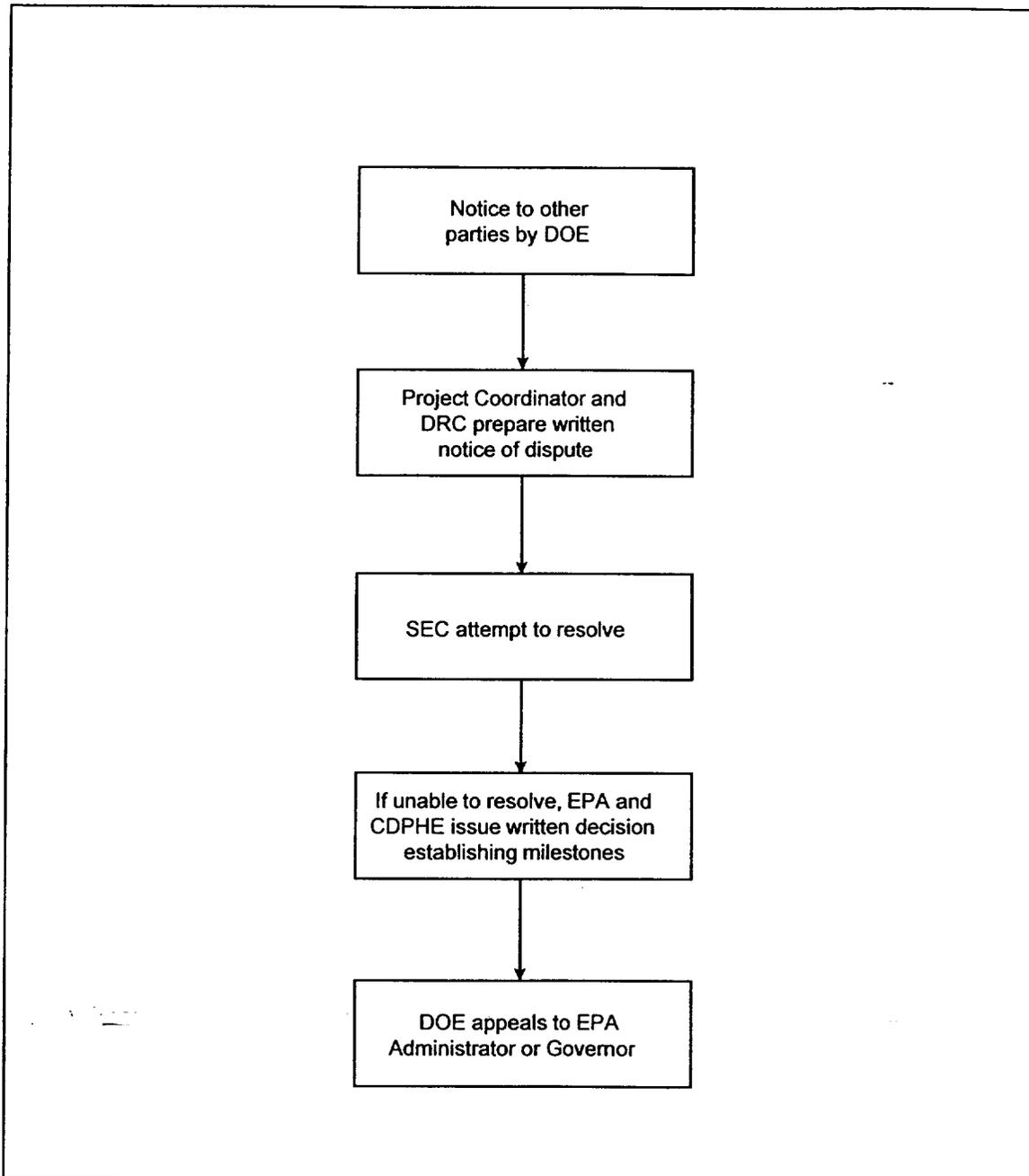


Figure 3-11 Disputes Regarding Budget and Work Planning

- Treatment systems that will treat wastes from the Industrial Area and the Buffer Zone
- Treatability study reports for activities that are related to more than one OU
- IMP
- Updates to the RFSIPIP
- Updates to the HRR

For a complete listing of Site-wide issues see ¶207 of RFCA. DOE RFFO disputes regarding Site-wide issues employ the procedures diagrammed in Figure 3-12.

3.9.5. Disputes Regarding Overall Direction of Proposed Work

If one of the project coordinators is unable to concur with the overall direction of proposed work, dispute resolution follows the procedures outlined in Section 3.9.1 with minor changes. (See RFCA ¶214).

3.10. MODIFICATION OF DECISION DOCUMENTS

RFCA identifies three types of decision modifications: major modifications; minor modifications; and field modifications. Each type of modification is discussed in the following sections.

3.10.1. Major Modifications

Major modifications represent a significant departure from the approved decision document. RFCA defines major modifications as follows:

[A] modification to work that constitutes a significant departure from the approved decision document or the basis by which a decision was previously made or approved, e.g., a change in a selected remedial technology, a technical impracticability determination or a significant change to the performance of Standard Operating Procedures (SOP) (e.g., a tank closure that results in closure in place versus removal) that fundamentally alters the pre-approved procedure. (See RFCA ¶25ar).

Major modifications to work being done pursuant to a CAD/ROD are accomplished by submitting a written request with justification not less than 90 days prior to executing the change. Concurrently, public notice will be provided followed by opportunity for a 30-day public comment period. Following the public comment, the LRA will, if appropriate, approve the change or deny it and provide a written explanation no longer than 30 days after the close of public comment.

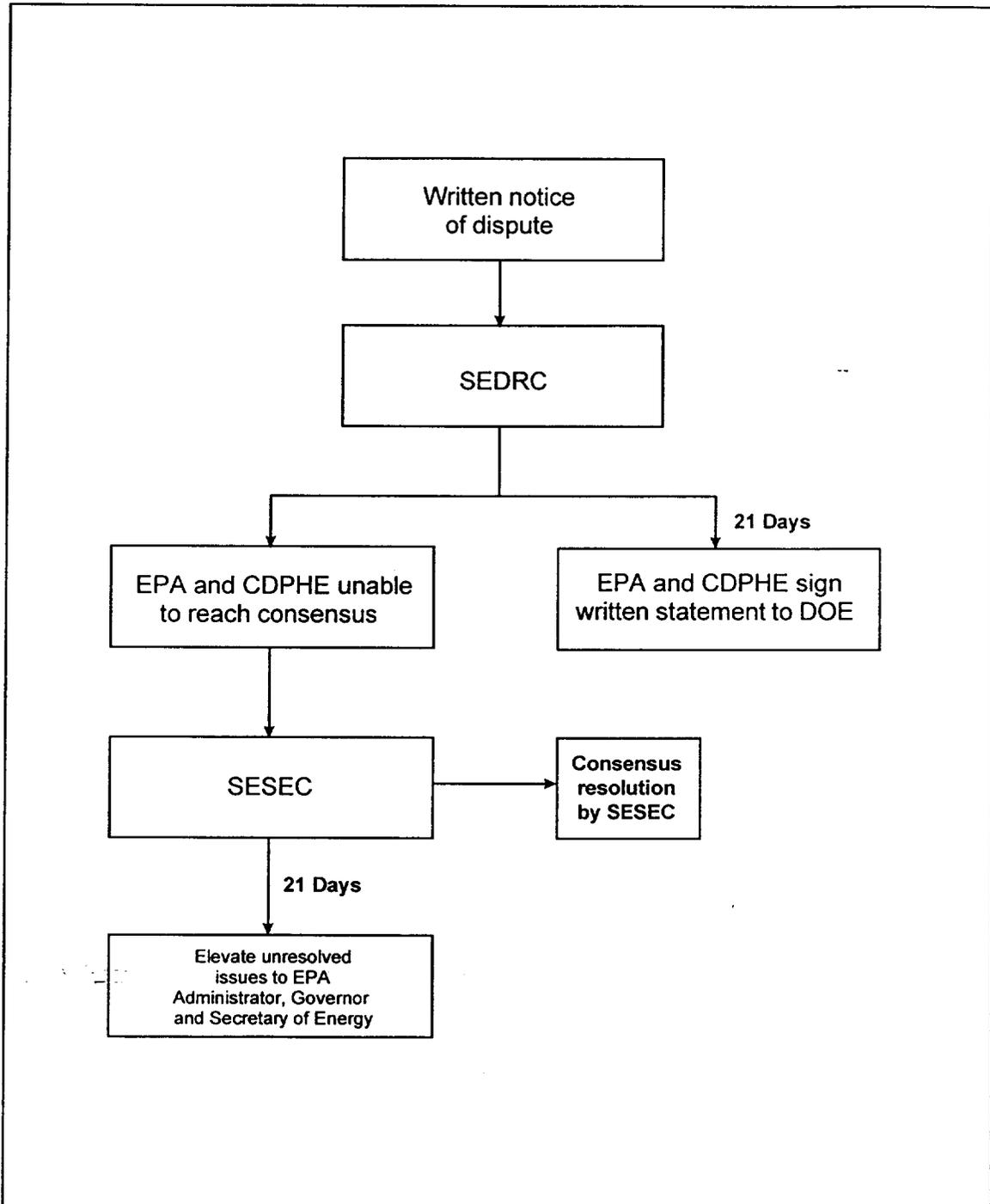


Figure 3-12 Process for EPA/CDPHE Disputes Regarding Site-wide Issues

Major modifications to work being done pursuant to an IM/IRA are accomplished by submitting a written request with justification not less than 30 days prior to executing the change. The LRA will, if appropriate, approve the change or deny it within 21 days of receipt. For PAMs, the written request must be received no less than 14 days prior to executing the change, and the LRA will approve or deny the change within 7 days.

3.10.2. Minor Modifications

Minor modifications are changes that achieve substantially the same level of performance using a different technique. In effect, the change does not affect the final result of the activity. The RFCA defines minor modification as follows:

[A] modification that achieves a substantially equivalent level of protection of workers and the environment and does not constitute a significant departure from the approved decision document or the basis by which a decision was previously made or approved, but may alter techniques or procedures by which the work is completed, e.g., a change in an RSOP that does not change the final result of the activity (e.g., alteration to a tank closure procedure that still results in a clean closure), or a change in operation or capacity of a treatment system that does not cause the system to exceed an effluent limit. (See RFCA ¶25as).

Minor modifications to work being done pursuant to a PAM are accomplished by submitting a written notification with justification not less than 7 days prior to executing the change. Prior approval of a minor modification is not required. If the LRA disputes the appropriateness of a minor modification, a stop work order by the LRA must be issued within seven days of notification.

Minor modifications to work being done pursuant to an IM/IRA are accomplished by submitting a written request with justification not less than 21 days prior to executing the change. For an IM/IRA, the LRA will approve the change or deny it with an explanation in writing within seven days of receipt. In appropriate circumstances, the LRA may waive the 21-day waiting period.

3.10.3. Field Modifications

A field modification is allowed when unanticipated conditions are encountered. Field modifications are permitted, without prior approval, to avoid an imminent threat to human health or safety of the environment, prevent undue delay, or where a cost-effective alternative approach to the safe and protective execution of work is identified. (See RFCA ¶25ag).

Field modifications require DOE RFFO project coordinators give verbal notice to the LRA within one day of making the modification and follow the verbal notice with a written justification within seven days. The LRA may issue a stop work order within seven days of the notification if the work is: inadequate or defective; likely to have substantial adverse impacts on other response action selection or implementation processes; or likely to significantly affect cost, scope, or schedule and requires further evaluation.

3.11. NPL DELISTING

The NPL delisting process begins upon approval and acceptance of the final CAD/ROD(s). The NPL deletion process is described in detail in the Close Out Procedures for National Priority List Sites, Interim Final (EPA, 1995a). For a NFA CAD/ROD at sites that have continued passive remediation or monitoring, the following requirements must be met prior to initiation of the NPL Site delisting process:

- Accelerated action close-out reports for all remedial actions (ER and D&D)
- CAD/ROD(s) approval

Subsequent to submittal of the above listed documents, the five step delisting process will be initiated:

- Prepare the Notice of Intent to Delete with EPA and State review and approval
- Publish the Notice of Intent to Delete in the Federal Register for public comment
- Publish the Notice of Availability for the Notice of Intent to Delete
- Publish the Notice of Deletion along with the comment responsiveness summary in the Federal Register
- Place the final information package in local information repositories

It is possible to partially delist those portions of the Site where NFAs or remedies involving institution controls have been implemented. Deletion of the Site from the NPL may occur before the cessation of operation and maintenance activities specified in the CAD/ROD. Additionally, five-year reviews may be required after delisting.

3.12. SOIL MANAGEMENT

(Reserved)

3.13. WATER MANAGEMENT

The site's procedure for the management of incidental waters, Control and Disposition of Incidental Waters (1-C91-EPR-SW.01 Rev. 2), defines incidental waters to include any waters that may accumulate in excavation sites, pits, trenches or ditches, secondary containments or berms, process waste valve vaults, electrical vaults, steam pits and other utility pits and or telephone manholes. Incidental waters also include fire suppression system discharges and the natural collection of precipitation and stormwater runoff in excavation pits, trenches and depressions. The Control and Disposition of Incidental Waters procedure authorizes management of incidental waters using currently available water treatment systems. See Section 2.6.2 for a complete discussion of wastewater and incidental water management options and procedures.

3.14. INTEGRATED MONITORING PLAN

RFCA Part 21 Sections 267 and 268 require the development of an IMP, which collects and reports the data required to ensure the protection of human health and the environment consistent with the Preamble, and which is compliant with RFCA, laws, and regulations, and the effective management of RFETS resources.

The IMP describes Site monitoring performed for a variety of legal, contractual, and operational purposes and states the agreed-upon types of monitoring, monitoring locations, sampling frequencies and purposes of monitoring to meet RFCA goals. In some instances, the IMP includes monitoring that is already required outside of RFCA. The IMP is designed to provide data to support operational and regulatory decisions, and address the following primary regulatory drivers:

- RCRA
- CERCLA
- CAA
- CWA
- Colorado Water Quality Control Commission standards
- Regulations governing natural resource (ecological) management
- Site-specific monitoring and cleanup agreements
- DOE Orders and technical guidance

The IMP Background Document provides additional information on the DQO decision process and the regulatory framework that drives many of the monitoring decisions at the Site, as well as QA/QC requirements. The IMP Background Document is not subject to enforcement under RFCA.

The monitoring program is designed to accomplish the following:

- Detect and identify contaminants in the targeted environmental medium, and monitor their concentrations
- Identify contaminant sources, and monitor remediation efforts
- Delineate contaminant pathways
- Assess the effects of Site remediation and closure activities
- Protect groundwater from new sources of contamination
- Evaluate any impacts of contamination on surface water

The monitoring program reports exceedences of the ALF, which may lead to active management or remediation. Following implementation of such management/remedial actions, the IMP provides the framework to conduct performance monitoring in accordance with the applicable decision document.

RFCA also specifies that the IMP will be jointly reviewed annually “based on previous monitoring results, changed conditions, planned activities and public input.” Changes to the IMP are subject to approval of EPA and CDPHE.

The prescribed monitoring is performed in four primary areas: groundwater, surface water, air, and ecological systems. A fifth medium, soil, interacts with each of the other media and is also discussed in the IMP; however, because soil is no longer routinely monitored, the discussion of soil mainly concerns project-specific sampling.

3.14.1. Surface Water Monitoring

Surface water monitoring encompasses five areas:

- Site-wide water quality
- Quality of waters within the Industrial Area
- Quality of discharges from the Industrial Area
- Quality of water leaving the Site
- Off-site water quality

3.14.2. Air Quality Monitoring

The air monitoring activities on the Site assist in protecting the public and the environment by detecting and assessing the impacts of Site operations on air quality at and near the Site, characterizing any airborne materials that may be introduced, and monitoring the meteorological conditions that influence the transport and dispersion of airborne materials.

3.14.3. Ecological Monitoring

Ecological monitoring is designed to verify the effectiveness of wildlife protection in the Buffer Zone, including any special-concern species (i.e., threatened, endangered, candidate, proposed, state-listed, or other sensitive species). In addition to the terrestrial vegetation communities, the aquatic communities of the riparian channels and ponds at the Site are monitored for ecological health.

3.14.4. Groundwater Monitoring

Most of the groundwater at the Site is hydraulically connected to surface water. The groundwater monitoring program is designed to accomplish the following:

- Detect and identify contaminants in groundwater and monitor their concentrations
- Identify contaminant sources and monitor remediation efforts
- Delineate contaminant pathways
- Assess the effects of Site remediation and closure activities
- Protect groundwater from new sources of contamination
- Evaluate any effects of contaminated groundwater on surface water

The main (COCs) are volatile organic compounds (VOCs), which originated from the site's historical chemical use and storage during its years of producing nuclear weapons components. Possible sources of contaminants that could affect groundwater include storage tanks, the process wastewater system, drains, sumps, historical storage areas, and spills. The monitoring scope is designed to be conducted before, during and after RFETS operations that may affect groundwater quality.

4. ADMINISTRATION

This section provides an overview of the following:

- The federal budgeting process
- Requirements for budget planning and authorization
- Controlling a project
- Compilation of the AR
- Records management and document control
- Reporting requirements

Section 4.0 has been written in conjunction with RFCA and RFETS standard policies and practices that provide policy and procedural direction for the diverse administrative functions performed at RFETS. The referenced plans, procedures, and documents are intended to supplement the guidance and minimum requirements presented in this section.

4.1. BUDGET PLANNING AND EXECUTION

All RFETS budgeting is performed in accordance with approved RFETS budget planning, formulation, and execution procedures. A summary of the budget planning and execution process is provided on Figure 4-1, General Timeline for Budget, RFETS CPB, RFCA Milestones, and K-H Performance Measures.

Funding at RFETS is based on the Fiscal Year (FY) cycle. The federal FY starts on October 1 and ends on September 30 of the following year. The FY is designated by the calendar year in which it ends. At any given time, four FYs are under consideration:

- PY – Prior Year (the previous FY completed)
- FY (the current FY or the execution year)
- FY+1 (also called the budget year) – where Congress considers DOE's budget request
- FY+2 (the first planning year) – where RFETS activity requirements are identified
- FY+3 through FY+5 (and beyond for some activities) – where budget plans are developed

The budget process has three main phases: (1) executive budget formulation and transmittal; (2) Congressional action; and (3) budget execution and control. Each of these phases is discussed in the following sections.

Final RFCA: IGD
Appendix 3
July 19, 1999

	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December
Federal Budget Process (Row A)	DOE-HQ and OMB negotiate FY+1 budget based on DOE FY+2 submittal the previous spring (B-4). [A-1]				President submits FY+1 budget to Congress. [A-2]	Congressional appropriations hearings, and negotiations with DOE and OMB. [A-3]					President signs FY+1 federal appropriations bills into law. [A-4]				
RFETS Budget/ Planning (Row B)		RFFO gets FY+2 planning, budget call from HQ. [B-1]	RFFO reviews and updates FY+2 budget, including any additional work, and Ten Year Plan, receives input from President's FY+1 budget submittal (A-2). [B-2]			FY +2 budget and planning meetings with stakeholders and DOE-HQ. FY+2 document revisions. [B-3]		RFFO submits FY+2 budget to DOE-HQ. [B-4]	RFFO gives Kaiser-Hill Program Execution Guidance for FY+1. [B-5]	RFFO finalizes FY+1 baseline budget. [B-6]		RFFO sets FY+1 baseline budget, with input from DOE-HQ (A-4), final ISB (C-4). [B-7]			
Integrated Sitewide Baseline (Row C)	RFFO and Kaiser-Hill budget and planning staffs revise draft FY+1 and FY+2 ISB (same staffs are also developing FY+2 budget and Ten Year Plan materials in B-2). [C-1]					Revised FY+1, +2 ISB, mult. Scenarios (B-2, D-4, D-9). [C-2]		Revised FY+1, +2 ISB, mult. scenarios (B-2, D-4, D-9). [C-3]	Final FY+1, FY+2 ISB by Aug. 1, based on site budget (B-6). [C-4]						
RFCA Milestones & Target Activities (Row D)		RFFO, after consulting with Parties and CAB, proposes FY+2 activities and relative priorities. [D-1]	Parties agree, or regulators set, FY+2 Milestones and Target Activities. [D-2]	Dispute Resolution begins for disputed FY+2 Milestones and Target Activities. [D-3]			EPA and CDPHE set FY+2 Milestones even if no consensus exists. [D-4]		Re-evaluate current FY progress, and adjust FY+1, +2 accordingly, input from C-3. [D-5]	Informal DRC-level meeting to continue evaluating FY+1, +2 Milestones and Target Activities. [D-6]		Final FY+1, +2 agreement; input from final budget (B-7). [D-7]	FY budget allocation; Parties consult on FY, FY+1 Milestones and Target Activities. [D-8]	Re-establish FY and FY+1 Milestones and Target Activities, or begin Dispute Process. [D-9]	
Kaiser-Hill Performance Measures (Row E)					1st cut at FY+1 PMs, based on C-2. [E-1]	RFFO and K-H agree on selection criteria, scope. [E-2]		2nd cut at FY+1 PMs, based on C-3. [E-3]	Negotiate FY+1 PMs, starting July 1. [E-4]		Final FY+1 PMs; requires step B-7. [E-5]	Maintain FY Performance Measures. [E-6]			
Regulatory Agency Reviews (Row F)		RFFO shares FY+2 budget call to Parties, CAB (B-1). [F-1]		RFFO shares FY+1 budget, based on A-2. [F-2]	RFFO briefs CAB Parties on FY+1 impacts. [F-3]				Parties evaluate current FY projects, especially those critical to RFCA Milestones. [F-4]			RFFO briefs Parties on FY allocations. Parties evaluate FY, FY+1 projects. If no agreement is reached within 60 days after budget allocation, regulators set milestones and Parties begin Dispute Resolution Process. [F-5]			

Figure 4-1 General Timeline for Budget, CPB, RFCA Milestones and K-H Performance Measures

4.1.1. Executive Budget Formulation and Transmittal

The budget formulation process begins at least 14 to 18 months before the budget request is transmitted to Congress by the President. DOE RFFO prepares its budget request based on the guidelines provided by the President through the Office of Management and Budget (OMB) and through DOE Headquarters (HQ). (See Figure 4-2).

The budget is developed in the context of a multi-year budget planning system that includes coverage of the current FY as well as the FYs beyond FY+1. In FY 1997, the planning process was expanded to include coverage of all project years required to complete the RFETS mission and is not limited to four FYs. The system requires that broad budgetary goals, agency spending, and employment targets be established beyond the budget year.

During the formulation of the budget, there is a continual exchange of information, proposals, evaluations, and policy decisions among DOE RFFO, DOE HQ, OMB, and the President. Decisions concerning the upcoming budget are influenced by the results of budget validation reviews, previously enacted budgets (including the one being executed by the agencies), and the reactions to the last proposed budget under consideration by Congress. In accordance with current law, the President submits final agency budget requests to Congress no later than the first Monday in February.

4.1.2. Congressional Action

Between February and September 30, Congress is considering all federal agency budget requests. If Congress does not complete its work before the start of the FY (October 1), then a Continuing Resolution (CR) may be enacted for a given amount of time to keep agencies operating at the same level as the prior FY. During a CR, no new projects or activities may be started.

At any time, Congress can change funding levels, eliminate programs, enact legislation that authorizes an agency to carry out a program, or add programs not requested by the President or an agency. After the appropriation process, the program may be realigned through a reprogramming request. Both actions require OMB and Congressional approval.

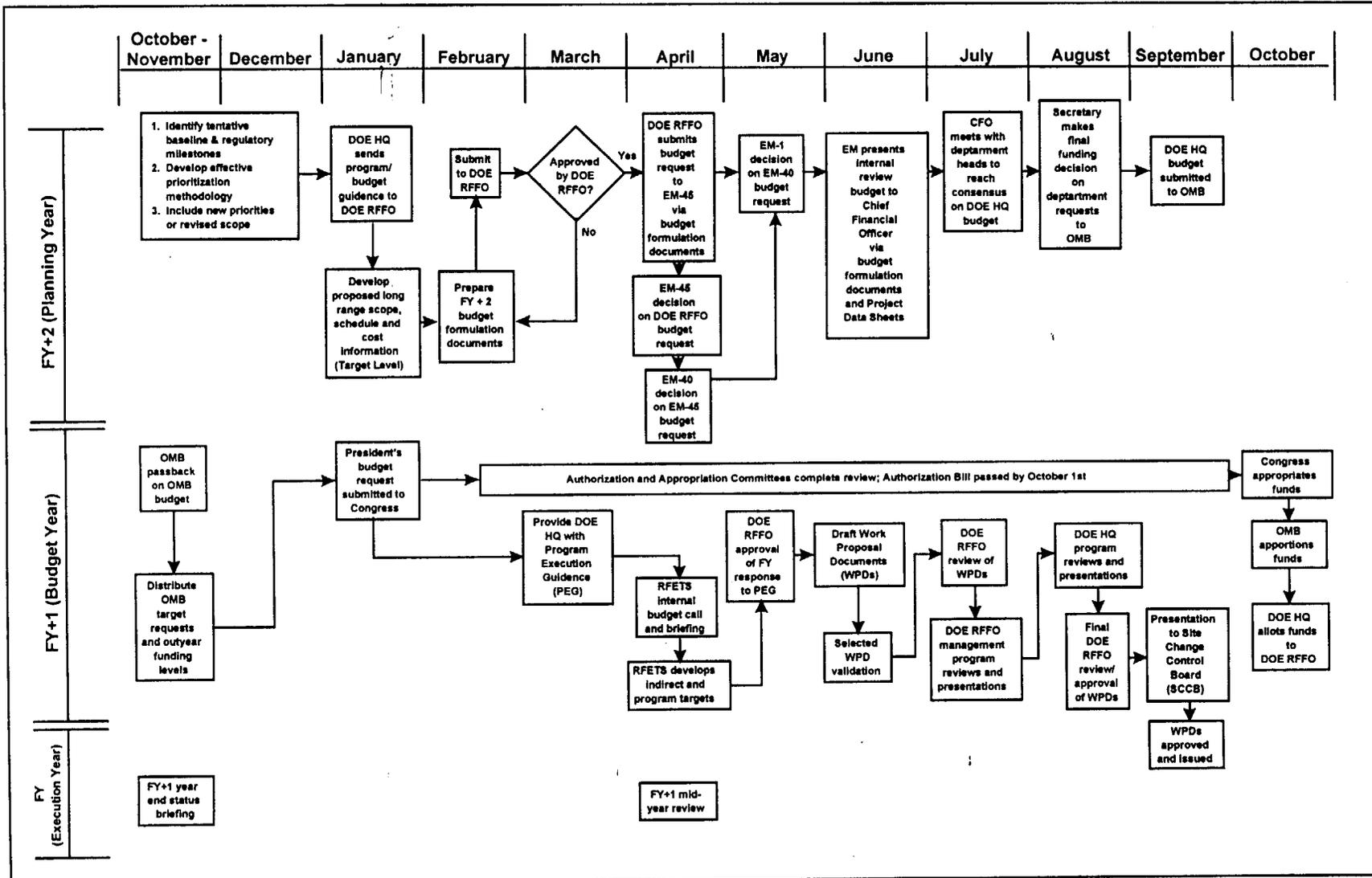


Figure 4-2 The Federal (DOE) Budget Execution Process

4.1.3. Budget Execution and Control

Once approved, the President's budget, as modified by Congress, becomes the basis of the financial plan for the operations of each agency during the FY. The sequence is as follows:

- The Director of OMB apportions appropriation (funding) to DOE HQ by time periods and by activities
- DOE HQ allocates funds to the various sites across the DOE complex, which include RFFO

For the remainder of the FY, DOE RFFO budget execution focuses on monitoring the site contractor's progress in performing RFETS cost baseline activities.

4.2. PROJECT PLANNING AND BUDGET PROCESS

To accomplish work at RFETS, the internal authorization basis process is closely coupled with RFETS CPB, and the provisions of the RFCA provide the planning and scope for achieving the RFETS Vision:

- To achieve accelerated cleanup and closure of RFETS in a safe, environmentally protective manner and in compliance with applicable state and federal environmental laws
- To ensure the RFETS does not pose an unacceptable risk to the citizens of Colorado or to the site's workers from either contamination or an accident
- To work toward the disposition of contamination, wastes, buildings, facilities and infrastructure from RFETS consistent with community preferences and national goals

4.2.1. Project Planning/Project Scoping

The RFETS system incorporates methods and procedures for planning, authorizing, and controlling a project so that work can be performed to defined specifications, schedule, and budget. The system defines the processes for:

- Organizing and defining work
- Assigning, planning, and authorizing work

- Measuring work performed
- Analyzing and reporting costs of work performed
- Controlling changes to an established baseline by use of a Site Change Control Board

All RFETS project planning is done in accordance with approved site procedures.

Scope

The project scope formally establishes the project mission, functional objectives, scope of work, technical approach, regulatory requirements, and assumptions. Project scope is determined by the project mission needs, objectives, and regulatory requirements. Project scope is outlined in a Project Baseline Description (PBD).

Schedules

The critical path method of scheduling is used for establishing schedule baselines. Total life-cycle of a project is scheduled; however, near-term work may be in greater detail than out year work. Ongoing coordination between EPA, CDPHE, and DOE RFFO will occur to determine the appropriate target dates for intermediate milestones for multi-year projects.

Closure Project Baseline

All work performed by DOE at RFETS will be scheduled and integrated by inclusion in a controlled master resource-loaded critical path method schedule, referred to as the CPB, that will include the life-cycle schedule of all the work scope required to achieve the RFCA Vision. Schedule detail will reflect a "Rolling Wave" method of scheduling, which produces a decreasing level of detail as time is extended from the current FY. The CPB will be used to direct and manage the RFETS work efforts while being the basis for current year and out year budgeting and planning. All scheduled reports, both internal and external (DOE, EPA, CDPHE, stakeholders, etc.) will be produced from the CPB. Individual schedules not incorporated into the CPB will not be recognized.

The CPB is the basis against which planning and project performance will be evaluated. A cost- and resource-loaded schedule allows the evaluation of planning alternatives as they relate to funding and resource constraints, while insuring the plan maintains the logical sequence of activity execution as the plan proceeds through multiple iterations. The CPB will also be used to manage the project and evaluate performance in prior and current fiscal years. The current working schedule and budgets will be updated using actual costs and schedule status to be compared to the baseline in the calculation of cost and schedule variances.

RFETS has developed a CPB that describes activities necessary to achieve the end of the Intermediate Site Condition as defined in the RFCA Preamble. The CPB reflects planning assumptions that are agreed to by DOE RFFO, EPA, and CDPHE. Changes to the project baseline that could lead to delays of important milestone completion dates will be approved by

DOE, EPA, and CDPHE as defined in RFCA. The CPB shall be reviewed monthly and updated as required, and annually at a minimum.

Closure Project Schedule

The Closing Project Schedule (CPS) is a schedule depicting activities necessary to achieve the end of the Intermediate Site Condition. This schedule will reflect data found in the CPB. The Expanded Management Summary Schedule is a summary representation of the CPS.

RFCA Change Control

The RFCA change control process is the mechanism used by DOE RFFO, EPA, or CDPHE to assure that scope, schedule, or cost changes are reviewed for need, justification, and impact in a structured manner, and to assure that all parties can fulfill their responsibilities. This process is defined in the RFCA, Part 10 (Changes to Work). If the change will affect regulatory milestones, DOE RFFO will identify proposed modifications to the regulatory milestones in accordance with RFCA, Part 12 (Changes to Regulatory Milestones) and notify the other parties of modifications to the baseline.

Milestones

EPA and CDPHE will establish milestones from the CPB; no more than 12 milestones per FY for FY, FY+1, and FY+2. Milestones will be designed to:

- Provide accountability for key commitments
- Ensure adequate progress at the site
- Provide adequate scope drivers
- Facilitate budget planning and execution

EPA and CDPHE may also establish a few key out year milestones (i.e., beyond FY+2) to provide long-term drivers for achieving the end of the RFCA Intermediate Site Condition (See RFCA preamble for description).

Regulatory Milestone Change Control Process

A regulatory milestone that is established according to the provisions of RFCA shall be changed upon receipt of a timely request for change, provided good cause exists. Requests for change shall be submitted no less than 30 days before the date of the regulatory milestone except for changes sought on the basis of a force majeure. Consistent with ¶165 of RFCA, any request for change shall be submitted in writing and shall specify:

- The regulatory milestone that is sought to be changed
- The length of the change sought
- Good cause(s) for the change
- Any related regulatory milestone or target date that would be affected

if the change were granted

4.3. REGULATOR INTERACTION IN THE BUDGET AND PLANNING PROCESS

This section provides an overview of regulatory participation in the RFETS budget and planning process for FY, FY+1, and FY+2. Refer to Part 11, Subpart A, ¶s 133-149 of the RFCA for detailed information regarding these interface points

4.3.1. FY Activities

FY activities are those that occur during the current FY. These activities are as follows:

April through May

Within 30 days following the completion of DOE annual mid-year management review, DOE RFFO will brief EPA and CDPHE on any decisions that affect the CPB and RFCA regulatory milestones

July through September

DOE, EPA, and CDPHE will evaluate the current schedule, cost and funding status of all projects in progress in the just-ending fiscal year, particularly those activities or projects that are on the critical path to meet regulatory milestones in the upcoming two fiscal years

In addition, the DOE, CDPHE, and EPA RFCA Project Coordinators will meet periodically through the FY to monitor and discuss the status of projects scheduled during the year. DOE RFFO will promptly notify EPA and CDPHE of any proposed site-specific or programmatic action, if such action may have an impact on DOE's ability to meet the baselines or regulatory milestones of RFCA.

4.3.2. FY+1 Activities

FY+1 activities are those that are being planned during the current FY and will be performed in the next FY. These activities include the following.

January through May

- DOE RFFO will submit to CDPHE, EPA, and the RFCAB a summary of the DOE budget request

July through October

- DOE RFFO will provide EPA, CDPHE, and the RFCAB with copies of the Program Execution Guidance (PEG)

- DOE RFFO will consult with EPA and CDPHE in the development, verification, and review of draft Work Proposal Documents (WPDs) and CPB for FY+1.
- DOE RFFO will review and revise CPB and regulatory milestones and target activities as necessary

October through December

- DOE RFFO and DOE HQ will brief EPA and CDPHE on the federal budget appropriation and tentative funding
- No more than 60 days after OMB apportionments DOE funds, DOE RFFO, EPA, and CDPHE will evaluate schedule, cost, and funding status of projects for the new FY to incorporate information into budget, milestone, and target DOE activities

If there is a delay in Congressional appropriations beyond the first day of the new fiscal year, DOE RFFO will inform EPA and CDPHE of any CRs, and of the impact of the delay on its ability to meet regulatory milestones and other requirements of the RFCA. EPA and CDPHE will review these actions and may recommend reallocation of available funds.

4.3.3. FY+2 Activities

FY+2 activities are those which are being planned during the current year and will be performed two years from the current FY.

January through April

- Within one week after DOE HQ issues planning/budget guidance, DOE RFFO will provide a copy of guidance to the EPA and CDPHE
- Within three weeks after DOE RFFO receives target level funding, DOE RFFO will provide its preliminary RFCA impact assessment
- Before submittal of the FY+2 budget request to DOE HQ, FY+2 baselines, regulatory milestones and target activities will be established or revised

4.3.4. Roles and Responsibilities

The budgetary roles and responsibilities for DOE RFFO include:

- Requesting necessary funds to meet RFCA regulatory milestones, target activities, and other commitments/requirements
- Interacting with DOE HQ regarding budget formulation document submittals, the presidential budget submittal, and problems with the RFETS cost baseline and budget
- Communicating RFETS objectives and priorities
- Conveying information and guidance to CDPHE, EPA, and the RFCAB

DOE RFFO's role focuses on maintaining the RFETS's CPB, preparing budget formulation documents, and ensuring that projects have the proper authorization basis for planning and execution. The role of CDPHE and EPA focuses on evaluating the CPB and funding status of projects to determine if the RFETS budget is adequate for meeting RFCA requirements and other environmental laws, and to establish milestones and target activities for the budget and planning years. EPA and CDPHE should be involved early in the budget process during the consultative process set forth in RFCA. All RFCA Parties have the responsibility to identify areas in the CPB where cost savings can be achieved to free funding for additional risk reduction activities.

4.3.5. Cost Savings Initiatives and Productivity Improvements

EPA and CDPHE shall consult with DOE RFFO during the RFETS budget planning and execution processes and other times deemed appropriate to identify and evaluate opportunities and incentives to improve productivity and reduce costs associated with activities at RFETS.

Standards, requirements, and practices shall be regularly reviewed to determine that activities at RFETS are conducted in a manner that is sufficient to achieve compliance with requirements and to protect workers, the public, and the environment, and necessary to accomplish the RFCA preamble objectives expeditiously and efficiently. Refer to RFCA ¶s 158-162 for additional guidance on cost savings and productivity improvements.

4.4. ADMINISTRATIVE RECORD/RECORDS MANAGEMENT/DOCUMENT CONTROL

4.4.1. Administrative Record

The AR is the compilation of documents relied on by DOE RFFO to select a response action for cleanup of a hazardous waste site. In accordance with Section 113(k) of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, AR files will be maintained for CERCLA response actions at or near RFETS, following EPA policies and guidelines. DOE RFFO is ultimately responsible for AR contents for RFETS.

The AR will be kept in accordance with CERCLA, NCP, and OSWER Directive 9833.3a-1 (EPA, 1994a) *Guidance on Administrative Record for Selecting of CERCLA Response Actions* and AR Implementation Procedure 2-S65-ER-ADM-17.02 *Administrative Record Document Identification and Transmittal* (RMRS, 1995a). An AR shall be established for each OU, for each ER action, and for each decommissioning action. Documents necessary to be included in each AR are delineated in OSWER Directive 9833.3a-1 (EPA, 1994a). (Appendix R).

RFETS procedure 1-F78-ER-ARP-001 *CERCLA Administrative Record Program* (RMRS, 1994b), establishes and defines the requirements and responsibilities for the compilation and maintenance of CERCLA AR files and completed ARs. Any future changes to AR policies and

guidelines affecting the AR files shall be discussed by DOE RFFO, EPA, and CDPHE and an agreement shall be reached on how best to accommodate those changes.

EPA, after consultation with CDPHE when necessary, shall make the final determination of whether a document is appropriate for inclusion in an AR. EPA and CDPHE shall participate in compiling the AR by submitting documents to DOE RFFO as EPA and CDPHE deem appropriate. DOE RFFO will forward these documents to the RFETS AR files. Every AR file will be reviewed and approved by DOE RFFO, EPA, and CDPHE (i.e., Site Technical Administrative Record Review [STARR]) before the file is closed at the signing of the appropriate decision document.

Four information repositories have been established to provide the public with access to the AR. A copy of the AR is accessible to the public at times other than RFETS normal business hours through the Public Reading Room at Front Range Community College.

Information Repositories:

U.S. Environmental Protection Agency
Region VIII
Superfund Records Center
999 18th Street, Suite 500
Denver, Colorado 80202-2466
(303) 312-6473

Rocky Flats Citizens Advisory Board
9035 Wadsworth Parkway
Suite 2250
Westminster, Colorado 80021
(303) 420-7855

**Colorado Department of Public Health
and Environment**
Information Center, Bldg. A
4300 Cherry Creek Drive South
Denver, Colorado 80220-1530
(303) 692-3312

U.S. Department of Energy
Rocky Flats Public Reading Room
Front Range Community College Library
3645 West 112th Avenue
Westminster, Colorado 80030
(303) 469-4435

4.4.2. Records Management

The objectives of the RFETS records management program are to identify, capture, protect, and maintain active project records for both ER and decommissioning; index active records to ensure efficient and effective retrievability; safeguard records to prevent loss, damage, or unauthorized accesses; and turn over inactive records to the RFETS for disposition in accordance with approved record retention schedules. Final records disposition shall be approved by the DOE RFFO designee and be consistent with the CERCLA, RCRA, CHWA, and DOE RFFO records retention schedules, whichever is longer. DOE shall make all such records or documents available to CDPHE and EPA upon request.

RFETS procedure 1-V41-RM-001, *Records Management Guidance for Records Sources* (RMRS, 1996c), provides detailed guidance on the RFETS Records Management Program. Procedures for

implementation of the records management program elements identified in the above procedure are: (1) RM-06.03 *Records Receipt, Processing, Retrieval, and Disposition* (RMRS, 1997a); and (2) RM-06.02 *Records Identification, Generation, and Transmittal* (RMRS, 1997b).

4.4.3. Document Control

Document control is the process of managing the authorized release of specific documents and changes to ensure that only the most current, approved-for-release copies of controlled documents are used to perform program activities, including those that prescribe activities affecting quality and safety. RFETS procedure 1-77000-DC-001, *Document Control Program* (RMRS, 1993), establishes requirements responsibilities, and instructions for the identification and control of controlled documents.

4.5. REPORTING

All reporting shall be done in accordance with established DOE HQ and DOE Environmental Management policies and requirements. DOE-stipulated elements focus on cost, schedule, and technical performance against approved baselines. Additional reporting requirements established by DOE RFFO are provided in RFETS policy 1-R97-F&A-MCS-001, *Management Control Systems and ER Project Control Management Procedures and Requirements* (RMRS, 1996d).

RFCA Project Coordinators will meet at least monthly to discuss accomplishments, work in progress and anticipated work, potential changes to the baseline, implementation difficulties, compliance issues, opportunities for streamlining, and other matters of importance to implementation.

Quarterly, DOE RFFO will provide EPA and CDPHE with a progress report that describes progress toward implementation of activities covered by RFCA. Whenever possible, existing reports and databases will be used to fulfill this reporting requirement. Upon request, DOE RFFO will provide EPA and/or CDPHE with copies of project status reports on a monthly basis.

5. PUBLIC INVOLVEMENT AND STAKEHOLDER SUPPORT

5.1. BACKGROUND

Public involvement is an important part of the RFCA Vision. An effective public involvement strategy, as part of routine project planning, is required by both law and DOE policy for many project activities. In addition, it is the best management practice on any project potentially impacting public health. This section describes the RFETS approach to involving stakeholders in project decision making as RFETS progresses toward cleanup and closure.

All public involvement activities will be conducted in compliance with applicable requirements under NEPA, CERCLA, RCRA, and DOE Orders and guidelines. Those requirements and guidelines are identified in the RFSIPIP.

5.2. PUBLIC INVOLVEMENT OBJECTIVES

The RFSIPIP is designed to increase stakeholders' understanding of the site's ER and waste management programs and to open avenues for stakeholders to participate in RFETS decision-making processes. This program has been developed to:

- Provide accurate and timely information about environmental contamination and hazardous materials, cleanup plans, monitoring, and implementation progress
- Ensure stakeholders have the opportunity to provide input regarding planned actions and to have their opinions considered in decision-making
- Ensure DOE RFFO and its contractors understand and take into account stakeholder values and concerns
- Meet RCRA, CERCLA, NEPA, and RFCA public involvement requirements

Public involvement in the decision-making process will be conducted using the Rocky Flats Public Participation Guidance, which was created to ensure public involvement at RFETS meaningful (i.e., influential in the site decisions) and to optimize the effectiveness of public involvement efforts.

Additionally, public participation will adhere to the following guidelines and principles as outlined in RFCA:

- Ongoing consultation with the local elected officials
- Consistency with the RFTES long-term vision, mission, and budget
- Clear linkage to a decision-making process
- Adherence to state and federal requirements

- Stakeholder consultation on significant public policy issues, even if there is no legal requirement for involvement
- Inclusion of various and diverse community groups and people with varying levels of knowledge and understanding of RFETS issues

5.3. PUBLIC INVOLVEMENT PLANNING

It is the responsibility of all managers at RFETS to plan for the appropriate level of stakeholder involvement as a primary element of site closure projects. Stakeholder involvement before selection of alternatives ensures decisions are made with full awareness of all relevant issues. Failure to involve stakeholder input at appropriate times can result in costly project delays and reformulation of plans. In developing a public involvement strategy, managers should base decisions about the level and timing of public involvement on the following:

- Probable impact on stakeholders
- Likelihood of value conflicts among stakeholders
- Level of perceived risk to stakeholders
- Uneven distribution of impacts of alternatives among stakeholder groups

Managers should consult with the DOE RFFO Office of Communication (OOC) during the project planning stages to develop a strategy for involving the public in project decisions, as well as to develop the tools necessary to implement that strategy. The OOC will prepare information for managers' use while engaging the public. The OOC coordinates outreach programs (e.g., Speakers Bureau and Tours and Visits) to promote additional face-to-face interaction.

Project-specific public involvement strategies, while not required for all projects, will provide the framework for soliciting stakeholder input. These strategies, or "mini" public involvement plans should identify the desired outcome of the strategy, the primary audience, the message, sensitive issues, and tools to be used.

Once the level of public involvement has been identified, it is important to communicate clearly what role the stakeholders have in the decision making process, to explain how the public fits into that process, and how public input will affect the decision. As a project progresses through planning into implementation, the extent to which public input can be effective will decrease. Accurately communicating the appropriate level of involvement can reduce misunderstanding.

5.4. PUBLIC INVOLVEMENT TOOLS

Using the tools below, the public involvement strategy will adhere to the objectives and meet requirements set forth in NEPA, RCRA, CERCLA, RFCA, and DOE Orders and guidelines. Other tools and resources can be developed and used as needed to promote effective public involvement. The OOC supports management in the proper use of these tools:

Briefings, Presentations & Discussions

Upon request, and to the extent possible, subject matter experts will meet with schools, groups, elected officials, regulators, individual stakeholders, and stakeholder organizations. The OOC prepared presentations on numerous topics are available for use.

Public Hearings & Public Information Meetings

The Site schedules public hearings and/or meetings as needed to disseminate information and accept feedback on key activities. Hearings usually are scheduled close to the midpoint of a public comment period. Public Information Meetings are not necessarily tied to specific public comment period and incorporate as many topics as appropriate to warrant the meeting. The OOC will plan, coordinate, and facilitate these public forums.

Employee Meetings

Employees are among the most important stakeholders at RFETS. It is important to keep employees informed and ensure they understand how their work contributes to the successful cleanup and closure of the site. Town hall meetings, cascading meetings, Manager's Information Meetings, staff meetings, and written and electronic newsletters provide to keep employees informed and solicit employee feedback about site activities.

News Releases and Community Advisories

The OOC disseminates information to news media outlets and key stakeholders and groups. In addition, the OOC serves as the point of contact for inquiries from news media and stakeholders.

Fact Sheets

The OOC creates brief informational materials (usually one or two pages in length) that identify key elements of specific projects and activities. Fact sheets describe processes and activities to assist stakeholders in understanding the projects.

Mailing List(s)

RFETS maintains a facility mailing list of about 2,000 stakeholders interested in obtaining information about the Site. Separate mailing lists (e.g., RCRA mailing lists) are maintained that contain the names of smaller numbers of stakeholders interested in receiving information on specific topics.

Public Tours

The OOC coordinates, plans, and conducts tours of the site to allow interested parties a first-hand look at work being accomplished at RFETS.

Speakers Bureau

Knowledgeable site employees visit schools, civic groups, stakeholder organizations, and other groups to inform small audiences of site activities relevant to their interests.

Reading Rooms

There are four locations throughout the Denver metropolitan area where interested parties can access information about RFETS. The Rocky Flats Public Reading Room contains thousands of documents relating to RFETS and other DOE weapons complex sites.

Electronic Access to Information

Site information is available through Internet and Intranet access. Information for public dissemination will be made available on-line for stakeholders. An option of submitting comments on-line is in planning.

5.5. CONTACT NUMBERS

Involving the public in RFETS decisions and clearly communicating stakeholders' roles in affecting decisions are paramount to successful Site closure. Regardless of legal requirements for public involvement, involving the stakeholders in decision-making building public trust and confidence that RFETS is being managed in the public interest. Teamwork between project managers, the OOC, and affected stakeholders will promote an effective strategy and use of communication tools to inform and involve stakeholders in the project activities.

OOC Contact Telephone Numbers

DOE Communication	(303) 966-5993
K-H Communication	(303) 966-7412

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Appendix A

RFETS ENVIRONMENTAL CHECKLIST

ENVIRONMENTAL CHECKLIST
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
Form Revised 5/22/97

1. Project Name:
2. Date Submitted:
3. NEPA Tracking No.:
4. Charge Number:
5. WPD Number:
6. Project Manager:
7. Initiating Line Manager:
8. Preparer (Bldg., Ext.):
9. Project Description (be as detailed and specific as possible, use the checklist as a guide for issues to be addressed in the description of the project, submit to K-H NEPA for review):

Reviewed for Classification/UCNI

By: _____

Date: _____

YES

NO

NOTES

10. Will the project require or potentially require permit application(s) or permit modification(s) under the:

- A. Clean Air Act? (e.g., APENs, Rad-NESHAP, and fugitive dust)
- B. Clean Water Act? (e.g., discharges, and chemicals)

11. Resource Conservation and Recovery Act (RCRA):

- A. Does the project generate, treat, store, or dispose of hazardous, radioactive, or mixed waste?
- B. Does the project involve a removal?
- C. Does the project include RCRA closure?
-partial?
-full?
- D. Does the project include excavation or capping to meet RCRA requirements?
- E. Will cost and duration stay within \$5 million and 60 months? (Explain in Section 9, Project Description)
- F. Will a RCRA permit or permit modification be required?

12. Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- A. Is the project part of an activity required in the Rocky Flats Cleanup Agreement?
- B. If the answer to A. is YES, is the project described in a document that has been approved by EPA or CDPHE, or will be approved by at least one of those agencies before project work begins?
- C. If the answers to both A. and B. are YES, has that document been reviewed by the National Environmental Policy Act (NEPA) Group for inclusion of NEPA values?
- D. Has the project evaluated the potential for RFCA or IM/IRA performance monitoring obligations, and if appropriate, taken steps to implement those obligations through the IMP?

13. A. Will the project require performance monitoring per RFCA or IA IM/IRA requirements? _____
- B. If the answer to A is YES, have appropriate steps been taken to implement those requirements through the Integrated Monitoring Plan? _____
14. Will the project create TSCA-regulated waste (asbestos & PCBs)? _____
15. Have all steps been taken to ensure compliance with procedures 1-G98-EPR-END.04, Migratory Bird Evaluation and Protection, and 1-D06-EPR-END.03, Identification and Protection of Threatened, Endangered, and Special-Concern Species? _____
16. Will the project be in or near an Individual Hazardous Substance Site (IHSS)? _____
17. Will this project construct or require a new or expanded waste disposal, recovery, storage, or treatment facility? _____
18. Is the project part of an agreement between DOE and another federal or state agency? (Specify and explain any schedule urgency and deadlines in Section 11, Project Description.) _____
19. Is the project:
- A. A new process, building, etc.? _____
- B. A modification to an existing process, building, etc.? _____
- C. An installation of capital equipment _____
20. Will the project be located in, or adversely affect designated:
- A. Wetlands? (i.e., dredge, fill operation) _____
- B. Natural areas? _____
- C. Prime agricultural land? _____
- D. Special water sources? _____
- E. Historical, archaeological, or architectural sites or buildings? (NHPA, HUD) _____
- F. Impact surface water or groundwater _____

- | | | | |
|-----|---|-------|-------|
| 21. | Will the project result in, or have the potential to result in, long term changes to the environment? | _____ | _____ |
| 22. | Will the project result in changes or disturbances of the following existing conditions: | | |
| | A. Noise levels? | _____ | _____ |
| | B. Solid wastes? | _____ | _____ |
| | C. Radioactive wastes? (including disturbed or excavated contaminated soil) | _____ | _____ |
| | D. Hazardous waste? | _____ | _____ |
| 23. | Will the project have effects on the environment which are likely to be publicly controversial? | _____ | _____ |
| 24. | Will the project establish a precedent for future projects that will have significant effects, or represent a "decision in principle" about a future consideration? | _____ | _____ |
| 25. | Is the project related to other projects or to a larger program? | _____ | _____ |
| 25. | Have pollution prevention measures been considered? (Discuss in Section 11, Project Description.) | _____ | _____ |
| 26. | Does/Will the project present a radiation health and safety concern during construction or operation? (Price-Anderson Act) | _____ | _____ |

NOTES:

Appendix B

**PREPARATION OF AN ER
INTERIM MEASURE/INTERIM REMEDIAL ACTION
DOCUMENT**

APPENDIX B

1.0 PREPARATION OF AN ER INTERIM MEASURE/INTERIM REMEDIAL ACTION DOCUMENT

RFCA ¶107 describes the IM/IRA process. That paragraph states:

The draft IM/IRA shall contain a brief summary of data for the site, a description of the proposed action, an explanation of how waste management considerations will be addressed, an explanation of how the proposed action relates to any long-term remedial action objectives, proposed performance standards, all ARARs and action levels related to the proposed action, and an implementation schedule and completion date for the proposed action.

1.1 IM/IRA Format and Content

IM/IRAs are utilized for accelerated actions that will require more than six months for project execution and/or where the remedy is not straightforward and multiple alternatives have been evaluated. Alternative evaluation and selection are not necessary if a presumptive remedy has been selected. The suggested format for an IM/IRA is outlined below. In general, for actions where a formal alternatives analysis is performed, the IM/IRA will follow the format of EPA Guidance on *Conducting Non-time Critical Removal Actions Under CERCLA*, (August 1993.) The EE/CA process is one method of performing a streamlined alternatives development and screening, and should be the upper bound of complexity for the IM/IRA Document. The intent of this guidance is to allow the complexity of the decision document to be based on the complexity of the project.

If an alternatives analysis is performed, the first part of the IM/IRA should describe the project to be performed using the selected remedy. The second part of the IM/IRA should describe the remedy selection process, and explain which remedy was selected and why.

The sections of an IM/IRA should include:

- Executive Summary (Optional)
- Purpose
- Project Description
- Project Approach
- Environmental Impacts
- Compliance with ARARs
- Implementation Schedule

The following sections are necessary if an alternatives analysis is performed:

- Initial Selection and Screening of Alternatives
- Analysis of Alternatives

- Comparative Analysis of Alternatives and Remedy Selection
- Responsiveness Summary

The selected remedy will be described in the first part of the IM/IRA. The Responsiveness Summary will be included in either case.

1.2 EXECUTIVE SUMMARY

The Executive Summary provides a general overview of the contents of the IM/IRA and is recommended only for complex problems where special issues are involved and/or where a formal alternative evaluation is performed. The summary should include a brief description of the IHSS or site, the nature of the contamination and related risks (or exceedence of action levels) and scope and objectives of the proposed removal action/interim measure. If a presumptive remedy has been selected, a short statement of why the presumptive remedy is appropriate should be included. If an alternatives analysis was performed, a brief discussion of the alternatives considered and basis for selection of the preferred alternative should be provided. Depending on the length and complexity of the IM/IRA, the Executive Summary is optional.

1.3 INTRODUCTION

The introduction should briefly state:

- The nature of the contamination
- The proposed action
- The intent or goal of the proposed action

The introduction should state whether a presumptive remedy was selected, and why the remedy is appropriate (e.g., a similar remedy has been used in the past for similar contamination or type of problem). If an alternative analysis was performed, the introduction should state why a presumptive remedy was not selected (e.g., the setting or combination of contaminants, special hazards or other project-specific issues).

1.4 SITE DESCRIPTION

The site description will provide IHSS/site information including the contamination history, geological and hydrogeological conditions, remedial investigation data, and a brief summary of risks posed by the contamination and how the action mitigates those risks. If the action is based on exceedence of the RFCA Action Levels, discuss how the action addresses these exceedences. This section will also include a brief description of how the proposed action is consistent with any long-term remedial objectives. If appropriate, the following Background, General Conditions, and Data Summary subsections can be combined into one section: Existing Conditions and Conceptual Model.

1.4.1 Background

The background section will describe the nature and history of the contamination source. This may include historical information on spills or other releases, any waste operations associated with the contamination, and the relationship between the contamination and other IHSSs.

1.4.2 General Conditions

This summary describes the site-specific conditions or pertinent data to support the rationale for undertaking the action, such as the geological and hydrogeological conditions of the area to be remediated.

Only information relevant to the proposed action should be discussed. General discussions of the site geology, geographic setting, and other general physical characteristics should be referenced to existing documents, such as the site-wide geochemistry and hydrogeology reports.

1.4.3 Data Summary

This section summarizes past remedial investigations or any other available relevant data.

This would include, if relevant:

- Appropriate field investigations such as HPGe surveys, soil gas surveys, etc.
- Groundwater, surface water, soil and/or other relevant analytical results
- Field observations
- Waste disposal data and history
- Any other appropriate, available historical data

The information from the above sections may be presented in a plan view (map), a cross-section (if appropriate), tabular form, or narrative. Locations of relevant sampling points should be shown in relation to the site or area to be remediated. It is helpful to integrate the available data into a conceptual model showing the relationship of the contamination to groundwater, buildings and other structures, surface water, slopes, underground utilities, and other physical items that may impact the project execution.

1.5 PROJECT APPROACH

Proposed action objectives narrative and numerical remedial goals are described here. This should be a brief and concise statement of the intended objectives of the action. Remedial action objectives will include meeting specified cleanup targets for the media being remediated.

If an alternatives analysis was performed, briefly state here specifically what the selected remedy is, and the basis for selection. Refer to the following sections for details on how this remedy will be implemented. If no alternatives analysis was performed, address the reason that the No

Action Alternative was not selected (i.e., the site poses a risk, contaminants are above specified action levels, etc.).

1.5.1 Proposed Action

This section details the proposed action including the scope of the action, the proposed remediation methodology, cleanup levels, and site restoration. Where applicable, these details would include information on:

- The scope or extent of the action, including projected volumes of any environmental media to be removed and/or treated
- Excavation methods
- Material handling
- Groundwater or surface water containment and/or recovery methods
- Treatment methods for water, soils, sediments, debris, or other materials generated, including tabulated performance standards for treatment
- Transportation or staging requirements
- Any control measures to minimize the environmental impact of the proposed action (i.e., dust suppression, containment measures, surface water protection)
- Performance monitoring in accordance with the IMP
- Site restoration including any revegetation, backfilling, or regrading

Sampling and analysis requirements will be deferred to the project-specific SAP developed in accordance with the guidelines in Section 3.2 of the IGD.

1.5.2 Worker Health and Safety

This section will include a brief description of the basis for the health and safety requirements, the hazards, monitoring requirements, personal protective equipment (PPE), and actions to protect human health. Action-specific HASP and Hazards Analysis (HA) will be prepared separately.

1.5.3 Waste Management

This section will describe the storage requirements and final disposition of all waste streams that will be generated. Remediation wastes are defined in RFCA §25bf as:

Remediation waste means all:

- (1) *Solid hazardous, and mixed wastes;*
- (2) *All media and debris that contain hazardous substances, listed hazardous or mixed wastes that exhibit a hazardous characteristic;*
and

- (3) *All hazardous substances generated from activities regulated under this Agreement as RCRA corrective actions or CERCLA response actions, including decommissioning.*

Remediation waste does not include wastes generated from other activities. Nothing in this definition confers RCRA or CHWA authority over source, special nuclear, or byproduct material as those terms are defined in the Atomic Energy Act.

1.6 NEPA

This section is included to identify how NEPA values are incorporated into the decision document. Ideally the NEPA values will be woven throughout the decision document so that they are considered at all phases of the decision making. This section provides an opportunity to reiterate how NEPA values may have been considered in other parts of the decision document, and to touch upon other NEPA values that may not have been directly addressed. The NEPA values to be considered include:

- Air quality during construction and operation of the project
- Water quality (including both surface water, wetlands, and groundwater and the flow characteristics of each)
- Flora and fauna (including threatened and endangered species)
- Historic and cultural resources
- Human health
- Consideration of alternatives including no action
- Irreversible and irretrievable commitment of resources
- Short-term versus long-term use of the proposed site
- Indirect effects
- Cumulative effects (effects from the current project added to the effects from other known projects affecting the same site)

1.7 COMPLIANCE WITH ARARS

This section consists of an analysis of Federal and State ARARs. Chemical-specific, location specific, and action-specific ARARs are identified and tabulated. Section 3.5 of the IGD discusses development and selection of ARARs.

1.8 IMPLEMENTATION SCHEDULE

This section will include a general schedule of when the project is to be implemented, including commencement of field activities and report generation. The format of the schedule will be

project-specific. Milestones will be presented at a summary level with nonspecific dates, e.g., "field activities will commence in the second quarter of 1999."

2.0 INITIAL SELECTION AND SCREENING OF ALTERNATIVES

Only a limited number of alternatives (two to four) need to be considered for the IM/IRA. Only the most qualified technologies and/or alternatives that apply to the chemicals of concern (COCs) and affected media need be considered. To the extent possible, presumptive remedies or previous actions for similar situations should be used as a basis for decisions. In these cases, the decision document should reference previous decision documents whenever possible, with the intent of minimizing decision processes.

Each of the alternatives should be discussed in sufficient detail so that the entire process can be understood. For example, treatment and/or disposal of residuals resulting from the remedy should be addressed.

The selected alternatives are evaluated for effectiveness, implementability, and cost. This evaluation is based on the scope of the IM/IRA and each of its specific objectives. The evaluation encompasses the criteria addressed in a full scale CMS/FS, but is done in a much more streamlined manner. The following discussion provides more detailed descriptions of each criterion. The EPA *Guidance on Conducting Non-Time Critical Removal Actions under CERCLA* (EPA, 1993) should be consulted for a description of the alternative screening and evaluation process.

2.1 EFFECTIVENESS

This criteria considers whether or not the alternative provides protection of public health and the environment. Long-term effectiveness, short-term effectiveness, and compliance with ARARs are evaluated for overall protection of public health and the environment.

Short-term effectiveness relates to the protection provided during implementation and before the IM/IRA objectives have been met. It addresses such items as impacts due to fugitive dusts, transportation of hazardous materials, and toxic fumes produced during implementation. Impacts on the local community, the workers implementing the action, and the environment are included.

Long-term effectiveness addresses the level of risk remaining after the action has been completed and the need for addition of controls. The degree to which the alternative reduces toxicity, mobility or volume of contamination and how this in turn reduces risk or potential threats is also discussed.

This section must summarize ARARs for the proposed IM/IRA action. The requirements should be presented as a summary table in the IM/IRA Decision Document, with a brief discussion in the text of this section. The alternatives evaluation will include a discussion, in general terms, of whether or not they can be complied with and what cost and schedule impacts pertain to each alternative. A detailed ARARs evaluation will be included elsewhere in the IM/IRA.

2.2 IMPLEMENTABILITY

This criteria addresses the technical and administrative feasibility of implementing an alternative and the availability of the services and materials required. Technical feasibility relates to the maturity and complexity of the technology being evaluated. Construction feasibility, and operations and maintenance requirements are also considered.

Administrative feasibility relates to the need for coordination with other offices and agencies, such as requirements for building permits, easements, or zoning variances. Availability of services and materials relates to the need for skilled labor/technicians to operate the technology/process, offsite treatment/storage/disposal, utilities, and laboratory services.

Finally, the implementability criteria includes a consideration of the acceptability of the alternatives to the State and local community.

2.3 COST

Evaluation of costs should consider the capital costs to engineer, procure, and construct the required equipment and facilities, and the operating and maintenance costs associated with the alternative. The cost estimates can be "order-of-magnitude" with sufficient accuracy to allow comparison and ranking of the alternatives on a present worth basis for alternatives that involve more than one year of operation and maintenance. For the alternative evaluation section of the IM/IRA, the alternatives will be compared on a qualitative basis using descriptors such as high, medium, or low.

The results of the analysis will be presented in the IM/IRA Decision Document for each alternative evaluated. This analysis will be summarized in a table similar to Table 2-1.

Based on the analysis, a decision will be made as to whether or not each alternative considered should be retained for the comparative analysis, which is discussed in the next section. The reason for eliminating an alternative should also be discussed.

Table 2-1 Initial Screening of Alternatives

EFFECTIVENESS
Protectiveness
Public Health
Workers
Environment
Attains ARARs
Achieve Remedial Objectives
Level of treatment/containment
No residual effect concerns
Maintains control until long-term solution implemented
IMPLEMENTABILITY
Technical Feasibility
Construction and operation
Demonstrated performance
Adaptable to environmental conditions
Need for permits
Availability
Equipment
Personnel and services
Outside laboratory testing
Offsite treatment and disposal
Post-removal site control
Administrative Feasibility
Permits required
Easements of right-of-ways required
Impact on adjoining property
Ability to impose institutional controls
COST
Capital Cost
Operation and Maintenance
Present worth cost

2.4 COMPARATIVE ANALYSIS OF ALTERNATIVES

Alternatives that pass the initial screening based on effectiveness, implementability, and cost are now compared against each other. At this point a remedy may be selected if there is an obvious benefit to a single remedy during the initial screening. The purpose of the comparative analysis is to identify the advantages and disadvantages of each alternative relative to one another so that one of them can be identified as the recommended action.

The actual comparison may be made on a semi-quantitative ranking system based on effectiveness, implementability and cost. After each category has been scored, a total score (low, medium, high) is obtained. The alternative with the highest score would probably be the recommended alternative, assuming that it is cost effective. Generally, a matrix indicating the relative scores of the alternatives and the justifications for the scores is the best method for presentation.

If there is no best alternative by this method, it may be necessary to add additional criteria and/or weighing factors to the criteria to differentiate between the alternatives.

2.5 RESPONSIVENESS SUMMARY

The approved responsiveness summary from the public comment period will be attached to the final approved IM/IRA.

3.0 GENERIC IM/IRA SCHEDULE

The attached generic schedule is for the development of an IM/IRA. Variations for each IHSS may influence the duration of specific activities. This schedule may be used as a planning basis.

4.0 COMMENT RESPONSIVENESS SUMMARY

This section will be included to document responses to public and agency comments if a separate responsiveness summary is not created.

5.0 DECISION MODIFICATION PROCESS

The decision modification process for IM/IRAs is discussed in Section 3.10 of the IGD, and in Part 10 of the RFCA.

Generic IM/IRA Schedule

ID	Activity Description	Duration	Year 2												
			Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13
1	Scoping	30d													
2	IM/IRA Decision Document	185d													
3	Prepare Draft IM/IRA Decision Document	60d													
4	Internal Review Draft IM/IRA Decision Document	14d													
5	DOE Review Draft IM/IRA Decision Document	14d													
6	Revise Draft IM/IRA Decision Document	14d													
7	Submit Draft IM/IRA DD for Agency Review	1d													
8	Agency Review	14d													
9	Public Comment Period/Agency Review	45d													
10	Receive Public /Agency Comments	1d													
11	Develop Responsiveness Summary (RS)	7d													
12	Incorporate Agency/Public Comments	14d													
13	Submit Final Revised IM/IRA and RS	1d													

IM/IRA
GENERIC SCHEDULE

Task

Progress

Summary

Appendix C

PREPARATION OF AN ER PROPOSED ACTION MEMORANDUM

APPENDIX C

1.0 PREPARATION OF AN ER PROPOSED ACTION MEMORANDUM

1.1 PAM FORMAT

RFCA ¶106 describes the PAM process:

The Draft PAM shall contain a brief summary of data for the site; a description of the proposed action; an explanation of how waste management considerations will be addressed; an explanation of how the proposed action relates to any long-term remedial action objectives; proposed performance standards; all ARARs and action levels related to the proposed action; and an implementation schedule and completion date for the proposed action.

The PAM is the decision document for accelerated response action requiring less than six months for project execution. The length and complexity of the PAM will depend on the complexity of the project. The development of the sections included in a PAM is discussed in the following sections.

The sections of a PAM include:

- Purpose
- Project Description
- Background
- Project Approach
- Environmental Impacts
- Compliance with ARARs
- Implementation Schedule
- Comment Responsiveness Summary

1.2 PURPOSE

This introduction briefly states:

- The nature of the contamination

- The proposed action
- The intent or goal of the proposed action

1.3 SITE DESCRIPTION

The project description provides site information including history, geological and hydrogeological conditions, remedial investigation data, a brief summary of risks posed by the site and how the action will mitigate the risks. This section will also include a brief description of how the proposed action is consistent with any long-term remedial objectives. If appropriate, the Background, General Conditions, and Data Summary subsections can be combined into one section entitled Existing Conditions and Conceptual Model. The section would contain the same information and integrate it into a conceptual model of the site, including known and expected contaminant distribution and factors expected to impact the project (e.g., shallow groundwater).

1.3.1 Background

The background section describes the nature and history of the contamination source. This potentially includes historical information on spills or other types of releases, any waste operations associated with the contamination, and the relationship between the contamination and other IHSSs.

1.3.2 General Conditions

This summary describes site-specific conditions or pertinent data to support the rationale for undertaking the action such as the geological and hydrogeological conditions of the area to be mitigated. Information relevant to the action may include:

- Underlying stratigraphy
- Depth to groundwater
- Saturated thickness
- Mean hydraulic conductivity and gradient
- Seasonal effects
- Any relevant information on seeps or surface water locations

Only information relevant to the proposed action should be discussed. General discussions of the site geology, geographic setting, and other physical characteristics should be referenced to existing documents.

1.3.3 Data Summary

This section summarizes past remedial investigations. This would include, if relevant:

- Geophysical survey information
- Borehole sampling results
- Groundwater sample results
- Surface water sample results
- Surface soil, sludge, or sediment sample results
- Field screening results
- Free product samples and thickness measurements
- Samples and smears from tanks and pipelines
- Field observations
- Any other appropriate, available historical data

1.4 PROJECT APPROACH

This section provides a brief and concise statement of the intended objective of the accelerated action.

1.4.1 Proposed Action Objectives

This section details the proposed action including the scope of the action, the proposed remediation methodology, cleanup levels, and site restoration. Where applicable, these details would include information on:

- The scope or extent of the action including projected volumes of any environmental media removed and/or treated
 - Excavation methods
 - Material handling
 - Groundwater or surface water recovery methods
 - Treatment methods for water, soils, sediments, debris, or excess equipment, including tabulated performance standards for treatment
 - Transportation or staging requirements
 - Any control measures to minimize the environmental impact of the proposed action, (e.g., dust suppression, and containment measures)
 - Performance monitoring in accordance with the IMP
-

- Site restoration including any revegetation, backfilling, or regrading

Discussion of sampling and analysis will be deferred to the project-specific sampling and analysis plan developed as per the guidelines in Section 3.2 of the IGD.

1.4.2 Worker Health and Safety

This section will include a brief description of the basis for health and safety requirements, the hazards, monitoring requirements, PPE, and actions to protect human health. An action-specific HASP will be prepared separately.

1.4.3 Waste Management

This section will describe the storage and management requirements and final disposition of all waste streams that will be generated. Remediation wastes are defined in RFCA ¶25bf as:

Remediation waste means all:

- 1) *Solid hazardous, and mixed wastes;*
- 2) *All media and debris that contain hazardous substances, listed hazardous or mixed wastes that exhibit a hazardous characteristic; and*
- 3) *All hazardous substances generated from activities regulated under this Agreement as RCRA corrective Actions or CERCLA response actions, including decommissioning.*

Remediation waste does not include wastes generated from other activities.

Nothing in this definition confers RCRA or CHWA authority over source, special nuclear, or byproduct material as those terms are defined in the Atomic Energy Act.

1.5 NEPA

This section is included to identify how NEPA values are incorporated into the decision document. Ideally the NEPA values will be woven throughout the decision document so that they are considered at all phases of the decision making. This section provides an opportunity to reiterate how NEPA values may have been considered in other parts of the decision document, and to touch upon other NEPA values that may not have been directly addressed. The NEPA values to be considered include:

- Air quality during construction and operation of the project
- Water quality (including both surface water, wetlands, and groundwater and the flow characteristics of each)
- Flora and fauna (including threatened and endangered species)
- Historic and cultural resources
- Human health
- Limited consideration of alternatives including no action, as appropriate
- Irreversible and irretrievable commitment of resources
- Short-term versus long-term use of the proposed site
- Indirect effects
- Cumulative effects (effects from the current project added to the effects from other known projects affecting the same site)

1.6 COMPLIANCE WITH ARARS

This section consists of an analysis of federal and state ARARs. Chemical-specific, location-specific, and action-specific ARARs are identified and summarized in a table. Section 3.5 of the IGD discusses identification and evaluation of ARARs.

1.7 IMPLEMENTATION SCHEDULE

This is a general project schedule including commencement of field activities and report generation. The format of the schedule will be project-specific. Milestones will only be presented at a summary level with nonspecific dates (e.g., "field activities will commence in the second quarter of 1999"). The attached generic schedule for PAMs may be used as a starting point for project planning.

1.8 COMMENT RESPONSIVENESS SUMMARY

This section will be included if a separate responsiveness summary is not created. Written comments from the public comment process will be documented followed by responses to individual or group comments that have similar focus.

1.9 DECISION MODIFICATION PROCESS

The decision modification process for PAMs is described in Section 3.10 of the IGD.

Appendix D

PREPARATION OF AN RFCA STANDARD OPERATING PROTOCOL DOCUMENT

APPENDIX D

1.0 PREPARATION OF AN RFCA STANDARD OPERATING PROTOCOL DOCUMENT

RFCA ¶25(b) defines a Rocky Flats Cleanup Agreement Standard Operating Protocol (RSOP). That paragraph states:

RSOP means approved protocols applicable to a set of routine environmental remediation and/or decommissioning activities regulated under this Agreement that DOE may repeat without re-obtaining approval after initial approval because of the substantially similar nature of the work to be done. Initial approval of an RSOP will be accomplished through an IM/IRA process.

1.1 EXECUTIVE SUMMARY

The Executive Summary provides a general overview of the contents of the RSOP. Depending on the length and complexity of the RSOP, the Executive Summary is optional.

1.2 INTRODUCTION

The introduction should briefly state:

- The purpose of the RSOP (define why the RSOP is needed and intent or goal of action)
- The proposed action (i.e., the scope of this RSOP)

1.3 PROJECT APPROACH

1.3.1 Proposed Action

This section provides a description of the proposed action including the scope of the RSOP, the proposed remediation methodology, cleanup levels, and site restoration. Where applicable, these details would include information on:

- Monitoring requirements during implementation of the RSOP
- The scope or extent of the action, including projected volumes of any process or remediation waste to be removed and/or treated
- How the proposed action relates to any long-term remedial action objectives

1.3.2 Worker Health and Safety

This section will include a brief description of the basis for the health and safety program or plan requirements, the hazards, monitoring requirements, PPE, and actions to protect human health. Action-specific HASP and HA will be prepared separately.

1.3.3 Waste Management

This section will describe the management requirements and final disposition of all waste streams generated other than the waste specifically addressed in this RSOP. (For example, secondary waste generated as a result of this activity.)

1.4 ENVIRONMENTAL CONSEQUENCES

This section is included to identify how NEPA values and potential environmental consequences are incorporated into the decision document. Ideally the NEPA values will be woven throughout the decision document so that they are considered at all phases of the decision making. This section will reiterate how NEPA values and potential environmental consequences of the activities may have been considered in other parts of the decision document, and to touch upon other NEPA values and potential environmental consequences that may not have been directly addressed. The NEPA values and potential environmental consequences to consider include:

- Soils and geology
- Air quality
- Water quality
- Human health and safety
- Ecological resources
- Historic resources
- Visual Resources
- Noise
- Transportation
- Unavoidable adverse effects
- Short-term uses versus long-term effects
- Irreversible and irretrievable commitments

1.5 COMPLIANCE WITH ARARS

This section consists of an analysis of Federal and State ARARs. Chemical-specific, location-specific, and action-specific ARARs are identified and tabulated. Section 3.5 of the IGD discusses development and selection of ARARs.

1.6 IMPLEMENTATION SCHEDULE

Once the regulatory agencies initially approve the RSOP, DOE RFFO may implement the RSOP throughout the duration of the Rocky Flats Closure Project. DOE RFFO will notify the regulatory agencies prior to implementing the RSOP for a specific-project. Project-specific approval by the regulatory agencies to use the RSOP is not required.

1.7 RESPONSIVENESS SUMMARY

The approved responsiveness summary from the public comment period will be attached to the final approved RSOP. (Alternatively, may include a section within the final RSOP to document responses to public and agency comments if a separate responsiveness summary is not included.)

1.8 ADMINISTRATIVE RECORD

This section will contain the Administrative Record file and proposed Administrative Record for this decision. After completion of the public comment period, all comments received from the public, the responsiveness summary and the approval letter will be added to the Administrative Record file. Approval of this decision document is approval by the regulators of the Administrative Record for the actions covered by the RSOP.

Appendix E

NO FURTHER ACTION DEVELOPMENT SCHEDULE

Appendix F

ENVIRONMENTAL DATA MANAGEMENT

APPENDIX F

1.0 CLOSURE DATA MANAGEMENT

A variety of data will be generated during Closure. These data include, but are not limited to:

- Air monitoring data
- Meteorological data
- Ecological data
- Surface water monitoring data (including physical and chemical information)
- Groundwater monitoring data (including analytical and field parameters)
- Well construction data
- Geological information
- Spatial data
- Waste characterization data
- Field instrument data
- Soils data (analytical and physical data)
- Other characterization data (including HPGe field data)

The main types of environmental data collected during the Closure process are graphically shown in Figure F-1. These data are vital to successful 2006 Closure and must be collected, stored, managed, and used appropriately to support Closure decision-making and regulatory Closure via the CAD/ROD. The data must be of sufficient quality to support decisions, managed in a manner that allows repeat use, and secured for both required recordkeeping and provision of data to final Site stewards. The requirement of future availability and repeat use dictates that data are stored centrally using consistent and easily identifiable titles and labels. **This management is the responsibility of the Closure Operations group with support and infrastructure provided by the Closure Support Group.**

The following sections outline specific Closure data management and quality requirements for all projects conducted under RFCA.

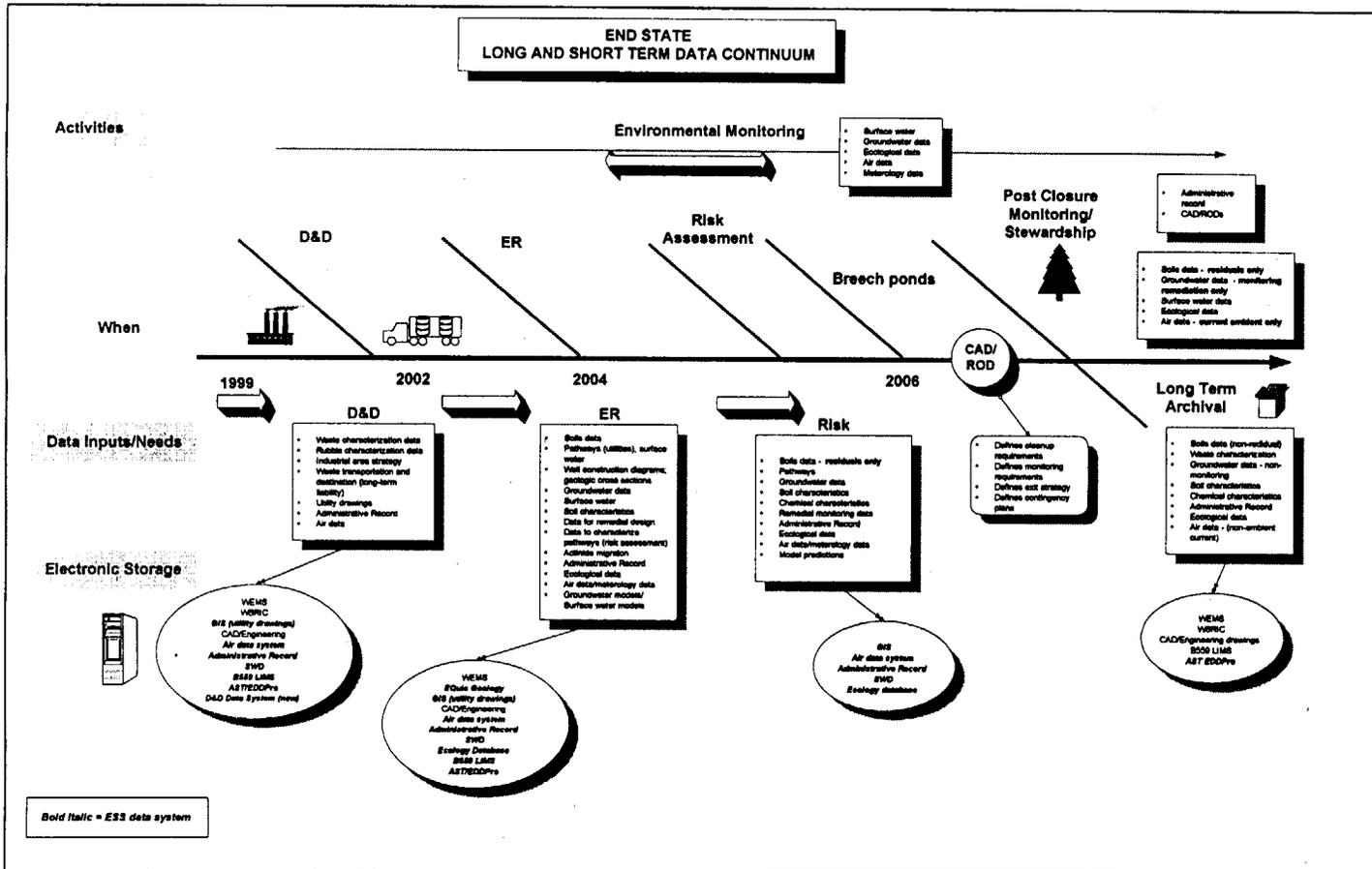


Figure F-1 Main Types of Environmental Data Collected During Closure Process

1.1 ENVIRONMENTAL DATA QUALITY AND USABILITY

Environmental data quality is a multi-step process that ensures the data collected at part of RFCA projects are sufficient for their intended use. In most instances, analytical data collected in support of a SAP should be evaluated using the guidance described in the Rocky Flats Administrative Procedure 2-G32-ER-ADM-8.02, *Evaluation of ERM Data for Usability in Final Reports*. This procedure establishes the guidelines for evaluating analytical data with respect to the PARCC parameters, which address the overall quality of the data collected and their usability by the project for decision making. The PARCC process and analytical data quality assessment process are discussed in the following sections.

1.1.1 PARCC Process

The definition of PARCC parameters and the specific applications to the investigation are as follows:

Precision A quantitative measure of data quality that refers to the reproducibility or degree of agreement among replicate or duplicate measurements of a parameter. The closer the numerical values of the measurements are to each other, the lower the relative percent difference and the greater the precision. The relative percent differences (RPD) for results of duplicate and replicate samples will be tabulated according to matrix and analytical suites to compare for compliance with established precision DQOs. Deficiencies will be noted and qualified, if required. Evaluation of precision encompasses an evaluation of the sample collection process as well.

Accuracy A quantitative measure of data quality that refers to the degree of difference between measured or calculated values and the true value of a parameter. The closer the measurement to the true value, the more accurate the measurement. The actual analytical method and detection limits will be compared with the required analytical method and detection limits for VOCs and radionuclides to assess the DQO compliance for accuracy.

Representativeness A quantitative characteristic of data quality defined by the degree to which the data absolutely and exactly represented the characteristics of a population. Representativeness is accomplished by obtaining an adequate number of samples from appropriate spatial locations within the medium of interest. The actual sample types and quantities will be compared with those stated in the SAP or other related documents and organized by media type and analytical suite. Deviation from the required and actual parameters will be justified, as required.

Completeness A quantitative measure of data quality expressed as the percentage of valid or acceptable data obtained from a measurement system. A completeness goal of 90% has been set for SAPs. Real samples and QC samples will be reviewed for the data usability and achievement of internal DQO usability goals. If sample data cannot be used, the non-compliance will be justified, as required.

TABLE F-1 PARCC PARAMETER SUMMARY

PARCC	Radionuclides	Non-Radionuclides
Precision	Duplicate Error Ratio ≤ 1.42	
Accuracy	Detection Limits per method and ASD Laboratory SOW	Comparison of Laboratory Control Sample Results with Real Sample Results
Representativeness	Based on SOPs and SAP	Based on SOPs and SAP
Comparability	Based on SOPs and SAP	Based on SOPs and SAP
Completeness	90% Useable	90% Useable

Comparability A qualitative measure defined by the confidence with which one data set can be compared to another. Comparability will be attained through consistent use of industry standards (e.g., SW-846) and standard operating procedures, both in the field and in laboratories. Statistical tests may be used for quantitative comparison between sample sets (populations). Deficiencies will be qualified, as required. Quantitative values for PARCC parameters for the project are provide in Table F-1.

1.1.2 Analytical Data Assessment Process

RFETS Analytical Services group provides analytical data assessment on all environmental data collected to support the Closure Mission. Data usability shall be performed on laboratory validated data according to procedure 2-G32-ER-ADM-08.02, *Evaluation of ERM Data for Usability in Final Reports*. The RFETS environmental data assessment process is outlined below.

Data Assessment

As shown in Figure F-2, all analytical data generated in conjunction with environmental activities at Rocky Flats are assessed to evaluate the performance of analytical laboratories with respect to contract requirements for quality. Data Assessment is a generic term for a quality assurance evaluation of analytical chemistry data. This assessment involves:

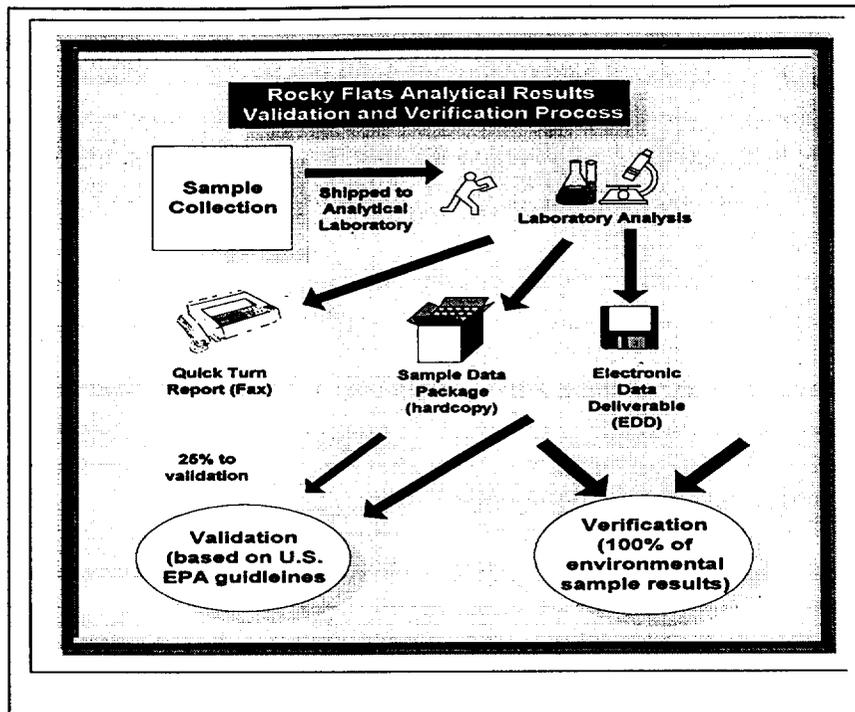


Figure F-2 Rocky Flats validation and Verification Process

- **Initial review** of the data package by the laboratory performing the analysis.
- **Cursory examination** of the data by Rocky Flats Analytical Services Division (ASD) Personnel prior to customer release of preliminary data .
- **Verification** of data packages in accordance with Rocky Flats Verification and Validation Guidelines. Verification is an assessment process to ensure data meets specified contractual data quality requirements. The verification process employed on environmental data serves as a comprehensive quality control assessment with the exception of raw data review and calculation checks. This level of assessment includes a random comparison of hard copy results against the electronic data deliverable (EDD). Validation of a selected percentage of the data packages from all laboratories serves as a check to determine if any systematic reporting or calculation problems exist, and may be applicable to those data packages that receive data assessment at the verification level. Current guidelines require 75 percent of the environmental data are verified.
- **Validation** of data packages in accordance with Rocky Flats Verification and Validation Guidelines. Validation is a comprehensive examination of a data package to determine compliance to data quality requirements, to ensure raw data supports reported values, and to evaluate the laboratory's compliance to subcontract reporting and deliverable requirements. This level of assessment includes a complete comparison of EDD data with data reported on the

hardcopy sample data package. Current guidelines require 25 percent of the environmental data are validated in accordance with *General Guidelines for Data Verification and Validation - DA-GR01-V1* (December 3, 1997) Additional details on the RFETS analytical data assessment process are found on the RFETS Intranet at http://rfetshp/Analytic_Services/dataq.htm

All analytical laboratories supporting the RFETS Closure Mission are routinely audited to ensure performance in accordance with contract specifications.

ASD also provides results for a majority of environmental analysis via an EDD, which includes information on the results of the data validation/verification process. The EDDs are designed for import into site environmental data systems to support further analysis and interpretation of the data.

Projects collecting and reporting non-laboratory data, such as field parameters, geologic logging, ecological sampling, etc, are required to follow and document adherence to Site and program specific QA/QC procedures.

1.2 ENVIRONMENTAL DATA MANAGEMENT

Appropriate management of RFETS environmental data is essential to Closure and a key responsibility of project managers conducting RFCA Closure projects. The majority of environmental data are available electronically and are stored in shared data systems. Each of these systems has been reviewed and tested for Y2K compliance and have been approved for operation for the remainder of the Closure Mission. Current environmental data systems are shown in Table F-2.

Most environmental data systems have been upgraded in the last year and several are scheduled for upgrade during FY00. Once upgrades are complete, all environmental data systems will be in a common site standard platform to facilitate integration of data and information among media.

Projects that collect Closure environmental data are required to store their data in the applicable database. In this way, such data will be easily available for secondary uses, as well as available in the future, long after the original project is completed and closed out. This relieves the RFCA project manager from long-term data management requirements beyond Site-required record keeping requirements. All data entered into environmental data systems must have a location and sampling event identified in accordance with Closure Project protocols.

TABLE F-2 CURRENT DATA SYSTEMS AT RFETS

Environmental Data System	Platform in FY00	Typical Data
Air Monitoring System Database (AMSD)	Oracle	Effluent air, ambient air, meteorology
Soil Water Database (SWD)	Oracle	Soil, groundwater, surface water, HPGe, water levels, field parameters, flow
Flow	Oracle	Surface water flow
Ecology Database (SED)	Access (later migration to Oracle)	Ecological species, soil types, sampling locations
Administrative Record (AR)	FileMaker (migration to Oracle and web enabled)	Index of administrative record documents
Integrated Sitewide Environmental Data System (ISEDS)	Oracle/access - web enabled	"raw" analytical data, electronic field measurements, interpreted data sets "residual" data sets
Geographic Information System (GIS)	ArcInfo	Spatial data
Analytical Services Toolkit (AST)/EDDProPlus (BIG EDD)	Access/Oracle	Laboratory analyses tracking, electronic laboratory analyses (EDD)
Waste Stream and Residue Identification and Characterization (WSRIC)	Oracle	Waste characterization
Waste Environmental Management System (WEMS)	Oracle	Waste container tracking

Figure F-3 shows a roadmap of requirements on where to direct environmental data collected during closure activities. Additional details on requirements are presented in the following paragraphs.

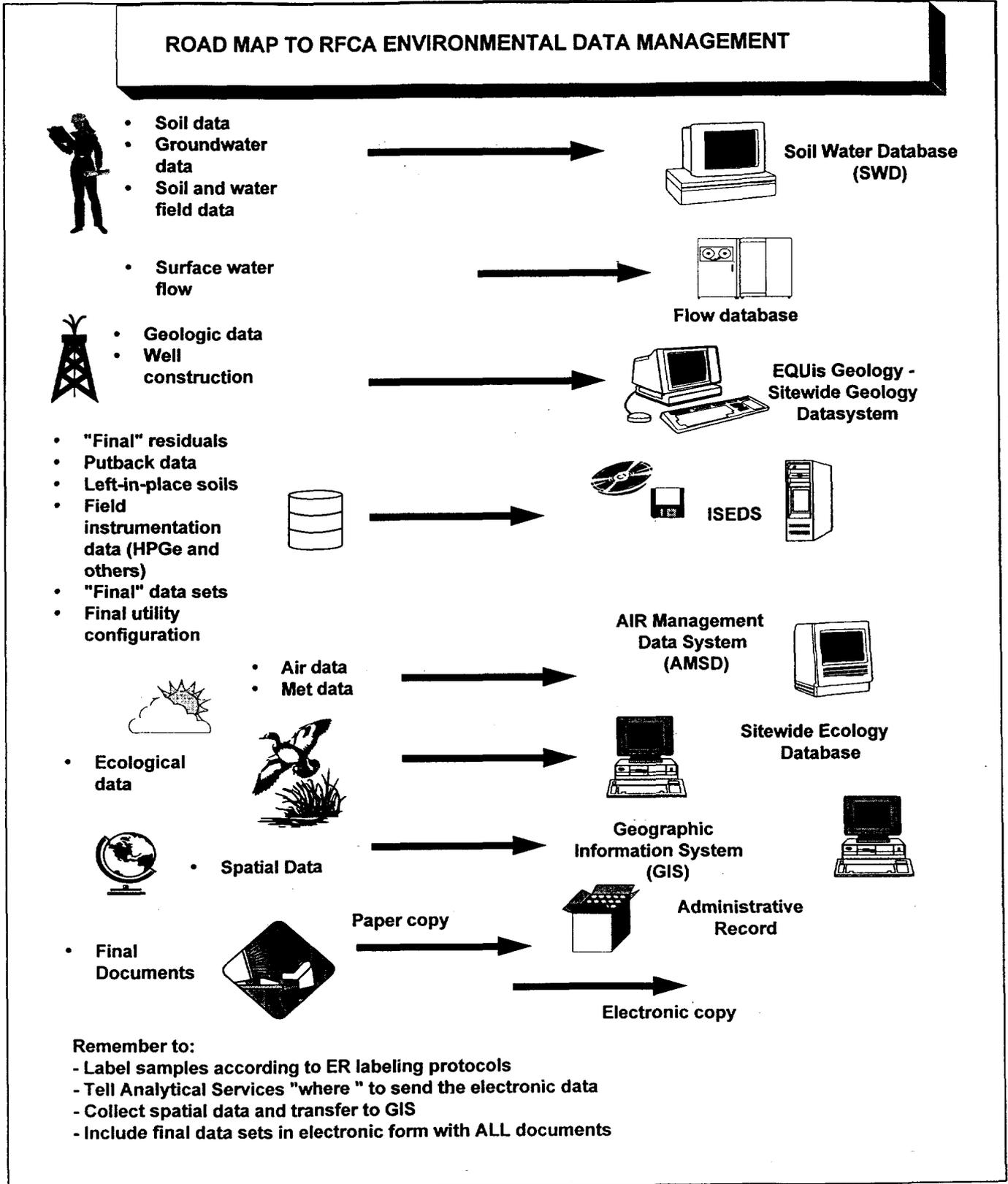


Figure F-3 Road Map to RFCA Environmental Data Management

- **Interpreted Data files** - Each project generates a set of SME- interpreted data to justify the decision. Effective immediately, each project is required to include with each final decision document a copy of the interpreted data set in electronic form. Final interpreted data sets include all spatial data associated with a project. This will ensure that regardless of data management practices, the Site will possess the appropriate data to prepare the CAD/ROD. Kaiser-Hill managers will not consider a document "complete" without the attached electronic data file.
- **"Raw" Soil, groundwater, and surface water analytical data** - all analytical data collected to support ER projects will be entered into the Soil Water Database (SWD)
- **Soil and groundwater field Data** - all soil and groundwater field data collected to support ER projects will be entered into the SWD.
- **Surface water flow data** - all surface water flow data will be transferred to the FLOW database - contact Marian Carr x4488.
- **HpGe data and other field instrument data**- all electronically generated HpGE data and other field instrument data to support site characterization are to be stored in ISEDS, contact Marian Carr x 4488.
- **Air data** - all air data (including field parameters) will be transferred to the Air Management System Database (AMSD) database - contact Carol Patnoe x 2440.
- **Geologic and well construction data** - all geologic and well construction data will be transferred to RMRS, Steve Singer x 3387, for inclusion in the Sitewide EQUIS geologic data base.
- **Spatial Data (GPS)** - projects will collect appropriate spatial data for all important samples during characterization, remediation and closure. At a minimum, all "final characterization" data of any residuals left on Site, will be identified by both a spatial coordinate (X,Y,Z) and a standard location name in accordance with ER location naming conventions. Spatial data will be managed in coordination with the processes and procedures established by the RMRS GIS system (Wendell Cheeks x 7707).
- **Verification Soil Sampling** - Any verification soil sampling collected to demonstrate the satisfaction of performance objectives will be formally transferred for incorporation into Integrated Sitewide environmental data system (ISEDS). Similarly, where treated or untreated soil has been stockpiled and sampled prior to returning the soil to an excavated location (putback), any sample results representative of the stockpile, and thus representative of the returned soil, must be identified and incorporated into ISEDS. Project managers are responsible for providing sufficient information on each data set including accurate location information and data quality information. **Verification soil sampling data sets are vital to the final**

CAD/ROD and improper management of these data can lead to both delayed closure and increased costs in the out-years.

- **Stockpile Sampling** - Where treated or untreated soil has been stockpiled and sampled prior to returning the soil to an excavated location (putback), any sample results representative of the stockpile and thus representative of the returned soils, must be placed in the SWD database. Similarly, where treated or untreated soil has been stockpiled and sampled prior to management in a location different from the excavated location, any sample results representative of the stockpile, and thus representative of the soil at the new location, must be included in SWD with the new location information
- **D&D Characterization Data** - to be managed by the D&D program in accordance with established procedures.
- **Ecological Data** - all ecological data are to be managed in the Site Ecology database - contact Steve Nesta x 6386

1.3 Public Dissemination of Environmental Data

During FY99, data specified in the IMP will be provided to regulators as requested. To support this data transfer effort, the Integrated Site-wide Environmental Data System (ISEDS) and the Environmental Data Dynamic Information Exchange (EDDIE) were developed. A simplified overview of ISEDS/EDDIE operations is shown on Figure F-4.

All projects collecting and reporting data collected as part of the IMP, including Special Projects, are required to provide final documents and deliverables in electronic form (both text and final data sets) to the EDDIE administrator (x4488) for posting on EDDIE or data storage in ISEDS. Regulators will be able to obtain environmental data sets on ISEDS while public stakeholders will be able to access and download approved environmental reports from EDDIE via the world wide web. All submissions can be made via email.

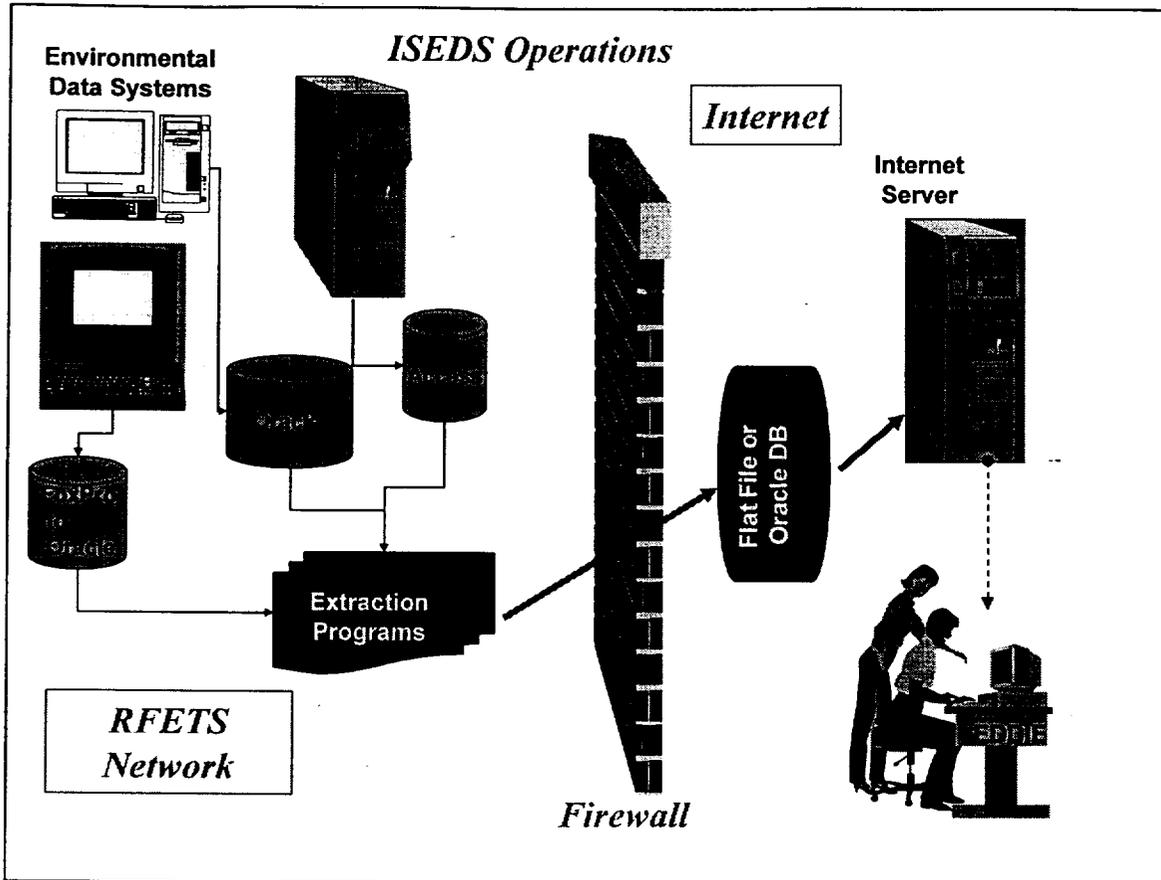


Figure F-4 Overview of ISEDS/EDDIE Operations