

**LOW-LEVEL WASTE DISPOSAL FACILITY  
FEDERAL REVIEW GROUP  
PROGRAM MANAGEMENT PLAN**

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**SEPTEMBER 18, 2000**

# LOW-LEVEL WASTE DISPOSAL FACILITY FEDERAL REVIEW GROUP PROGRAM MANAGEMENT PLAN

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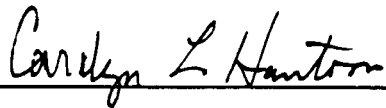
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## ACRONYMS

AEA	Atomic Energy Act
CA	Composite Analysis
CE	Compliance Evaluation
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
DAS	Disposal Authorization Statement
DAS	Deputy Assistant Secretary
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
EH	Office of Environmental Safety and Health
EM	Office of Environmental Management
EPA	U.S. Environmental Protection Agency
LFRG	Low-Level Waste Disposal Facility Federal Review Group
LLW	low-level waste
MLLW	mixed low-level waste
NNSA	National Nuclear Security Act
PA	Performance Assessment
PMP	Program Management Plan
PRP	Peer Review Panel

# LOW-LEVEL WASTE DISPOSAL FACILITY FEDERAL REVIEW GROUP PROGRAM MANAGEMENT PLAN

## 1.0 MISSION

The Department of Energy's (DOE) Environmental Management Low-Level Waste Disposal Facility Federal Review Group (LFRG) was initiated by the Office of Environmental Management (EM) in 1996. The LFRG Charter states that it was created to fulfill the requirement in DOE Manual 435.1 establishing a review panel and to evaluate low-level waste (LLW) disposal facility documentation (Section I.2.E(1)(a)). The text of the LFRG mission statement appears in the LFRG Charter (Appendix A).

The documents reviewed, as required by DOE Manual 435.1, include Performance Assessments (PAs) and Composite Analyses (CAs) or appropriate Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) documentation that demonstrates compliance with DOE Order 435.1 requirements. The results of the reviews are provided to upper-level EM managers to assist in their decisions to grant or deny authorization to dispose of LLW. The LFRG is also charged with drafting Disposal Authorization Statements and assisting upper-level EM managers in other duties related to authorization of LLW disposal facilities.

## 1.1 INTRODUCTION

This chapter describes the authority under which LFRG actions are performed and describes the evolution and implementation of that authority over approximately the past decade. This review of the evolution in the way DOE interprets and implements its safe disposal responsibility is important to achieve the following purposes:

- Assist on any future interpretations of scope, compliance, and disposal authorization conditions;
- Achieve effective implementation of the LFRG mission; and
- Ensure that prior commitments to external oversight bodies are known, understood, and fully satisfied and dispositioned.

## 1.2 PURPOSE

The purpose of the EM *Low-Level Waste Disposal Facility Federal Review Group Program Management Plan* (LFRG PMP) is to establish the LFRG roles and responsibilities, the LFRG management processes, and the transition from DOE Order 5820.2A to DOE Order 435.1. The LFRG PMP will serve as the primary management guidance for the LFRG at Headquarters and field offices to ensure successful implementation of the relevant requirements of DOE Order 435.1 and supporting guidance and procedural documents. This document describes the essential aspects of the DOE

requirements that guide development, operation, and closure of LLW disposal facilities and how the essential aspects are reflected in LFRG activities. The LFRG will review the PMP annually and update or revise it as required to reflect LFRG experiences.

### 1.3 BACKGROUND

In September 1988, DOE Order 5820.2A, Radioactive Waste Management was issued. It contained the key DOE requirements for radioactive waste management until July 1999. At that time, a new DOE Order and Manual 435.1, Radioactive Waste Management, were issued. The new order provided that compliance be achieved by July 2000, except for cases where approval is obtained to extend the deadline to October 1, 2001. Orderly transition from DOE Order 5820.2A to DOE Order 435.1 requires prudent and deliberate implementation. The DOE Order 5820.2A included a requirement that each LLW disposal facility have a radiological PA prepared and maintained. The order also included a provision for creation of an Oversight and Peer Review Panel to review the PAs and ensure consistency in their scope and content throughout DOE. The Peer Review Panel was established and consisted largely of personnel who were not federal employees. The order did not include a requirement for preparation of a CA which is required by DOE Order and Manual 435.1.

In September 1994 the Defense Nuclear Facilities Safety Board (DNFSB) staff conducted a review of DOE LLW management operations.<sup>1</sup> Based largely on that report, the DNFSB submitted their Recommendation 94-2<sup>2</sup> to the Secretary of Energy. The recommendation included a finding that none of the DOE LLW facilities possessed a final Performance Assessment as required by DOE Order 5820.2A and a provision that the Performance Assessment process be completed for all active LLW burial sites. The Secretary of Energy accepted Recommendation 94-2<sup>3</sup> and directed the preparation of an Implementation Plan<sup>4</sup> which was accepted by the DNFSB<sup>5</sup>. In the Plan, DOE committed to continued reliance on the Oversight and Peer Review Panel (PRP) for review and recommendation for approval of the PAs and CAs for LLW disposal facilities. The PRP was superceded by the LFRG on December 19, 1996. As elements of the Implementation Plan were initiated and began to take shape, specific elements were modified and refined with the concurrence of the DNFSB. Those modifications and refinements had

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<sup>1</sup>“Low-Level Waste Disposal Policy for Department of Energy Defense Nuclear Facilities;” Defense Nuclear Facilities Safety Board, September 14, 1994.

<sup>2</sup>Defense Nuclear Facilities Safety Board Recommendation 94-2, “Conformance with Safety Standards at Department of Energy Low-Level Nuclear Waste and Disposal Sites,” September 8, 1994.

<sup>3</sup>Letter from Secretary of Energy Hazel R. O’Leary to DNFSB Chairman John T. Conway; October 28, 1994.

<sup>4</sup>*Implementation Plan, Defense Nuclear Facilities Safety Board Recommendation 94-2, Revision I*; U.S. Department of Energy; April 1996.

<sup>5</sup>Letter from DNFSB Chairman, John T. Conway to Secretary of Energy Hazel R. O’Leary, August 20, 1996.

some implications for the LFRG and have been incorporated in the planning for and execution of the responsibilities of the LFRG.

In July 1999, a replacement for DOE Order 5820.2A was issued. It included requirements relevant to the operation of the LFRG. The new Order (435.1) includes a requirement for preparation and maintenance of both a PA and a CA for each operating LLW disposal facility. It also requires that the PA and CA be approved by the cognizant Deputy Assistant Secretary and that recommendations for approval and a compliance evaluation be prepared by a federal review group (i.e., the LFRG). This federal review group is also responsible for drafting, for Deputy Assistant Secretary consideration, a Disposal Authorization Statement. The Disposal Authorization Statement is to include any limitations imposed on a disposal facility as conditions for approval of their PA or CA.

The recent passage of the National Nuclear Security Act (NNSA) has affected the authority and scope of the LFRG. A key provision of the NNSA (Section 3213) is that employees and contractors of the NNSA are not subject to the authority, direction, or control of any other officer, employee, or agent of the Department.

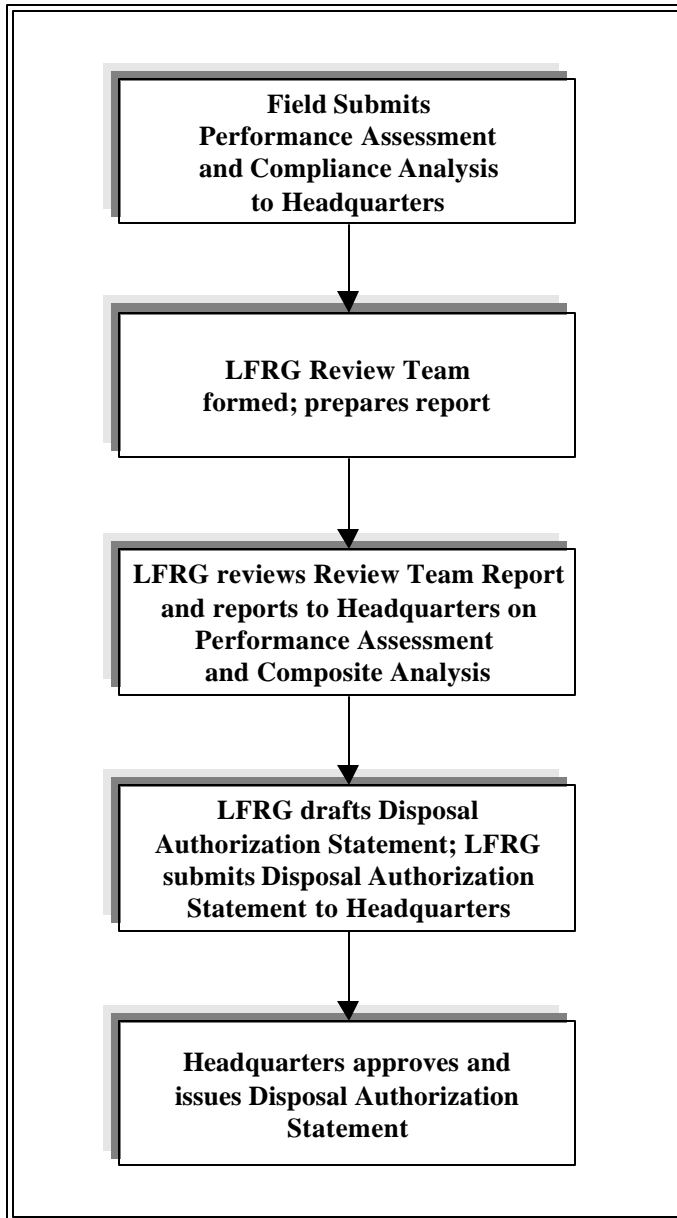
The practical effect of the NNSA on the LFRG is that the disposal authorization for the Area G disposal facility at Los Alamos National Laboratory is not subject to approval by EM Deputy Assistant Secretaries. The Lead Program Secretarial Officer for the Area G facility is the Deputy Administrator for Defense Programs which is an element of the National Nuclear Security Administration. The Deputy Administrator for Defense Programs will be the signatory for the Area G Disposal Authorization Statement.



## 2.0 OBJECTIVES

The descriptions of the objectives support development of key procedures, roles and responsibilities, facility performance criteria, personnel qualifications, and interpretations of requirements.

**Figure 2-1. Authorization Process for DOE Low Level Waste Disposal Facilities**



The overall goal of the LFRG is to develop and implement a process for determination and findings of LLW disposal facilities compliance with DOE requirements as articulated in DOE Order and Manual 435.1 as required to fulfill DOE responsibilities under the Atomic Energy Act (AEA) of 1954, as amended. The specific objectives of the LFRG are described in detail below and Figure 2-1 illustrates the basic steps of the authorization process which includes document review, document approval, and disposal authorization.

### 2.1 DOCUMENT REVIEW PROTOCOL

A critical objective of the LFRG is to develop and implement a formal process for reviewing documentation related to the performance of low-level waste disposal facilities and to support LFRG recommendations to the Deputy Assistant Secretaries. For low-level waste disposal facilities operated by and planned for the Office of Environmental Management, the key documents to be reviewed are the Performance Assessment and the Composite Analysis required by DOE Order 435.1.

The Area G low-level waste disposal facility, within TA-54 at Los Alamos National Laboratory, is operated under the direction of Defense Programs which is an element of the National Nuclear Security Administration. The same key documents are to be reviewed for Area G, but the approval authority is different as explained in the following section.

## **2.2 APPROVAL OF KEY DOCUMENTS**

The document review process of the LFRG is an essential prerequisite for LFRG recommendations to the cognizant Deputy Assistant Secretaries for the Office of Environmental Management. The key documents will consist of Performance Assessments and Composite Analyses, CERCLA Crosswalks, and any necessary supplementary analyses. The facility-specific crosswalks are to demonstrate CERCLA compliance with substantive requirements of DOE Order 435.1. Additional documentation is required to demonstrate compliance with any substantive requirements of DOE Order 435.1 not addressed by CERCLA. The recommendations of the LFRG are to be submitted in writing to the cognizant Deputy Assistant Secretaries and are to reflect a consensus among the LFRG members. If the opinion of one or a small group of LFRG members cannot be accommodated, a minority report will be allowed.

Area G at Los Alamos National Laboratory must have similar approved documents even though it is part of the National Nuclear Security Administration. The National Nuclear Security Administration and its elements are not subject to control by other DOE organizations, so compliance with the requirements of DOE Manual 435.1 is not assessed by upper-level EM managers. Instead, the LFRG is expected to perform its usual functions with respect to assessment of the PA/CA for Area G and to submit the results to the Deputy Administrator for Defense Programs. The Deputy Administrator is then responsible for approving or rejecting the Disposal Authorization Statement for the facility.

## **2.3 DRAFT DISPOSAL AUTHORIZATION STATEMENTS**

The ultimate action of the LFRG, following approval of the key documents, is the preparation of a Disposal Authorization Statement submitted for approval to the cognizant Deputy Assistant Secretary. The LFRG is charged with evaluating information to facilitate a determination as to whether low-level waste disposal facilities are designed, constructed, operated, maintained, and closed in a manner that complies with the requirements of applicable DOE orders.

The first draft Disposal Authorization Statement is typically prepared by LFRG support staff and the Review Team Leader; sometimes other members of the Review Team assist. It includes conditions imposed for approval of related key documents (e.g., PA and CA). The draft Disposal Authorization Statement is forwarded to the LFRG. The LFRG is briefed by disposal facility personnel and the Review Team on the primary facility documents (i.e., PA, CA, and Review Team Report) to provide the basis for consideration and refinement of the Disposal Authorization Statement. The Disposal Authorization Statement as approved by the LFRG is submitted to the cognizant Deputy Assistant Secretary with a recommendation for approval.

## **2.4 STATUS OF KEY DOCUMENTS**

An important objective of the LFRG is the identification of facilities subject to LFRG review, the submission of reports that reflect the status of preparation, and the completion of the required key documents. This information will provide the basis for planning the workload and activities of the LFRG, for tracking DOE

progress in satisfying LLW disposal requirements, and for identifying facilities that are not progressing satisfactorily in complying with the requirements.

## **2.5 MAINTENANCE OF KEY DOCUMENTS**

An important continuing objective of the LFRG is to review operations of active disposal facilities to determine whether the key documentation supporting the Disposal Authorization Statement remains up-to-date and valid. This objective is promoted by timely notification from the host site (via the site's LFRG member) to the LFRG of changes in design, construction, operation, maintenance, and closure. The notification mechanisms used will include the annual summaries and reports by LFRG members during meetings and conference calls which in aggregate will be held at least every two months. The LFRG will examine regular operational reviews and documents to assess their continued completeness and accuracy.

Changes are subject to full LFRG review and, if appropriate, approval, if any of the following four review thresholds are triggered:

1. An increase of 25 percent or more in the forecasted doses reported in the current, approved PA/CA or any violation of the performance objectives imposed by DOE Manual 435.1.
2. Any change in the point of compliance as reported in the current, approved PA/CA.
3. Any fundamental change in the analysis methodology or model used for the PA/CA.
4. Any fundamental change in hydrologic or geologic parameters used in the methodology or model.

The site's LFRG member is to identify the changes that cross any review threshold and is responsible for reporting them to the LFRG and providing documentation required for review and, if appropriate, approval. Review and, if appropriate, approval by the LFRG is required prior to the change being completed. In some cases the change may not affect the conclusions of the PA/CA or require modification of the Disposal Authorization Statement. In those cases, LFRG approval of the change is not required. Discovered changes that trigger thresholds will be reviewed to determine whether changes in the PA/CA or Disposal Authorization Statement are required and what, if any, restriction will be imposed on the facility. In the case of National Nuclear Security Administration disposal facilities, changes are to be submitted to the LFRG but decisions to make proposed changes or to impose conditions are to be made by the cognizant Deputy Administrator of the National Nuclear Security Administration.

## **2.6 ADMINISTRATIVE RECORD**

A final objective of the LFRG is to maintain a formal administrative record of the actions, deliberations, and results of the work of the LFRG. The formal records are to include the following:

- Originals of LFRG correspondence;
- Copies of PAs, CAs, CERCLA Crosswalks, special analyses and other documents that demonstrate compliance with the DOE performance requirements;
- Copies of formal correspondence from the LFRG to facility offices; and
- Quality control documentation such as LFRG member and Review Team member credentials, meeting minutes, and documentation substantiating conclusions and decisions leading to recommendations for document approval and preparation of Disposal Authorization Statements.

### **3.0 TRANSITION FROM DOE ORDER 5820.2A REQUIREMENTS TO DOE ORDER 435.1 REQUIREMENTS**

This section provides guidance on approaches for making the transition to compliance with the requirements of DOE Order and Manual 435.1 for disposal facilities that were initially subject to DOE Order 5820.2A. Also described herein are the types of facilities and the stages of development for which this transition should be examined.

Beginning in September 1988, the design, construction, operation, monitoring, and closure of LLW disposal facilities were subject to the requirements of DOE Order 5820.2A, Radioactive Waste Management. In July 1999, that order was replaced by DOE Order and Manual 435.1. There are requirements in that order which differ from or are additional to the previous requirements. Facilities initiated after the adoption of DOE Order 435.1 will not undergo transition in the applicable DOE requirements because those facilities will be subject to DOE Order 435.1 from inception.

This section is intended to promote orderly, efficient, and consistent transition from the previous LFRG requirements to the revised requirements. The term “LFRG requirements” is used to identify the requirements of a DOE directive for which the LFRG plays a role. The implementation guidance for the revised order states that requirements be implemented by October 1, 2001. (The deadline is July 9, 2000 unless an extension to October 1, 2001 is granted by the cognizant field element manager.) The guidance is designed to promote protection of human health and safety and the environment and to avoid unnecessary cost and risk that could result from rigid enforcement of all provisions of DOE Order and Manual 435.1 when marginal improvement over similar requirements of DOE Order 5820.2A does not justify the cost and risk of the retrofitting.

The guidance in this chapter was prepared specifically to apply to DOE facilities for disposal of LLW and MLLW. It describes approaches for transition of the DOE Order 5820.2A LFRG requirements to the new LFRG requirements in DOE Order 435.1. (Hereafter, the use of the term LLW is meant to include MLLW as well.) The guidance is not applicable to facilities for treatment or storage of LLW. Also, the new guidance is not applicable to disposal facilities that are not in operation or have undergone final closure. The stages of development of LLW disposal facilities to which this transition guidance applies are:

- C Facilities in the planning and design stage;
- C Facilities under construction; and
- C Existing facilities now in operation or to be used later.

In summary, disposal facilities currently in operation or those planned to operate in the future, must examine potential transition actions to the revised LFRG requirements in DOE Order and Manual 435.1.

### **3.1 THE “LFRG REQUIREMENTS”**

Significant differences exist between the requirements enforced by the LFRG under the previous DOE Order 5820.2A and the requirements enforced by the LFRG under the new DOE Order and Manual 435.1. For example, there are four performance objectives in the previous order and there are three in the new order and manual that serve as the principal criteria for determining whether a Disposal Authorization Statement should be granted. Also, the previous order did not include a requirement for preparation of a Composite Analysis or a requirement for a Disposal Authorization Statement. However, interim guidance and commitments to the DNFSB did require preparation of Composite Analyses.

### **3.2 APPROACH FOR FACILITIES IN THE PLANNING, DESIGN AND CONSTRUCTION STAGE**

The transition for facilities in the planning, design, and construction stage should be relatively straightforward. If the PA/CA for the facility had not been initiated as of July 9, 1999, then the full suite of DOE Order and Manual 435.1 (LFRG) requirements should be applied. The required documents should be prepared consistent with the guidance for the revised requirements. Acceptability should be determined based on the review criteria provided in the LFRG Manual.

If the PA/CA were initiated prior to July 9, 1999, the prospective host site for the facility should weigh the pros and cons of revising the documents for consistency with DOE Order and Manual 435.1 versus completion of the documents as initially planned.

Facilities in the planning and design stage as of July 9, 1999 should prepare a PA and a CA and receive a Disposal Authorization Statement prior to initiation of construction. Application of the PA/CA review criteria developed under DOE Manual 435.1 to a PA/CA prepared under DOE Order 5820.2A could require substantial effort and may not be the most appropriate course of action. A reasonable alternative would be to complete and review the PA/CA as planned and then begin developing revisions to the PA/CA so that when the facility is ready for operation, preliminary results for the revised PA and CA analyses are available. The preliminary results can be used to develop preliminary limits and conditions on design, construction, and operations. As the requirements enforced by the LFRG are brought into alignment with the DOE Order and Manual 435.1 requirements, the limits and conditions may require adjustment so the facility will satisfy the performance objectives.

This approach would allow construction of a facility simultaneous with assessment of expected performance as specified in DOE Manual 435.1. Results of the assessment can be applied as they are developed. Although this approach does subject the disposal facility under construction to some risk in that the facility may not ultimately satisfy the new LFRG requirements, the quantity and types of waste can be modified to some extent to promote satisfaction of the new LFRG requirements.

A similar situation occurs with respect to the CA. Although a CA is not required by DOE Order 5820.2A, the decision was made in developing the DNFSB 94-2 Implementation Plan to consider pre-1988 waste and interacting source terms in a CA. Again, a prudent course of action is to continue construction while

beginning development of or revision to the CA that will bring it into compliance with the CA requirement in DOE Manual 435.1. If the preliminary results indicate that dose goals or dose limits will be exceeded, then mitigating actions such as remediation, release barriers, and land use restrictions can be planned.

### **3.3 APPROACH FOR EXISTING FACILITIES NOW IN OPERATION OR TO BE USED LATER**

Most of the LLW disposal facilities now in operation were also in operation when the DOE Implementation Plan for DNFSB 94-2 was prepared and adopted. Those facilities were included in the Implementation Plan schedule for preparation of Performance Assessments. In addition, the facilities were already subject to the requirements of DOE Order 5820.2A which required the preparation of a Performance Assessment for each disposal facility that received waste after adoption of the order on September 26, 1988. Consequently, the majority of the disposal facilities now in operation were already in the process of preparing or obtaining Headquarters approval for their PA. A transition approach similar to that suggested for facilities under construction should be applied in this case.

The Implementation Plan included a commitment to include pre-1988 waste and interacting source terms in the analysis of disposal facility performance. However, in Rev. 1 of the Implementation Plan the Department decided to provide that analysis in a separate document, a Composite Analysis (CA), rather than include it as part of the Performance Assessment. The requirement for preparation of a CA did not appear in DOE Order 5820.2A. Therefore, many of the facilities now in operation did not initiate preparation of a CA until after the PA was prepared. Furthermore, the CAs that have been prepared used essentially the same guidance that currently supports the DOE Order and Manual 435.1 CA requirement. As a result, little or no transition is expected to be necessary for aligning the CAs with current DOE Order and Manual 435.1 requirements. If any transition is required, it should be done using an approach similar to that described above for PAs.

### **3.4 TRANSITION FOR CERCLA DISPOSAL FACILITIES**

Facilities that are developed and operated as on-site disposal cells for CERCLA wastes are subject to EPA requirements (or corresponding state CERCLA requirements) as well as DOE requirements that implement Atomic Energy Act (AEA) responsibilities for low-level radioactive waste disposal. The Department has sought to limit duplication of effort in compliance with the similar implementing requirements of CERCLA and AEA. The DOE “Policy for Demonstrating Compliance with DOE Order 5820.2A for On-Site Management and Disposal of Low-Level Wastes Under the Comprehensive Environmental Response, Compensation, and Liability Act” provided that substantive AEA requirements that were satisfied by CERCLA activities did not need to be duplicated for the purpose of compliance with DOE requirements. The policy also provided that compliance with administrative requirements in DOE low-level waste disposal directives need not be demonstrated. The concept of a crosswalk between CERCLA and AEA implementing requirements was incorporated in DOE Manual 435.1.

The crosswalks between CERCLA and AEA requirements need not demonstrate compliance with administrative requirements of DOE directives, so no transition from DOE Order 5820.2A administrative

requirements to DOE Manual 435.1 administrative requirements is required. On the other hand, substantive differences between DOE Order 5820.2A and DOE Order and Manual 435.1 may require revision of the CERCLA crosswalk. Changes to the CERCLA crosswalk and the related composite analysis (if a separate CA was required) can be addressed on a schedule compatible with the DOE Manual 435.1 requirement for annual disposal facility summaries which may identify other changes needed to maintain the validity of disposal facility documentation.

### **3.5 USE OF PA/CA MAINTENANCE IN TRANSITION**

Included in the provisions of DOE Order and Manual 435.1 is a requirement for maintenance of PAs and CAs. Regular reviewing and updating of these documents is intended to incorporate monitoring results and improved data and modeling techniques to reduce uncertainty in PAs. Maintenance of PAs and CAs provides an obvious opportunity to ease the transition to the new requirements of DOE Order and Manual 435.1, and this opportunity is explicitly suggested in the “Maintenance Guide for U.S. Department of Energy Low-Level Waste Disposal Facility Performance Assessments and Composite Analyses” (draft, October 7, 1999).

### **3.6 RAMIFICATIONS OF THE CONTRACTOR REQUIREMENTS DOCUMENT**

The contractor requirements document for the new Radioactive Waste Order states in essence that the requirements of DOE Order 435.1 apply to disposal facilities operated on behalf of DOE by site contractors. However, the terms of contracts for operation of DOE facilities are not automatically modified when DOE requirements are revised. Therefore, the provisions of DOE Order 435.1 are not technically enforceable on contractors unless their contract is formally modified to require compliance.

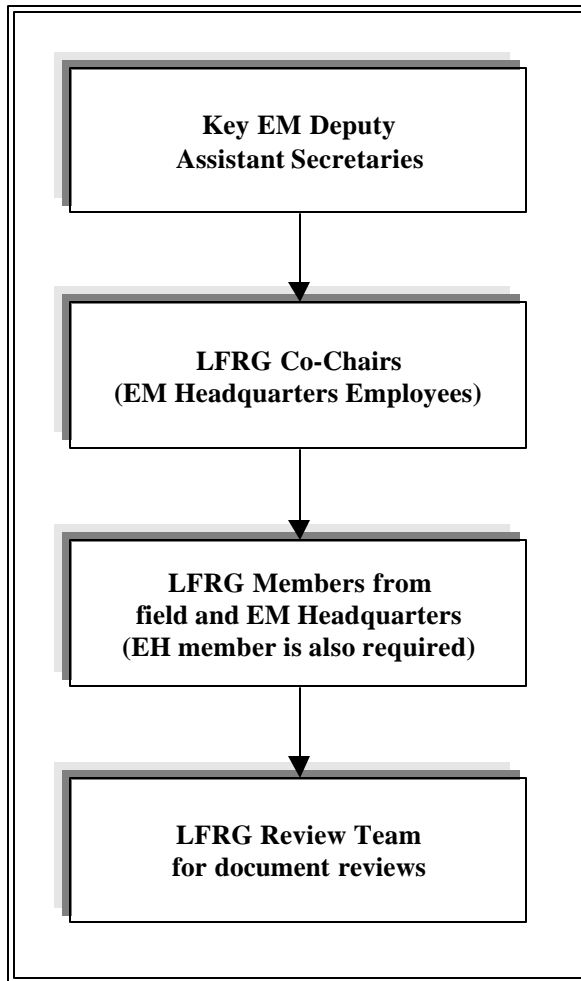
The contract operators of DOE sites are obligated to comply with DOE Orders only if required in their contract. The DOE Orders are administrative requirements and therefore are not enforceable unless the requirements are cited in the contract and agreed to by the parties.



## 4.0 ROLES AND RESPONSIBILITIES

This section, in conjunction with the procedures described in the section on Management Process, specifies which personnel associated with the LFRG are to perform the various activities. The purpose of this section is to provide a concise enumeration of the actions expected of personnel, thereby reducing the potential for an action being overlooked. Some of the information provided will duplicate information also

**Figure 4-1. Low Level Waste Federal Review Group Organization**



presented in the Management Process section. This section is intended to provide current LFRG personnel with a clearer understanding of the actions expected of them and to provide prospective participants in LFRG activities an appreciation of the actions they would be asked to perform. Many of the responsibilities described in this document are articulated in the LFRG Charter. Roles and responsibilities assigned to organizations that interact with the LFRG are also described. Table 4-1 lists the roles and responsibilities of the LFRG participants and Figure 4-1 illustrates their organizational relationships. The key EM Deputy Assistant Secretaries cited in Figure 4-1 are specified in DOE Manual 435.1.

### 4.1 CO-CHAIRS

The co-chairs are responsible for managing the overall operation of the LFRG. Organizational responsibilities include establishing and maintaining LFRG membership, establishing operating procedures, conducting meetings, and promoting timely completion of LFRG activities. Maintaining membership includes identifying and appointing prospective LFRG members in consultation with the cognizant Deputy Assistant

Secretaries, regularly reviewing the organizations represented on the LFRG to ensure representation of the major affected organizations, and encouraging active participation by members.

As the leaders of the LFRG, the co-chairs are responsible for communicating results of LFRG deliberations to affected sites and to upper-level managers, guiding the preparation of LFRG documentation, planning and scheduling LFRG meetings and conference calls, selecting Review Team Leaders, approving Review Team members nominated by the Review Team Leader, and approving and signing documents on behalf of the LFRG. The co-chairs are not authorized to sign Disposal Authorization Statements unless that authority is explicitly delegated to them by their Deputy Assistant Secretary.

**Table 4-1. LFRG Roles and Responsibilities**

Task	Field	LFRG		Review Team		EM HQ Mgt.	Comments
		Co-Chairs	Full LFRG	Leader	Full Team		
<b>Basic Tasks</b>							
Prepare and Submit PA and CA to Headquarters Management	U						
Forward PA and CA to LFRG	U					U	The field distributes to field members and EM HQ management distributes to HQ LFRG members.
Preliminary PA/CA Review and Determination of Readiness		U	U				This review is to provide a preliminary assessment of PA/CA quality and completeness.
Appoint Review Team Leader		U					
Completeness reviews of PA/CA				U			This review is to confirm that the PA/CA is ready for review and to guide identification of necessary expertise.
Appoint Review Team Members				U			The LFRG Co-Chairs must concur on nominees
Develop Review Plan				U			The full Review Team reviews and concurs
Brief LFRG on Review Plan				U			The full LFRG must approve the review plan
Perform Site Visits					U		
PA/CA Technical Reviews					U		
Prepare Draft Review Team Reports					U		
Submit Draft Review Team Reports to Site					U		The site reviews the report for factual accuracy
Brief LFRG					U		
Submit Final Review Team Reports to LFRG					U		
Develop Disposal Authorization Statement, Compliance Evaluation, and Recommendations and Submit to LFRG				U			The Review Team Leaders may enlist the assistance of LFRG members, LFRG staff, or Review Team members.
Review, Revise, and Forward Key Documents to EM HQ Management			U				
Accept/Reject LFRG Recommendations						U	
Sign the Approved Disposal Authorization Statement						U	

Task	Field	LFRG		Review Team		EM HQ Mgt.	Comments
		Co-Chairs	Full LFRG	Leader	Full Team		
<b>Specific Tasks</b>							
Appoint LFRG Co-Chairs						U	Co-Chairs are selected from EM HQ staff
Appoint LFRG Members		U					LFRG Co-Chairs nominate LFRG members, in consultation with management of each site; EM HQ management concurs
Coordinate LFRG Activities		U					
Chair Meetings and Conference Calls		U					
Develop and Approve LFRG Guidance Documentation		U	U			U	Co-Chairs develop documentation; full LFRG reviews and revises; EM HQ management approves
Obtain Time and Travel Commitment for Review				U			
Prepare Team Members for Review				U			
Identify/Address Member Conflicts of Interest				U			
Coordinate and Manage Review Team Activities				U			
Coordinate Communications Among Site, Team and LFRG				U			
Compile the Review Team Report				U			
Ensure Preparation of a Complete Administrative Record				U			
Ensure Completion of Follow-Up Commitments				U			
Confirm Review Assignments with Team Leader					U		Also applies to consultants
Evaluate PA/CA Against Criteria in Assigned Areas					U		Also applies to consultants
Provide Review Results in Assigned Areas to Leader					U		Also applies to consultants
Assist Team Leader as Requested for Follow-Up					U		Also applies to consultants

## 4.2 MEMBERS

The LFRG members are responsible for participation in the meetings of the LFRG and other activities as directed by the co-chairs. The LFRG members are predominantly from field organizations with low-level waste disposal facilities. Only the members and co-chairs of the LFRG are permitted to vote. Members

will review and comment on all organizational and procedural documentation prior to final approval by the co-chairs. Members of the LFRG are to possess expertise in policy analysis, and to have liberal access to site management so they know the policies and positions of their respective sites and can effectively articulate them in LFRG venues. The members' roles and responsibilities are formalized in the LFRG Charter.

The members' technical skills will be drawn upon for review of Performance Assessments, Composite Analyses, and related plans such as closure plans, monitoring plans, and PA/CA maintenance plans. The co-chairs may request LFRG members to prepare recommendations to cognizant Deputy Assistant Secretaries regarding approval or rejection of Disposal Authorization Statements. Review Team Leaders may also be asked to prepare draft compliance evaluations and Disposal Authorization Statements and to review correspondence related to PA/CA review and approval.

An on-going LFRG activity in which the members will participate is the regular verification that each approved PA and CA is revised and updated as required to remain valid. Disposal facility personnel are to notify their site LFRG member of changes to their facilities and operations. The notification mechanisms will include the annual summaries for PA/CA maintenance as well as reports to the LFRG during LFRG meetings and conference calls. The members are to perform at least a cursory review of the change documentation and ensure that it is appropriately forwarded to the LFRG. Members are responsible for obtaining commitments from their management to support time and travel requirements for participation in LFRG activities.

### **4.3 SUPPORT PERSONNEL**

The LFRG support personnel perform or assist in performing many of the responsibilities of the LFRG co-chairs, LFRG members, and Review Team Leaders. Specific tasks include collection and management of the permanent files of the LFRG; preparation of draft correspondence, draft meeting minutes, draft procedures and other organizational documentation, draft LFRG guidance including the LFRG Manual, format and content guides, Charter, review guide, and maintenance manual; distribution of written PA/CA materials to the members of the LFRG for review and comment; and performance of logistics and preparation for LFRG meetings and conference calls. Support personnel with technical expertise may also be asked to assist with preparation of documentation for facility reviews and authorizations. Support personnel may include both Federal employees and contractor personnel.

### **4.4 REVIEW TEAM LEADERS**

The leaders of LFRG Review Teams focus on managing the actions of the Review Team and whether the subject PA and/or CA adequately demonstrates that the disposal facility will satisfy DOE requirements. Only federal employees are permitted to serve as Review Team Leaders. Important responsibilities include preliminary review of the documents to gauge readiness for review by a full team and nomination of team members for approval by the LFRG co-chairs.

The team leader serves as the overall manager of his Review Team and coordinates activities and communications with both the LFRG and personnel at the site under review. A critical responsibility of the team leader is review of the site documents to identify the areas of expertise that must be represented in the Review Team membership. The team leader is also in charge of ensuring that the team members obtain appropriate training and information on the mission of the LFRG and the processes developed to achieve that mission. He/she may also provide expertise in one or more of the topical areas that must be reviewed.

The team leader is responsible for development of a review plan, implementation of the review plan, assignment of required tasks to the Review Team members, coordinating logistics for site visits, managing information exchange, obtaining necessary resource commitments, preparing key documents, assembling the administrative record, and presenting briefings that describe the review activities and results. The team leader may also be tasked with preparation of compliance evaluations and Disposal Authorization Statements.

The team leader may delegate authority for performance of many of these activities to a deputy team leader but retains ultimate responsibility for successful completion of all aspects of a review program. Another option that the team leader may exercise is the appointment of a Review Team coordinator, typically a member of the team. A comprehensive list of Review Team Leader responsibilities appears in Appendix E.

#### **4.5 REVIEW TEAM MEMBERS**

Review team members are responsible for the work required to evaluate a PA or CA. They assist the Review Team Leader in preparation of the review plan, implementation of the plan, on-site review, and preparation of documentation. Review team members devote special attention to the review of documents related to their area of expertise. They assist in the review of the PA and CA and preparation of the Review Team Report. At least one member of each Review Team must be an LFRG member. Review Team members may be DOE employees or contractors. A comprehensive list of Review Team member responsibilities appears in Appendix E.

#### **4.6 REVIEW TEAM CONSULTANTS**

Review team consultants are expected to provide support to the team in their areas of expertise. They may participate in all Review Team activities in order to achieve a full understanding of the disposal site, its environmental context, and its operation. However, they are not allowed to vote on issues to be decided by the Review Team. Generally, Review Team consultants are expected to provide behind-the-scenes support to the Review Team members and may not be required to participate in all Review Team activities. A comprehensive list of Review Team consultant responsibilities appears in Appendix E.

#### **4.7 SITE PERSONNEL**

Site personnel are responsible for preparation of the PA, CA, and related documentation such as the maintenance plan, monitoring plan, and closure plan. They are also responsible for assisting the Review

Team during the site visit, providing information required for thorough review of the facility, and reviewing the PA/CA Review Team Report for factual accuracy. If revisions or addenda to the PA and/or CA are required, site personnel are to prepare them. They are also responsible for regular review and maintenance of the documentation supporting disposal authorization to ensure that it remains up-to-date and valid. Site personnel are responsible for maintaining up-to-date copies of key documents, including the PA, CA, and the Disposal Authorization Statement. Generally, drafts and changes to the PA/CA are made by the contractor and reviewed by the DOE site personnel. Site personnel responsibilities that involve formal submission of documents to Headquarters should be endorsed and forwarded by appropriate DOE field office personnel rather than site contractor personnel.

## **4.8 INTERACTING ORGANIZATIONS**

A principal interacting organization is the Office of Environment, Safety, and Health. Under the provisions of the DOE radioactive waste management requirements in DOE Order and Manual 435.1, the Assistant Secretary for Environment, Safety, and Health (EH) is responsible for independent overview of LLW disposal to assess compliance with DOE, Environmental Protection Agency (EPA), and state requirements. A representative of EH serves as a member of the LFRG to enhance consultation with EH in the review and approval process.

When a disposal facility is developed and operated as an on-site disposal cell for CERCLA wastes under the provisions of both CERCLA and AEA, there is a need for the developer and operator to coordinate with the LFRG and the EPA and cognizant host state agencies to ensure that the requirements of all are being met. The LFRG is responsible for evaluating compliance with DOE AEA requirements and the CERCLA regulator is responsible for determining compliance with CERCLA requirements.

Another interacting organization is the National Nuclear Security Administration. The LFRG assesses National Nuclear Security Administration disposal facilities and documents the results. The LFRG assessments provide a basis for National Nuclear Security Administration authorization to operate and any appropriate conditions for operation.

Table 4-1 lists the roles and responsibilities associated with (1) developing the procedures for operation of the LFRG and (2) implementing those procedures to effect the goals of the LFRG. The individuals and organizations charged with implementation of a specific role or responsibility should be actively involved in the development of that role or responsibility. For that reason, the implementation roles and responsibilities are presented first in the table.

## **5.0 LFRG PROCESSES**

### **5.1 MANAGEMENT PROCESSES**

This section provides the following information to those associated with the LFRG:

- The steps required to achieve specific objectives;
- The means to maintain and access LFRG information;
- The planning process for anticipation and coordination of important activities; and
- The communications protocols, the review protocols, and the identification and description of external factors that influence the activities and decisions of the LFRG.

This guidance establishes the conceptual descriptions of detailed procedures contained within the LFRG Manual.

#### Task Management

The principal tool for identifying, scheduling, and completing tasks required of the LFRG is the task tracking system. It should include provisions for tracking activities directly related to the preparation of key disposal facility documents, as well as indirectly related activities such as development of operating procedures and description of responsibilities. This tool will be developed and maintained by the LFRG support staff.

#### Document Review Process

A structured document review process has been developed to promote thorough, consistent review of the key documents submitted to the LFRG. The process identifies the types of documents under review and provides sufficient detail to guide LFRG activities from receipt of a document to final disposition. The review process depends on the nature and importance of the document reviewed. The detailed process is included in Appendix B.

#### Document Preparation Process

A document preparation process has been developed to promote consistent format and content of the key documents prepared by the LFRG. The process identifies the types of documents to which it will be applied and provides sufficient detail to guide LFRG activities from initial drafting through final approval. The detailed process is included in Appendix C.

## Meeting and Conference Call Process

A meeting and conference call process has been developed to describe the types and frequencies of the various deliberation approaches of the LFRG. The detailed process is included in Appendix D.

## Web Page and Newsletter

The LFRG business management process will include an Internet Web site and a newsletter to coordinate/document LFRG activities. Headquarters staff will maintain the Web page information and provide access to LFRG management and process documentation including the status of disposal operations, annual reviews, decision documents and action/task management. A copy of this information will be distributed to the LFRG members.

## **5.2 REVIEW TEAM PROCESSES**

The LFRG review process includes selection of a highly qualified team to perform in-depth critiques that are then forwarded with findings and recommendations to the LFRG for further consideration. Typically, a Review Team will be selected for review of the PA/CA for a single site or facility. This section describes the creation of Review Teams and their responsibilities. Additional information is provided in the LFRG Manual.

The following sections contain an overview of the detailed guidance given in the LFRG Manual.<sup>6</sup>

### Review Criteria

A portion of this guidance that is essential for consistent, comprehensive review of disposal documentation is the review criteria. These criteria were developed to provide guidance to Review Teams as well as to provide insight to document preparers on how the adequacy of their work will be determined. The review criteria now in use are outlined in the LFRG Manual released in November 1999 which is consistent with the requirements of DOE Order and Manual 435.1.

### Review Plan

A major responsibility of the Review Team is the preparation of the review plan for the facility being reviewed. The plan is to outline the general approach, specific activities, and schedule for the review and describe the application of the EM Quality Assurance Program, documenting any modifications to the standard review criteria necessitated by site-specific conditions, and planning to protect the health and safety of the team and its support personnel. The LFRG Manual provides further details on the preparation and content of the review plan.

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<sup>6</sup>*Low-Level Waste Disposal Facility Federal Review Group Manual, Revision 1, November 1999.*



## Review Team Documentation

The formal record of the activities and deliberations for a Review Team is intended to document the process, the substantive findings, and the conclusions. Important process documentation includes:

- The Review Plan, including names, biographical information, and qualifications for the team leader, team members, team consultants, and other support personnel;
- Site visit interactions and results (minutes for the site visits);
- Correspondence;
- Technical documents;
- Meeting minutes; and
- The Review Team Report (typically the reviews of the PA and CA are included in one document).

Further description of the Review Team administrative record as well as the format and content of selected documents appears in the LFRG Manual.

## On-Site Activities

An effective and efficient site visit requires detailed preparation. All team members should be familiar with the PA and CA, review additional site and facility documentation that provides helpful background and insights, and prepare lists of topics and questions to be discussed with site personnel. The team leader is responsible for consulting with site personnel to identify mutually acceptable site visit logistics. The required elements and expectations for the visit are to be provided in writing to appropriate site personnel and a mutually agreeable agenda developed for the site visit. To the extent practical, meetings with site personnel should be scheduled in advance to promote attendance by the most appropriate site personnel. A key logistics element for site visits is advance preparations for badging and training in essential health and safety preparation and procedures. Near the end of the site visit, the team leader is to conduct a closeout briefing to allow for questions and answers with site personnel, discussion of any additional documentation or site visit needs, and information exchange.

## Review Team Reports

The Review Team Report is a comprehensive summary of the activities, chronology, Review Team credentials, communications, review processes, findings, and recommendations. The LFRG Manual provides suggested outlines for PA Review Team Reports and CA Review Team Reports. The Review Team is not, however, required to follow the outlines to the letter. The outlines provide a base case that can be tailored to specific features and circumstances for the site under review. The fundamental purpose of the Review Team Report is to provide a context for the review and to present the review findings and

Review Team recommendations. Sometimes, the PA and CA for a site are provided to the LFRG simultaneously, the review of both documents is performed by the same Review Team, and the Review Team Reports for the PA and CA are combined in one document.

The key elements of the Review Team Report include a description of the disposal site, summary of the PA and CA review, evaluation of the technical adequacy of the PA and CA, and consistency of the PA and CA with relevant requirements (laws, regulations, DOE orders, DOE guidance, and binding agreements with stakeholders and regulators). The Review Team Report should also include a discussion of unresolved issues. There are two kinds of unresolved issues that could arise. First, there may be issues identified by the Review Team that the site does not have time or resources to correct prior to issuance of the Review Team Report. Second, there may be differences in professional judgement among the Review Team members that cannot be resolved. Both of these types of unresolved issues are to be included in the Review Team Report. The appendices of the Review Team Report may contain detailed items such as point-by-point enumeration of compliance of the site with the review criteria in the LFRG Manual, and a chronological list of Review Team activities.

### Issue Resolution

Critical to the resolution of many issues is communication. In the course of document review and site visits, the Review Team will encounter descriptions and activities that may be unclear and may lead the Review Team to the incorrect conclusion that there is a problem when, in fact, there is simply a lack of information. Thorough discussion of issues with site personnel may lead to resolution by simply correcting a misconception.

In other cases, the issue may be precipitated by competing policies or requirements. It may not be possible for the Review Team to resolve these issues. Any unresolved issues of this type will need to be elevated to the deliberations of the LFRG or higher for resolution.

Finally, there may be unresolved issues among the Review Team members that arise from differences in professional judgement. These issues should be elevated for resolution to the LFRG discussion of the Review Team Report. Members may also choose to include a dissenting opinion in the Review Team Report.

## **6.0 DOCUMENT UPDATES**

The documents that describe the responsibilities and activities of the LFRG (e.g., DOE Manual 435.1, LFRG Manual) may require revisions. These documents are referred to in Section 6.2 as “Guidance Documents.” The guidance documents may require revision for several reasons including changes to DOE orders, changes to related regulations, problems identified during application of processes and procedures, and changes in organizational structures.

The documents that are reviewed by the LFRG (e.g., performance assessments, composite analyses) and created by or for the LFRG (e.g., disposal authorization statements, compliance evaluations) may also require revision. These documents are referred to in Section 6.3 as “Implementation Documents.” Reasons for revisions to documents produced by and for the LFRG include incorporation of better information and data, addition of new information, changes in operation, changes in waste, improved assessment approaches, and correction of errors.

This chapter describes the conceptual foundation for the processes established for changing guidance documents and implementation documents. It also describes the processes that have been devised to revise the documents systematically.

When changes are made to LFRG documents, it is important to verify that revisions are correct, approved by appropriate personnel and that affected and interested parties are notified. All changes are documented in the appropriate administrative records. The following describes the basic processes that guide changes for LFRG documents including changes required for maintenance of PAs and CAs.

### **6.1 CHANGE CONTROL PROCESS**

Changes and revisions to documents should be developed by a process similar to that used to create the original document. Changes to a document should be approved by personnel in positions similar to or the same as the positions held by personnel who approved the original document. The significance of a proposed document change dictates whether it is immediately implemented or postponed until changes sufficient to justify revision of the document have been accumulated. Sufficient information should be retained to trace the origin and rationale for the changes made.

The LFRG member from each site is expected to remain current on the status of facilities and operations at their site. When documentation is prepared for submission to Headquarters, the member from the submitting site is responsible for reviewing and evaluating its suitability for submission and ensuring that it is appropriately transmitted to the LFRG. The conceptual elements of document revision are incorporated in the discussions below.

### **6.2 GUIDANCE DOCUMENTS**

Following is a list of the key documents that guide the actions of the LFRG and that may be subject to change:

- C DOE Order and Manual 435.1
- C DOE Guide 435.1-1
- C LFRG Charter
- C LFRG Manual
- C LFRG Program Management Plan
- C Format and Content Guide for U.S. Department of Energy Low-Level Waste Disposal Facility Performance Assessments and Composite Analyses
- C Maintenance Guide for U.S. Department of Energy Low-Level Waste Disposal Facility Performance Assessments and Composite Analyses
- C Format and Content Guide for U.S. Department of Energy Low-Level Waste Disposal Facility Closure Plans

The Order, Manual, and Guide are available through the DOE Directives System. All of the remaining documents except the LFRG Program Management Plan are being added to the DOE Directives System as guides for DOE Manual 435.1 (the LFRG Charter is provided in Appendix A). The DOE Directives System will be the best source for current copies of these documents, but they may also be obtained from the LFRG staff.

### **6.2.1 DOE ORDER, MANUAL, AND GUIDES 435.1**

Revision of the DOE Order 435.1 and associated manual and guidance must be performed under the provisions of DOE Order and Manual 251.1, Directives System. Orders, Manuals, and Guides are reviewed every two years, and the review may result in cancellation, revision, or continuation. The office of primary interest provides advice to the directives system manager regarding action that should be taken based on the review and may also initiate changes to a directive at other times. For DOE Order 435.1 and associated manual and guidance, the office of primary interest is the Office of Environmental Management. If revision is required, the revisions are accomplished through the same process that was used to develop the original documents.

The development and revision process for orders and manuals is somewhat more formal and complex than that for guides. Both essentially rely on development of a draft that is circulated to departmental elements for review and comment followed by issue resolution. Upon completion of issue resolution, concurrence is sought and the revisions are implemented.

Changes to DOE Order 435.1 and the associated manual and guidance may be initiated for reasons that are not directly related to the LFRG, and could require conforming changes in the subordinate LFRG documents. The opposite may also occur. That is, the LFRG may seek to revise DOE Order 435.1 and the associated manual and guidance to add, delete, or modify requirements imposed on the LFRG. In either case the DOE directives process provides for distribution of proposed and approved changes to the affected parties. It also provides for documentation through the directives management document of the purpose, applicability, impact, cost of implementation, and related directives. The exact revisions are documented in page changes that are distributed with all copies of the original order, manual, or directive.

## **6.2.2 LFRG CHARTER**

The LFRG Charter authorized the establishment and operation of the LFRG in fulfillment of the requirement at Section I.2.E(1)(a) of DOE Manual 435.1. This requirement provides that two key Deputy Assistant Secretaries in the Office of Environmental Management “...shall establish a review panel consisting of DOE personnel to review low-level waste disposal facility Performance Assessments and Composite Analyses, review appropriate CERCLA documentation, recommend low-level waste disposal facility compliance determinations to the Deputy Assistant Secretaries, and develop Disposal Authorization Statements.” (Appropriate CERCLA documentation may be used to satisfy certain requirements of DOE Order 435.1 and the associated manual and guidance.)

The requirement was satisfied with the signature by the Deputy Assistant Secretaries of the Charter for the Office of Environmental Management Low-Level Waste Disposal Facility Federal Review Group. The co-chairs of the LFRG, appointed by the Deputy Assistant Secretaries, also acknowledged concurrence in the Charter with their signatures.

The basic elements of the Charter are specified in DOE Manual 435.1, and include requirements that the review panel consist of DOE personnel; that the panel make recommendations to the Deputy Assistant Secretaries regarding approval or rejection of PAs and CAs; and that they develop Disposal Authorization Statements. There are also details in the Charter on which the manual is silent. Those provisions can be revised with the approval of the Deputy Assistant Secretaries and concurrence of the co-chairs as long as they are not inconsistent with the requirements in DOE Orders and Manuals. The details in the Charter include items such as responsibilities of co-chairs and members, quorum requirements, qualifications of members, and voting rights.

The Charter was drafted by the co-chairs and reviewed and consented to by the members of the LFRG. Therefore, revisions to the Charter should be subject to the same actions.

## **6.2.3 LFRG MANUAL**

The LFRG Manual provides an overview of the activities of the LFRG; describes in detail the process used by the LFRG for review of PAs and CAs; presents the complete suite of criteria used in the review of PAs and CAs, along with explanatory notes; and provides detailed guidance to the LFRG for preparation of Disposal Authorization Statements and related documents such as compliance evaluations. The LFRG Manual was prepared by the LFRG co-chairs, members, and support staff. The Revision 0 of the manual was adopted in September 1998 and was forwarded to the DNFSB by the Assistant Secretary for Environmental Management.

Revision 1 was issued in November 1999 to bring the manual into conformance with the final version of DOE Order 435.1 and the associated manual (adopted July 9, 1999), as well as to add a chapter on preparation and approval of Disposal Authorization Statements. The new version of the LFRG Manual was signed by the LFRG co-chairs and provided to the DNFSB by the Assistant Secretary for Environmental Management.

## **6.2.4 LFRG PROGRAM MANAGEMENT PLAN**

The LFRG Program Management Plan (this document) describes LFRG roles and responsibilities, management processes, and the conceptual foundation for transition from the LFRG requirements of DOE Order 5820.2A to those of DOE Order 435.1 and the associated manual and guidance. The Program Management Plan (PMP) is intended to assist LFRG members on procedures for accomplishing their objectives and to provide insights into LFRG activities for interested and affected parties. It was prepared by the LFRG co-chairs, members, and support staff with input from interested and affected parties, and final site approval was sought from the DOE Field Office Managers.

Subsequent revisions of the LFRG PMP can be prepared by the LFRG with final approval by the Field Office Managers.

## **6.2.5 FORMAT AND CONTENT GUIDE FOR PERFORMANCE ASSESSMENTS AND COMPOSITE ANALYSES**

The format and content guide for PAs and CAs provides preparation information to the site personnel who prepare PAs and CAs. This process for development of PAs and CAs is structured to assist site personnel in preparing (1) a PA that provides a reasonable expectation the subject facility will satisfy the performance objectives of DOE Manual 435.1 and (2) a CA that can be relied upon to provide planning information for maintaining combined dose contributions within allowable limits. The format and content guide is closely linked to the LFRG Manual by specifying the topics that the reviewers of the PA and CA will use for evaluation. The LFRG review criteria used by Review Teams provide the basis for the content expected in PAs and CAs, and promote consistency among DOE low-level waste disposal facilities and related documentation.

The format and content guide for PAs and CAs was prepared under the direction of the LFRG co-chairs and provided to the LFRG members for review and comment. Feedback from the members was incorporated, and the finished document was submitted to the DNFSB in fulfillment of a DOE commitment under Recommendation 94-2. Revisions to the format and content guide may be proposed by the co-chairs and incorporated in consultation with the members. When significant changes are made, the DNFSB should be provided a revised version by the Assistant Secretary for Environmental Management.

## **6.2.6 MAINTENANCE GUIDE FOR PERFORMANCE ASSESSMENTS AND COMPOSITE ANALYSES**

The maintenance guide for PAs and CAs provides information to site personnel to support revisions of the documents as needed to keep them current. As new or better information is available, the PAs and CAs are examined to determine whether changes are required and whether the conclusions of the PA or CA are affected. Appropriate changes to the PA and CA may be made via (1) the annual summary of disposal facility operations, or (2) the discovered and proposed change processes (See Section 6.3.1).

The PA/CA maintenance guide was developed under the direction of the LFRG co-chairs and submitted to the LFRG members for review and comment. The input provided by the members was incorporated, and the final document was submitted to the DNFSB to satisfy a commitment in the 94-2 Implementation Plan. Revisions to the format and content guide may be proposed by the co-chairs and incorporated in consultation with the members. When significant changes are made, the DNFSB should be provided a revised version by the Assistant Secretary for Environmental Management.

### **6.2.7 FORMAT AND CONTENT GUIDE FOR CLOSURE PLANS**

The format and content guide for closure plans provides guidance to the preparers of disposal facility closure plans. At least a preliminary closure plan must be available at the time disposal authorization is granted. The guidance is designed to provide a framework for development of site-specific closure plans and to promote consistency in disposal facility closure plans among the DOE disposal facilities. While it does enumerate the technical topics to be addressed, it does not provide technical information that could be used for designing closure features.

The format and content guide for disposal facility closure plans was prepared under the direction of the LFRG co-chairs and provided to the LFRG members for review and comment. Input from the members was incorporated, and the finished document was submitted to the DNFSB in fulfillment of a DOE commitment under Recommendation 94-2. Revisions to the format and content guide may be proposed by the co-chairs and incorporated in consultation with the members. When significant changes are made, the DNFSB should be provided a revised version by the Assistant Secretary for Environmental Management.

## **6.3 IMPLEMENTATION DOCUMENTS**

Following is a list of the key documents that are created by or for the LFRG and that may be subject to change:

- C Performance Assessments and Composite Analyses
- C Review Team Reports
- C Disposal Authorization Statements
- C Compliance Evaluations
- C Facility Closure Plans and Facility Monitoring Plans
- C PA and CA Maintenance Plans

### **6.3.1 PERFORMANCE ASSESSMENTS AND COMPOSITE ANALYSES**

These complex documents represent a major investment of resources to gather the necessary data and to incorporate it into sophisticated analyses. The technical basis of the PA/CA provides a quantitative evaluation of the likelihood that a facility will satisfy the performance objectives imposed by DOE Manual 435.1. The Performance Assessment and Composite Analysis are prepared under the direction of site personnel responsible for the operation of the disposal facility. Facility drafts are submitted to the cognizant

DOE operations office for review and resolution of remaining issues prior to submission to headquarters. The processes for PAs and CAs are similar and they are often coincidentally prepared, submitted, reviewed, and approved. For clarity, the following discussion is based on the assumption that coincident PAs and CAs are not unusual, and therefore this section uses the term PA/CA to refer to both documents. A roughly similar process is used for review and approval of the crosswalks between DOE and CERCLA where facilities are managed and closed under both requirements.

The PAs and CAs are submitted to the cognizant Deputy Assistant Secretary who in turn forwards them to the LFRG for preliminary evaluation. If the evaluation yields the preliminary conclusion that they are complete and merit further consideration, a Review Team Leader is selected. The Review Team Leader performs a more thorough review to evaluate suitability of the document for full review. If found suitable, a Review Team is selected to review the PA/CA. One of the first actions of the Review Team is performance of a completeness review to determine whether the necessary elements of the PA/CA have been included. The subsequent review process includes site visits, consultations with site personnel, and preparation of a Review Team Report. Site personnel are asked to examine the Review Team Report for factual accuracy.

The Review Team Report is forwarded to the LFRG for consideration and is discussed in depth at an LFRG meeting. The deliberations may lead to a recommendation that the PA/CA be approved, approved with conditions, or rejected. If the PA/CA is rejected, the Review Team will provide feedback to the site to guide revision of the PA/CA to correct the deficiencies. If the PA/CA is approved, a compliance evaluation and Disposal Authorization Statement are prepared, revised by the LFRG as needed and forwarded to the cognizant Deputy Assistant Secretary for final action.

Authorized disposal facilities are subject to regular reviews by site personnel to ensure that the associated PA/CA and other documentation are maintained. If the reviews identify improved information or analytical processes that could significantly alter the results of the PA/CA, the site personnel are expected to prepare revisions or addenda to capture the improvements and their impact on the results. If the revisions or addendum confirm a significant alteration in the results of the PA/CA, the changes must be submitted to the LFRG for review. The LFRG then prepares a recommendation for approval, modification, or rejection of the changes to the cognizant Deputy Assistant Secretary. Finally, the cognizant Deputy Assistant Secretary approves or rejects the proposed changes. An analogous process may be used to update and revise a CERCLA crosswalk.

There are four review thresholds that trigger the review by the LFRG. The change thresholds are:

1. An increase of 25 percent or more in the forecasted doses reported in the current, approved PA/CA or any violation of the performance objectives imposed by DOE Manual 435.1.
2. Any change in the point of compliance as reported in the current, approved PA/CA.
3. Any fundamental change in the analysis methodology or model used for the PA/CA.



4. Any fundamental change in the hydrologic or geologic parameters used in the methodology or model.

These thresholds describe the types of changes that must be submitted to the LFRG for review and approval. Thresholds 2, 3 and 4 trigger review even if they do not trigger Threshold 1. (Note: these four thresholds do not trigger revision of the PA, CA, or Disposal Authorization Statement. They trigger review of the change to evaluate the need for revisions.)

Section IV.P.(4)(a) of DOE Manual 435.1 requires review and revision of performance assessments and composite analyses when changes alter the conclusions or conceptual models of the existing PA/CA. The LFRG review process for changes to a PA/CA is described in detail in Appendix F and is referred to as the LFRG Oversight and Decision Cycle. The process is referred to as a “cycle” because of recurring annual summaries as well as unscheduled reviews of changes which may be discovered at any time. For these changes, disposal facility personnel are to describe the changes, determine whether the changes alter the conclusions of the PA/CA. The review process for PA/CA changes may be initiated as follows:

- a. **Annual Summary:** Personnel from each authorized disposal facility are required to prepare an annual summary of operations. The annual summary must include a determination of the continued adequacy of the PA/CA as well as a facility description addressing the authorized design and operating limits.
- b. **Discovered and Proposed Changes:** Periodically, disposal facility personnel may seek to modify the limits or conditions under which the disposal authorization was granted. For example, a generator of low-level waste may suggest that a new waste form is more economical than an authorized form and yet have no impact on transportation and disposal. Such changes are referred to as “proposed changes.” During facility operations, it may be determined that actual site characteristics or design features are inconsistent with the characteristics used in the PA/CA. Such changes are referred to as “discovered changes.”

The four review thresholds described above should be applied to the changes initiated by either of these means.

Circumstances which could lead to changes in the PA/CA may also require changes to the Disposal Authorization Statement. The review process for Disposal Authorization Statement changes is described in the next section of this chapter and is integrated into the process for review of documentation.

### Annual Summary

The annual summary is submitted after the end of each fiscal year and addresses changes that occurred during the immediate past fiscal year. Possible decision pathways through the LFRG Oversight and Decision Cycle for review of annual summaries are illustrated in Appendix F, Figure F-1. The annual summary may include proposed changes and/or discovered changes. The requirement in DOE Manual 435.1 specifies that annual summaries “...shall be prepared with respect to the conclusions and

recommendations of the Performance Assessment and Composite Analysis and a determination of the need to revise the Performance Assessment or Composite Analysis.” The DOE Manual 435.1 also requires an annual determination of the continued adequacy of the PA/CA. The annual determination is to consider the results of data collection and analysis from research, field studies, and monitoring. The LFRG site member is expected to remind disposal facility personnel of due dates for annual summaries and perform at least a cursory review prior to submission to the LFRG.

### Discovered and Proposed Changes

Proposed changes are changes initiated by site personnel to expand the range of authorized operation and design limits. Proposed changes are initiatives that site personnel can explore unimpeded as long as the exploration itself does not impact health and safety. Depending on the importance of obtaining approval for a proposed change, the site personnel may elect to present the change as part of the annual summary. The LFRG site member is to be notified of proposed changes and to report them to the LFRG during the next meeting or conference call. If the LFRG site member determines that the change does not trigger one of the four review thresholds described above, then the site may make the change prior to reporting it to the LFRG. Then the change would be documented in the next annual summary. If the LFRG site member determines that the change triggers one of the thresholds, the complete documentation is forwarded to the LFRG for review and approval.

The criterion used for LFRG review of proposed changes is whether they would lead to alteration of the conclusions of the PA/CA or exceed the limits of the Disposal Authorization Statement. Possible decision pathways through the LFRG Oversight and Decision Cycle are illustrated in Appendix F, Figure F-3.

Discovered changes are differences between site characteristics, design features, or operations used in the PA/CA analyses and actual site characteristics, design features, or operations. The LFRG Oversight and Decision Cycle for review of discovered changes is illustrated in Appendix F, Figure F-3. As with proposed changes, the LFRG site member is to be notified of discovered changes and to report them to the LFRG during the next meeting or conference call. Changes that trigger one of the four thresholds described above must be documented and submitted to the LFRG for review and approval.

Discovered changes should be subject to at least a preliminary analysis by the site for potential health and safety impacts. The preliminary analysis should assess the risks of any delay resulting from submission of documentation to the LFRG as part of the next annual summary versus submitting documentation to the LFRG as soon as possible. The LFRG site member is to be notified of discovered changes and perform at least a cursory review to assess the need for submission of the change documentation to the LFRG.

### Core Review Process

The LFRG review process is similar for all site responses or submissions. If review of the documentation reveals that a PA/CA conclusion will be altered or that a Disposal Authorization Statement will require changes, the LFRG will accept, accept with conditions, or reject the site analysis and proposed actions. If deficiencies are identified (including disagreement with the proposed actions), the documentation will be

returned to the site for rework and/or revision. Details on review topics are provided in Appendix G. Although the guidance in Appendix G is focused on review of annual summaries, the review guidance and topics can also be applied to other types of changes.

When the LFRG finds the description, analysis, and proposed action acceptable, the site finalizes needed changes, if any, to the PA/CA and the LFRG reviews any PA/CA revisions, either at the time they are made or when the annual summary is submitted. The LFRG finalizes any needed changes to the Disposal Authorization Statement.

The core review process (illustrated in Appendix F) includes three decision points (blocks 4, 5 and 7) that direct the path of the review. Proper implementation of the review process requires understanding of the subtleties of the decision points. Site responses to Disposal Authorization Statement conditions and commitments must be fully examined and approved by the LFRG even if no changes to the PA/CA conclusions or the Disposal Authorization Statement are involved. Another nuance of the decision points arises when a discovered or proposed change triggers one of the four review thresholds. In this case, the site may be free to consummate the changes without further LFRG authorization if the changes do not affect PA/CA conclusions or require changes to the Disposal Authorization Statement. The LFRG has the option of visiting the site to (1) seek additional details on the changes the site has documented and (2) identify any changes that have yet to be discovered.

The LFRG is committed to reviewing within 30 days, documentation submitted from the sites. The documentation will be submitted to LFRG members. Review by the LFRG staff will occur simultaneously and the results will be available to the LFRG members. If the documentation is voluminous or complex, the LFRG response may consist of an acknowledgment and a schedule for completion of the review. If review of the site's documentation reveals that conclusions of the PA/CA are not altered by the change and therefore there is no need for amendment of the Disposal Authorization Statement, the site may proceed without further authorization. An important point to remember is that thresholds that trigger LFRG review are not the same as the thresholds that trigger PA, CA, and Disposal Authorization Statement revisions.

### **6.3.2 DISPOSAL AUTHORIZATION STATEMENTS**

The ultimate focus of the LFRG is the granting and maintenance of a Disposal Authorization Statement. The Disposal Authorization Statement is the final essential document required to authorize the operation of a disposal facility. The requirements of DOE Order 435.1 state that a review panel (i.e., the LFRG) will be established by key EM Deputy Assistant Secretaries to prepare Disposal Authorization Statements (see Section I.2.E(1)(a)). The LFRG typically appoints a Review Team Leader who drafts the Disposal Authorization Statement for distribution to the LFRG. A majority of the LFRG must vote in order to approve a Disposal Authorization Statement prior to forwarding it to the cognizant deputy assistant secretary for approval.

Directly linked to the preparation and approval of a Disposal Authorization Statement is the preparation of a compliance evaluation. The purpose of the compliance evaluation is to document the findings of the LFRG regarding the PA/CA. Other elements of the compliance evaluation are any conditions for

acceptance of the PA/CA and other information important to promoting continued protection of the public and environment. The compliance evaluation may be prepared prior to or concurrent with preparation of the Disposal Authorization Statement.

The initial Disposal Authorization Statement often includes conditions that must be satisfied to maintain its approval. When the host site for a disposal facility has responded to the conditions imposed on the Disposal Authorization Statement, the LFRG must review the responses to determine whether the conditions have indeed been satisfied and can therefore be removed from the Disposal Authorization Statement. The LFRG site member is expected to perform at least a cursory review prior to submission to the LFRG. When the conditions have been satisfied, the Disposal Authorization Statement should be revised to indicate compliance.

During regular reviews of facility performance, there may arise a need to impose new conditions on the Disposal Authorization Statement that must be satisfied in order to maintain authorization for the facility. These revisions should follow the same process for preparation that the original Disposal Authorization Statement followed including approval by the LFRG and cognizant Deputy Assistant Secretary. Whether a facility is allowed to continue operation while the Disposal Authorization Statement is under revision is a determination that should be based on the gravity of the revision and made by the cognizant Deputy Assistant Secretary.

The review process for Disposal Authorization Statement conditions and commitments submitted by a site is presented in Appendix F, Figure F-4. The process is integrated with the annual summaries as well as for proposed and discovered changes. Examination of the flowchart in Appendix F reveals the similarities in the processes for review of documentation on proposed and discovered changes and justifies their being presented as a single combined process.

### **6.3.3 REVIEW TEAM REPORTS**

A Review Team Report is prepared by the LFRG PA/CA Review Team. The report presents the findings of the team and describes the major and minor issues. These reports provide the basis for LFRG deliberations regarding approval of the PA/CA. Prior to preparation of the final Review Team Report, the host site for the facility under review is provided an opportunity to provide comments relative to factual accuracy.

Since the Review Team Report is essentially used for the initial determination of acceptability of the PA/CA, there is little likelihood that updating or revising it would be useful after approval of the PA/CA. Subsequent determinations of the continued validity of the PA/CA are expected to rely on recent evaluations. The original Review Team Report will be relegated to reference status. Nevertheless, in the unlikely event that the Review Team Report requires revision, it should be done by or in cooperation with the LFRG member who served on the Review Team and possibly the Review Team Leader as well. In addition, the host site should be afforded the opportunity to correct any factual errors in the proposed changes. A majority of the LFRG must agree for final acceptance of the change.

### **6.3.4 COMPLIANCE EVALUATIONS**

Compliance Evaluations are prepared to summarize the conclusions of a PA/CA with respect to the performance objectives and other criteria. As with Review Team Reports, there is little likelihood that updating a compliance evaluation will be required for future validations of the PA/CA or for other reasons. Nevertheless, should such action be required, it must be approved by a majority of the LFRG.

### **6.3.5 FACILITY CLOSURE PLANS AND FACILITY MONITORING PLANS**

Section IV.P(5) of DOE Manual 435.1 specifies that granting a Disposal Authorization Statement should be based on review of several documents in addition to the PA/CA—namely the preliminary closure plan, the preliminary monitoring plan, and the PA/CA maintenance plan. The provision is intended to emphasize the importance of these plans in developing, operating, and closing a disposal facility to provide a reasonable expectation of protection of human health and safety and the environment. The role of the LFRG is to verify that the documents have been prepared and are acceptable. In some cases a Disposal Authorization Statement may be granted with conditions requiring that one or more of these documents be prepared and submitted to the LFRG by some date subsequent to approval of the Disposal Authorization Statement.

It is reasonable to expect the LFRG to continue cursory review of the results of the monitoring plan and to ensure that the results are appropriately considered in the regular reviews of facility performance. It is also legitimate for the LFRG to monitor continued progress in refinement of the facility closure plan. The purpose of overviews of monitoring and closure plans is not detailed scrutiny and editing but rather ensuring that those efforts are properly pursued and that they support good operations and planning for closure. The preparation of the documents is largely in the hands of disposal facility personnel, so revisions may be prepared and implemented by site personnel. Facility personnel should, however, submit revisions of the documents to the LFRG to keep them informed and to help them maintain an up-to-date administrative record.

### **6.3.6 PA/CA MAINTENANCE PLANS**

The PA/CA maintenance plan is an important document designed to ensure that the PA/CA is kept current with improved information and analysis techniques. The maintenance plan is focused on the documents that are critical to the facility. The LFRG should regularly review it and suggest needed revisions. The maintenance plan is initially reviewed by the LFRG as part of the preparation for development and approval of the Disposal Authorization Statement for a site. Its preparation often follows the development of the Disposal Authorization Statement except that approval is granted, in effect, by the LFRG rather than the cognizant Deputy Assistant Secretary. Therefore, subsequent revisions of the maintenance plan may be developed by the host site and reviewed by the LFRG. Copies of the most recent version of the PA/CA maintenance plan should be included in the facility administrative record and provided to the LFRG and interested and affected parties.

## APPENDIX A

### CHARTER

#### OFFICE OF ENVIRONMENTAL MANAGEMENT LOW-LEVEL WASTE FEDERAL REVIEW GROUP

##### I. Mission

The Office of Environmental Management (EM) Low-Level Waste Federal Review Group (LFRG) was established to fulfill the requirements contained in Section I.2.E(1)(a) of DOE Order 435.1 and exercised by the upper-level managers of the Office of Environmental Management (EM). The LFRG assist's upper-level EM managers in the review of documentation related to the approval of performance assessments and composite analyses or appropriate Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) documentation as described in Section II of this charter. Through its efforts, the LFRG supports the issuance of Disposal Authorization Statements for low-level radioactive waste disposal. The LFRG also assists in other duties associated with low-level waste (LLW) disposal authorizations as assigned by upper-level EM managers.

##### II. Objectives

Through the establishment and implementation of the LFRG process, the Department evaluates operational suitability of DOE disposal facilities through compliance with DOE LLW disposal requirements. The LFRG process supports the self-regulation responsibility imposed on the Department of Energy (DOE) under the Atomic Energy Act of 1954 as amended.

The specific objectives of the LFRG are:

- C Track the preparation and completion status of documents prepared to demonstrate compliance with DOE LLW disposal requirements and report this information to upper-level EM managers;
- C Develop and conduct a formal review process that documents an auditable analysis and review of key documents and provides for creation and maintenance of the administrative record of the LFRG and its actions;
- C Review documentation submitted by LLW disposal facility host sites and support the process of granting Disposal Authorization Statements;
- C Provide the cognizant upper-level EM managers with approval recommendations that represent the decisions of the LFRG membership;

- C Prepare Disposal Authorization Statements, with conditions when justified, for DOE LLW disposal facilities; and
- C Conduct reviews and assessments as directed by upper-level EM managers and provide recommendations.

The key documents, utilized to support development and approval of Disposal Authorization Statements for DOE LLW disposal facilities, consist of one of two document sets: (1) an approved performance assessment and composite analysis; or (2) appropriate CERCLA documentation that demonstrates compliance with the substantive requirements of DOE Order 435.1. Demonstration of compliance through the appropriate CERCLA documentation shall be summarized with a crosswalk that identifies each DOE LLW requirement satisfied by CERCLA. Substantive DOE LLW requirements unsatisfied by CERCLA are to be complied with separately. The LFRG is responsible for the determination of the adequacy of CERCLA documentation and for demonstrating compliance with DOE LLW requirements.

Based upon the review of either document set, a disposal authorization statement is prepared by the LFRG for consideration by the cognizant upper-level EM manager. Upon approval, the disposal authorization statement is signed by the cognizant upper-level EM manager.

### III. Organization

The Co-Chairs of the LFRG are appointed by upper-level EM managers from among their staffs. The Co-Chairs are responsible for establishing and maintaining LFRG membership and establishing operating procedures, conducting meetings, and communicating results of LFRG deliberations to affected sites and to upper-level EM managers. Procedures, responsibilities, schedules, and other appropriate information for organization and operation of the LFRG will be documented in the LFRG Program Management Plan.

Members of the LFRG are recruited by the Co-Chairs in consultation with upper-level EM managers. The membership of the LFRG shall consist of Federal employees from Headquarters and field organizations. A representative from the DOE Office of Environment, Safety and Health (EH) shall serve on the LFRG to provide environment, safety, and health technical expertise. Members of the LFRG are expected to be competent in the technical evaluation of the documentation to be reviewed by the LFRG, to possess expertise in policy analysis, and to hold positions that authorize them to act on behalf of their respective organizations. The members of the LFRG are responsible for participation in the meetings of the LFRG and other activities as directed by the Co-Chairs. Continued membership on the LFRG is dependent upon adequate participation and timely review of documentation as determined by the Co-Chairs. Members of the LFRG shall serve until replaced or removed by the Co-Chairs.

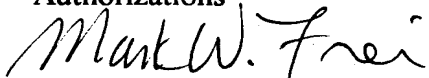
A review team is established for each specific site review. A review team leader is selected by the LFRG Co-Chairs in consultation with the LFRG members and must be a Federal employee. The review team leader selects the balance of review team members with the concurrence of the Co-Chairs. Review team members are selected based on their qualifications for addressing key elements of the documentation to be reviewed. One or more of the review team members will be an LFRG member.


IV. Quorum and Voting

The desired quorum for deliberations by the full LFRG is a majority of the current membership (which includes the Co-Chairs). The LFRG Co-Chairs seek a consensus on the decisions of the LFRG. Ultimately, decisions are approved by affirmative vote of a simple majority of the LFRG members and Co-Chairs. Minority reports may be appended to records of LFRG decisions at the request of any member or Co-chair. Only LFRG members have voting rights. These rights may not be delegated to individuals participating in LFRG activities as representatives of the members.

In instances when a majority cannot be achieved, the LFRG Co-Chairs may jointly act on behalf of the LFRG. Decisions made solely by the Co-Chairs on behalf of the majority must be documented in writing and noted as having been made by the Co-Chairs rather than by majority.

V. Authorizations

  
\_\_\_\_\_  
Mark W. Frei  
Acting Deputy Assistant Secretary  
for Waste Management

  
\_\_\_\_\_  
James J. Fiore  
Acting Deputy Assistant Secretary  
for Environmental Restoration

VI. Concurrences

  
\_\_\_\_\_  
Jay Rhoderick  
LFRG Co-Chair

  
\_\_\_\_\_  
William E. Murphie  
LFRG Co-Chair

**LFRG Charter, 9/1/99**



## **APPENDIX B**

### **DOCUMENT REVIEW PROCESS**

#### **Purpose**

The following procedure is designed to specify:

- C The individuals and organizations responsible for coordinating review of LFRG documents;
- C The documents that require LFRG review;
- C The individuals tasked with review of each type of document;
- C The approximate time frame to be allocated for review;
- C The process for addressing LFRG document review comments;
- C The process for preparation of the LFRG response to the documents reviewed including the substance of the review and any conclusions; and
- C The identification of individuals authorized to sign responses for each type of document reviewed.

The staff supporting each of the Co-Chairs of the LFRG are tasked with monitoring the activities and plans of the LFRG to identify documents received and expected that will require review. The review may be required of the following LFRG elements: Co-Chairs, the LFRG members, EM personnel supporting the Co-Chairs, Review Team Leaders and members appointed by the LFRG, and in some cases individuals and organizations beyond EM.

The documents that should be considered for review by LFRG include

- A. Performance Assessments
  1. Reviewed by the Review Team appointed by the LFRG
  2. Approximately 3 months allocated for review including a site visit by the Review Team
  3. Review Team comments are consolidated into the Review Team Report (which is reviewed for factual accuracy by the affected field office) and submitted to the LFRG for review, final approval, and submission to the field office
  4. The cover letter to the field office is to be drafted by the Co-Chair support staff, approved by the Co-Chairs, reviewed and revised in consultation with the LFRG members, signed by the Co-Chairs, and sent to the site

- B. Composite Analyses
1. Reviewed by the Review Team appointed by the LFRG
  2. Approximately three months allocated for review including a site visit by the Review Team
  3. Review Team comments are consolidated into the Review Team Report (which is reviewed for factual accuracy by the affected field office) and submitted to the LFRG for review, final approval, and submission to the site
  4. The cover letter to the field office is to be drafted by the Co-Chair support staff, approved by the Co-Chairs, reviewed and revised in consultation with the LFRG members, signed by the Co-Chairs, and sent to the site
- C. Review Team Reports
1. Reviewed by the LFRG members and comments submitted to the Co-Chairs.
  2. Approximately 30 working days are allocated for review of the Review Team Report (which has been reviewed for factual accuracy by the affected field office)
  3. Draft cover letter to the field office prepared by the Co-Chairs and sent to the Review Team Leader and the LFRG members for review
  4. Approximately 5 working days allocated for review of the letter
  5. Final cover letter to the field office prepared in consultation with LFRG members, approved, signed by the Co-Chairs and sent to the field office for action
- D. Responses from the cognizant field office (not the facility contractor) to issues raised in the Review Team Report
1. Distributed to the LFRG members and the Review Team Leader for review
  2. Approximately 30 working days allocated for review of the field office response
  3. Comments provided to the Co-Chairs.
  4. Co-Chair support staff prepare draft response in consultation with Co-Chairs and Review Team Leader
  5. The draft response is distributed to the LFRG for review
  6. Approximately 5 working days allocated for review of the draft letter
  7. Upon making changes as needed the final response is signed by the Co-Chairs and sent to the field office.
- E. Appropriate CERCLA documents submitted in lieu of a Performance Assessment. This documentation is to include a crosswalk showing how CERCLA documentation satisfies requirements of DOE Order 435.1.
1. Reviewed by the LFRG members or a Review Team appointed by the LFRG Co-Chairs
  2. Approximately three months is allocated for review of the CERCLA documents.
  3. Review Team (or LFRG) comments are consolidated into a Review Team Report (which is reviewed for factual accuracy by the affected field office) and submitted to the LFRG for review, final approval, and submission to the field office. The Co-Chairs may appoint one or more members of the LFRG to consolidate review comments if a Review Team was not appointed.

4. The cover letter to the field office is to be drafted by the Co-Chair support staff, approved by the Co-Chairs, reviewed and revised in consultation with the LFRG members in conjunction with review of the Review Team Report, signed by the Co-Chairs, and sent to the field office.
- F. Responses from the cognizant field office (not the facility contractor) to issues raised in the Review Team Report for appropriate CERCLA documentation
1. Distributed to the LFRG members (and the Review Team Leader if one was appointed) for review
  2. Approximately 30 working days allocated for review of the field office response
  3. Comments provided to the Co-Chairs.
  4. Co-Chair support staff prepare draft response in consultation with Co-Chairs (and the Review Team Leader, if one was appointed)
  5. The draft response is distributed to the LFRG members (and the Review Team Leader if one was appointed) for review
  6. Approximately 5 working days allocated for review of the draft letter
  7. Upon making changes as needed the final response is signed by the Co-Chairs and sent to the field office.

The support staff to the LFRG Co-Chairs are responsible for ensuring that copies of all reports, correspondence, and written comments are collected and filed to provide a record of all conclusions, conditions, and approvals as well as the supporting background information.

## APPENDIX C

### DOCUMENT PREPARATION PROCESS

#### **Purpose**

The following procedure is designed to specify:

- C The documents the LFRG will prepare;
- C The individuals tasked with drafting and completing each document type;
- C The approximate time frame to be allocated for preparation of each document type;
- C The process for revising and completing draft documents; and
- C The individuals authorized to sign LFRG documents.

The key documents that the LFRG and its support elements (e.g., Review Teams) will prepare include appointments of personnel to Review Teams; cover letters forwarding Review Team Reports to field offices; replies to proposed field office resolution of issues raised in Review Team Reports; recommendations for approval of Performance Assessments, Composite Analyses, and CERCLA documents used to demonstrate compliance with DOE Order 435.1 (and its successors); compliance evaluations; and Disposal Authorization Statements. The staff supporting each of the Co-Chairs of the LFRG are tasked with monitoring the activities and plans of the LFRG to identify documents that need to be prepared.

The procedures for preparation of the key document types include

- A. Appointments of Review Team Leader and Members
  1. Drafted by the Co-Chair support staff based on decisions of the Co-Chairs with input from the LFRG members
  2. Revised, completed, and sent to nominees by the Co-Chairs
  3. Preparation of this document type is expected to require approximately 3 working days
  4. Acceptance by the nominees is reported to the members of the LFRG
- B. Cover Letters forwarding final Review Team Reports to Affected Field Offices
  1. Drafted by the Co-Chair support staff based on input from the LFRG Co-Chairs and members
  2. The draft cover letter is submitted to the LFRG members and the Review Team Leader for review

3. The cover letter to the affected field office is revised in consultation with the LFRG members and the Review Team Leader, signed by the Co-Chairs, and sent to the affected field office with copies of the final signed version to the LFRG members
  4. Preparation of this document type is expected to require approximately five working days
- C. LFRG Replies to proposed Field Office Resolution of Issues raised in Review Team Reports
1. Drafted by Co-Chair support staff based on comments submitted to the Co-Chairs by LFRG members and the Review Team Leader
  2. Sent to the Review Team Leader and, in some cases, selected LFRG members for review
  3. Approximately five working days allocated for review of the letter
  4. Final letter to the affected field office prepared in consultation with LFRG members, approved, signed by the Co-Chairs and sent to the field office for action
  5. Approximately 10 working days are allocated for preparation of the reply (including review time)
- D. Recommendations for Approval of Performance Assessments, Composite Analyses, and CERCLA Documents used to Demonstrate Compliance with DOE Order 435.1 (and its successors)
1. Drafted by the support staff in consultation with the Co-Chairs and the Review Team Leader
  2. Distributed to the LFRG for reviewing the recommendation for approval and notifying the Co-Chairs of vote for or against the recommendation. A majority of the members of the LFRG must vote in favor of the recommendation to allow its submission to the DASs
  3. Co-Chairs may subsequently make minor changes to the recommendation without the need to obtain another vote of the LFRG
  4. Approximately 10 working days allocated for preparation, review, and submission of the recommendation (if approved) to the DASs
- E. Compliance Evaluations
1. Prepared by a subgroup of the LFRG and Co-Chairs' support staff in consultation with the Review Team Leader
  2. A separate compliance evaluation may be prepared for the Performance Assessment and the Composite Analysis for a facility or a combined compliance evaluation may be prepared.
  3. The compliance evaluation is distributed to the LFRG for review and approval. A majority of the members of the LFRG must vote in favor of the compliance evaluation to allow forwarding it to the DASs.
  4. Co-Chair support staff prepare the final compliance evaluation in consultation with Co-Chairs who sign and forward it to the DASs.
  5. Approximately 2 months is allocated for preparation, review, approval, and submission of the compliance evaluation to the DASs

F. Disposal Authorization Statements

1. Prepared by the Review Team Leader and Co-Chairs' support staff
2. The draft Disposal Authorization Statement can only be prepared after approval of the Performance Assessment and the Composite Analyses. It may accompany the compliance evaluation(s) when submitted to the DASs.
3. The draft Disposal Authorization Statement is distributed to the LFRG for review and approval. A majority of the members of the LFRG must vote in favor of the Disposal Authorization Statement to allow forwarding it to the DASs.
4. Co-Chair support staff prepare the final Disposal Authorization Statement in consultation with Co-Chairs who sign and forward it to the DASs.
5. Approximately 2 months is allocated for preparation, review, approval, and submission of the Disposal Authorization Statement to the DASs

The support staff to the LFRG Co-Chairs are responsible for ensuring that documents needed for effective operation of the LFRG are prepared, revised, submitted and filed as provided in this procedure. They are also responsible for tracking the drafting, review, and other elements of document preparation to ensure timely completion. Copies of all LFRG documents are to be collected and filed to provide a record of all conclusions, conditions, and approvals as well as the supporting background information.

## APPENDIX D

### MEETING AND CONFERENCE CALL PROCESS

#### **Purpose**

The following procedure is designed to specify:

- C The types of proceedings to be used by the LFRG to conduct business;
- C The approximate frequency with which the proceedings will be held;
- C The mechanisms for calling special proceedings;
- C The individuals responsible for coordination of proceedings; and
- C The means of establishing records of the proceedings.

The key types of proceedings to be used by the LFRG for conducting business are full LFRG meetings, Executive Committee meetings, full LFRG conference calls, and Executive Committee conference calls. In addition to regularly scheduled proceedings, special proceedings will be conducted. The special proceedings may be called when significant, time-consuming actions such as discussion of a Review Team Report are required of the LFRG. The staff supporting each of the Co-Chairs of the LFRG is tasked with monitoring the activities and plans of the LFRG to identify occasions when special proceedings are anticipated, preparing a schedule of regularly scheduled proceedings, coordinating logistics for proceedings, and ensuring proper record keeping for the LFRG proceedings.

The procedures for conduct of proceedings types include

- A. Full LFRG Meetings
  - 1. At least two LFRG meetings are to be conducted annually for deliberations on key documents such as Review Team Reports, Compliance Evaluations, and Disposal Authorization Statements. Review Team Report meetings should be conducted near the facility under review. Occasional full meetings may also be conducted when discussion of a key document is not on the agenda.
  - 2. An organization such as the Center for Low-Level Waste Excellence will be assigned responsibility for preparation of draft meeting minutes. The draft minutes will be circulated to the members of the LFRG for review and comment.
  - 3. The revised meeting minutes will be approved by the Co-Chairs, distributed to the LFRG, and placed in the permanent records of the LFRG.

B. Full Conference Calls

1. For routine business, conference calls provide a suitable means for communication
2. The principal support staff to the Co-Chairs are responsible for obtaining a conferencing number and distributing notification to the LFRG,
3. Preparation of the meeting minutes will be the responsibility of the principal support staff for the Co-Chairs but preparation of the initial draft may be delegated to an organization such as the Center for Low-Level Waste Excellence
4. Full membership conference calls should be held at least every other month

The support staff to the LFRG Co-Chairs are responsible for ensuring that meetings and conference calls required for effective functioning of the LFRG are properly planned, conducted, and documented. They are also responsible for tracking the drafting, review, and other elements of records of proceedings. Copies of minutes for all LFRG proceedings are to be collected and filed. The principal support staff may delegate this task, but remain accountable for maintaining complete records.



## **APPENDIX E**

### **REVIEW TEAM RESPONSIBILITIES**

The responsibilities of each person supporting a Review Team are discussed in this section.

#### *Review Team Leader*

The Review Team Leader manages the Review Team and serves as the primary contact point between the LFRG and the site representatives. The Review Team Leader's principal responsibilities are to:

- (1) Obtain commitment of time and travel funds, as necessary, from his/her manager to support the review effort. The office employing the Review Team Leader is asked to pay for the Review Team Leader's time and travel.
- (2) Select and familiarize Review Team including identifying and recruiting qualified DOE personnel as members and contractors as supplemental technical consultants, as necessary to meet the objectives of the review, with the concurrence of the LFRG Co-Chairs.
- (3) Identify and address any conflict of interest issues for Review Team members and technical consultants.
- (4) Manage and provide guidance to the Review Team concerning the overall review process and methodology, documentation requirements, draft and final Review Team Reports, Review Team meetings, and schedules.
- (5) Develop a Review Plan that describes site visits, review approach, review products, necessary documents, and review milestones and schedules.
- (6) Coordinate and manage Review Team discussions, site visits, and meetings.
- (7) Coordinate communications among the Review Team Leader, Review Team members and consultants, and the LFRG. Coordinate activities of Review Team members and consultants so the results of the review are integrated.
- (8) Serve as the point of contact for information requests regarding Review Team activities and reports.
- (9) Inform Review Team of any DOE Headquarters policy and/or program changes and other pertinent information that could affect the review process or schedule.

- (10) Compile the Review Team Report. Ensure the Report is accurate, objective, and thorough. Ensure that sufficient copies of the final Review Team Reports are printed and delivered to the LFRG, appropriate DOE Offices, and others.
- (11) Ensure, with assistance from the DOE liaison from the site under review, that all pertinent documentation is placed into the administrative record during the review. Maintain the administrative record and any other records and files associated with Review Team activities, and provide them to the LFRG with the Review Team Report.
- (12) Ensure, with assistance from the DOE liaison from the site under review, that progress on completion of any follow-up commitments (e.g., review of a report required by a condition contained in a Disposal Authorization Statement), LFRG recommendations, or other planned actions are tracked and reported to the LFRG until completed.

If desired, the Review Team Leader may appoint another individual to act as a Review Team Coordinator and delegate responsibilities to the coordinator. If appointed, the coordinator reports directly to the Review Team Leader throughout the review.

#### *Team Members*

The Review Team members may be either DOE employees or DOE contractors and their responsibilities are to:

- (1) Obtain commitment of time and travel funds, as necessary, from respective managers to support the review effort and to ensure continuity in Review Team membership. The office employing each Review Team member is asked to pay for the member's time and travel.
- (2) Confirm the review assignments with the Review Team Leader.
- (3) Evaluate the radiological assessment against the criteria applicable to their assignments and the scope of the review.
- (4) Provide the results of the radiological assessment review to the Review Team Leader. Ensure that the results are accurately reflected in the Review Team Report.
- (5) Review any follow-up documentation as requested by the Review Team Leader or the LFRG.

#### *Team Consultants*

The team consultants may be recruited to provide specific expertise not provided by the Review Team members. They are not expected to participate in all Review Team activities. Their responsibilities are to:

- (1) Advise the LFRG of any needed time and travel funds so resources can be allocated.
- (2) Confirm the review assignments with the Review Team Leader.
- (3) Evaluate the technical area(s) of the radiological assessment for technical adequacy consistent with their assignments and the scope of the review.
- (4) Provide the results of the radiological assessment technical area review to the Review Team Leader.
- (5) Review any follow-up documentation as requested by the Review Team Leader or the LFRG.

## **APPENDIX F**

### **LFRG OVERSIGHT AND DECISION CYCLE**

The LFRG Oversight and Decision Cycle is illustrated in Figures F-1 through F-4. The text in Section 6.3 of the PMP provides additional explanation of the figures. Figure F-1 highlights the circumstances that could initiate disposal facility documentation (after the Disposal Authorization Statement has been granted) and the potential pathways for review of the documentation by the LFRG.

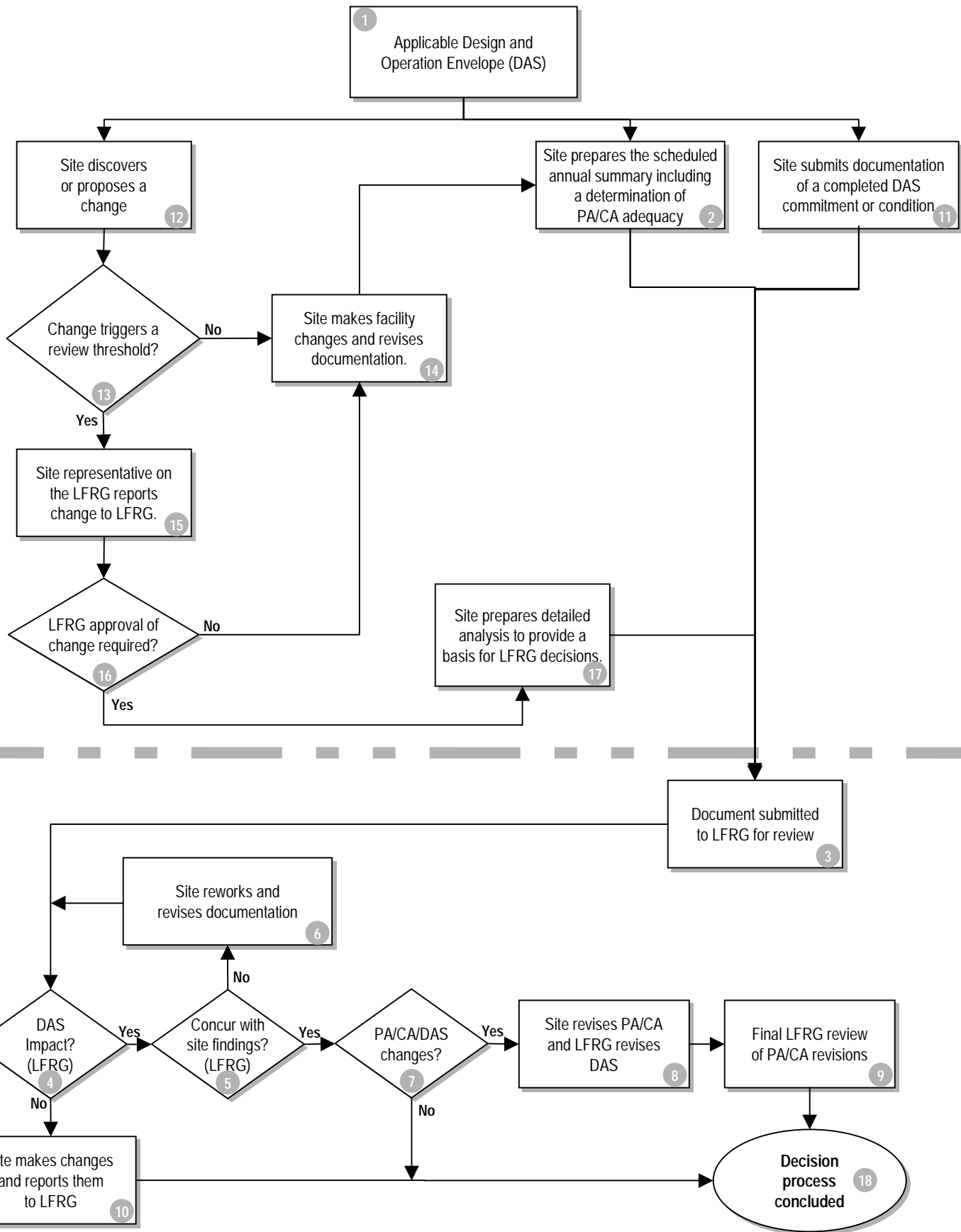
One purpose of the flowcharts is to present graphically the initiators of documentation describing changes in facility design or operations. The three initiators are represented by the top row of three blocks (i.e., blocks 2, 11, and 12). The other purpose of the flowcharts is to highlight the possible pathways that review of each document type might take through the LFRG Oversight and Decision Cycle. The documentation review (or core review process) portion of the flowchart is illustrated by the blocks and relationships appearing below the horizontal broken line near the middle of the page. Detailed notes at the end of this appendix correspond to the numbers in the shaded circles and provide details about each block.

Figure F-2 highlights the portions of the initiation and review process that might be applied if the documentation under review were an annual summary of facility operations. The portions of the process that are not applicable appear as shadowed lines, blocks, and print. Note that any of the core review pathways might be exercised for review of this type of documentation.

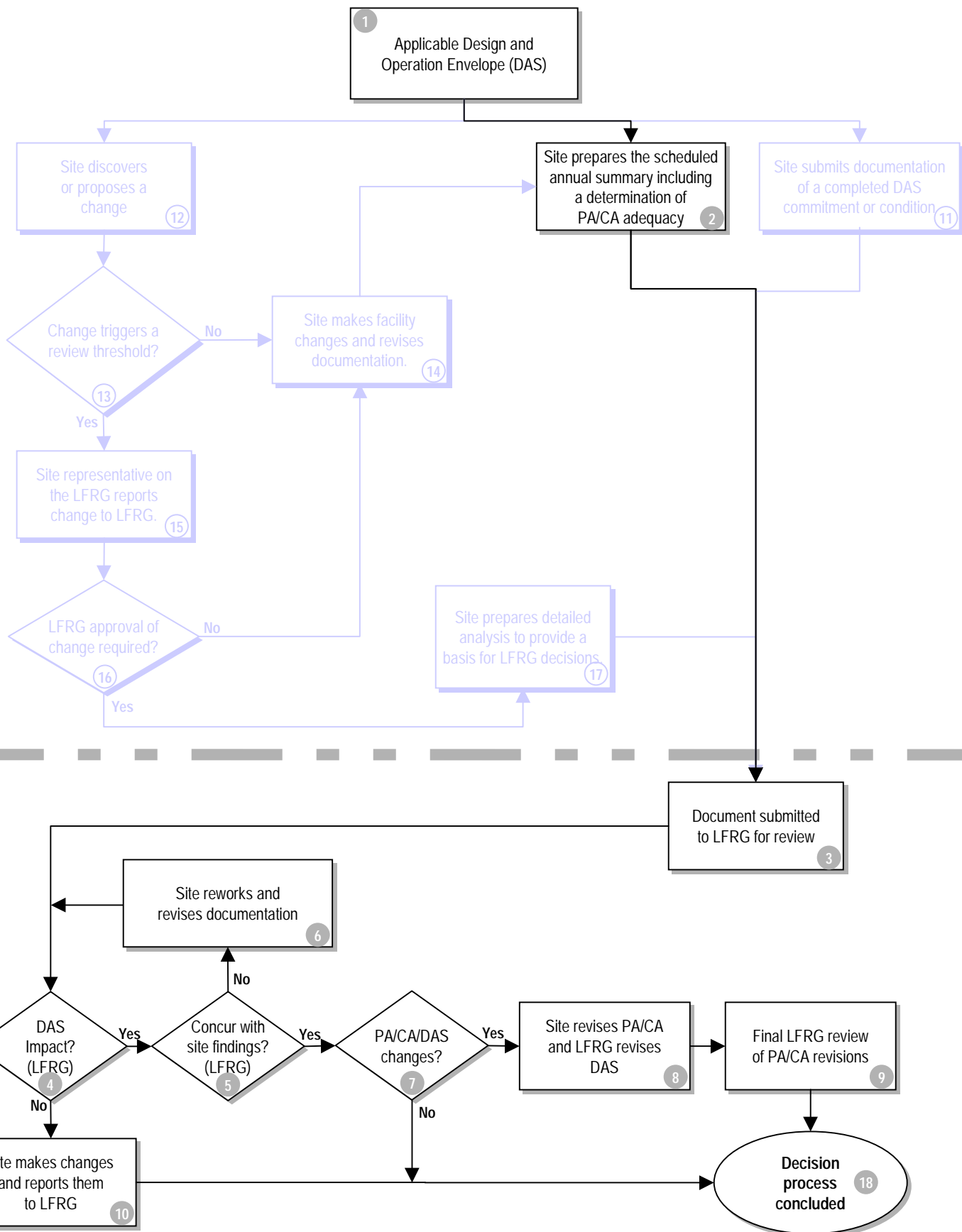
Figure F-3 highlights the portions of the initiation and review process that might be applied if the documentation under review addressed a discovered or proposed change of facility operations.

Figure F-4 highlights the portions of the initiation and review process that might be applied if the documentation under review were a site response to a disposal authorization condition or commitment. Note that for this initiator, a portion of the core review process (the part of the flowchart below the horizontal broken line) are not possible pathways and are shadowed.

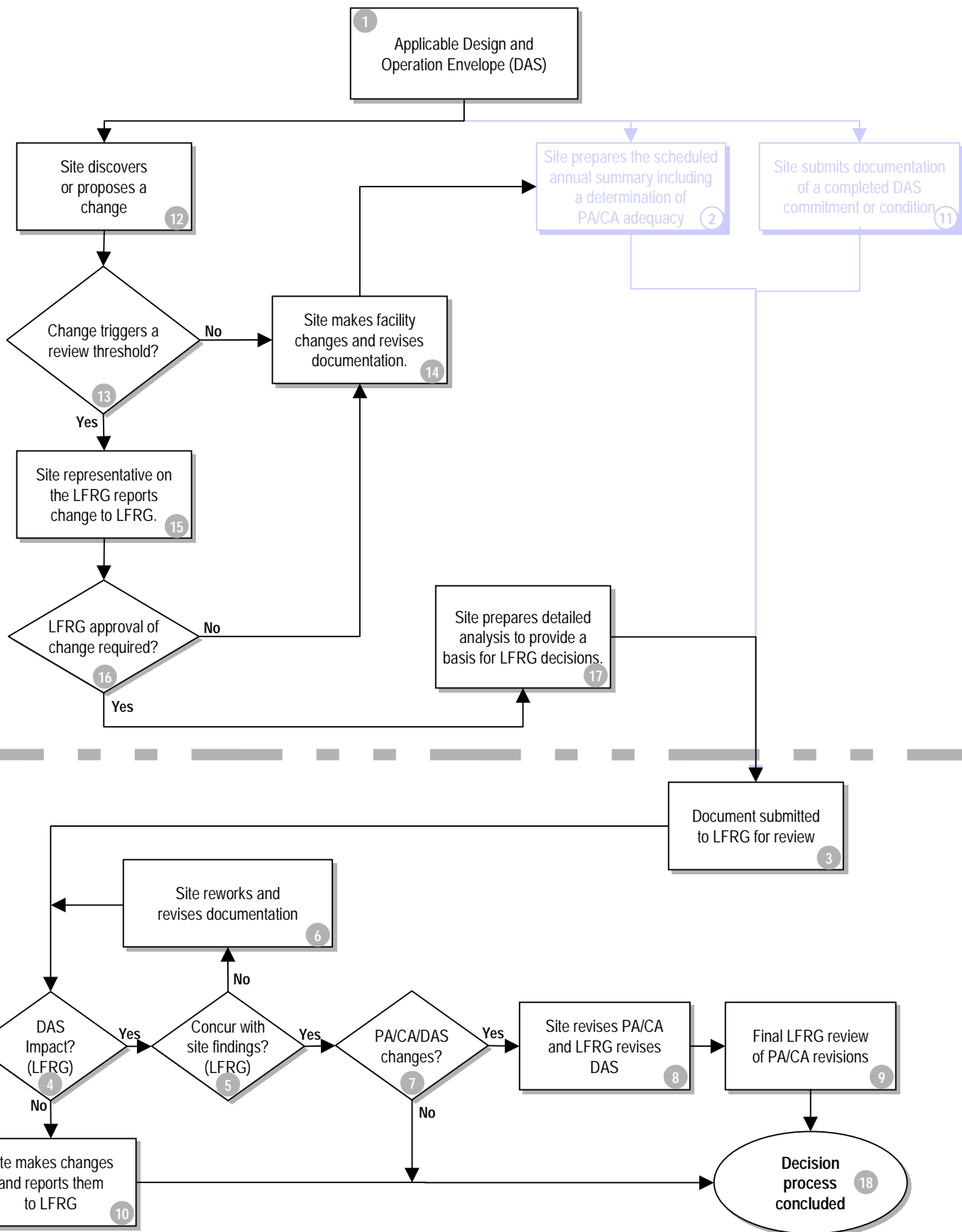
# Figure F-1. LFRG Oversight and Decision Cycle (All Initiators)



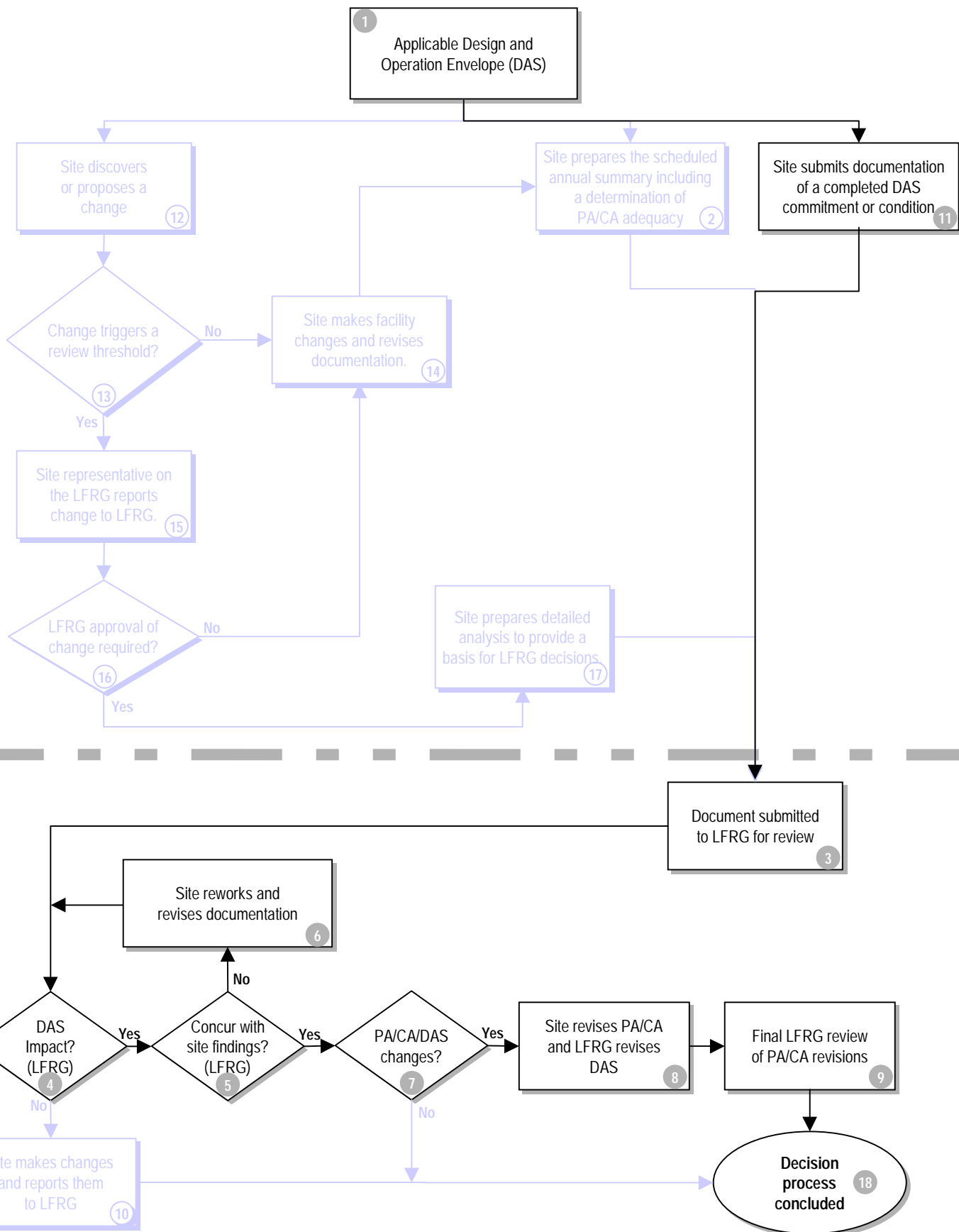
# Figure F-2. LFRG Oversight and Decision Cycle (Initiator: Annual Summary)



# Figure F-3. LFRG Oversight and Decision Cycle (Initiator: Discovered or Proposed Changes)



# Figure F-4. LFRG Oversight and Decision Cycle (Initiator: Disposal Authorization Commitment or Condition)





1. **Decision Cycle Initiation:** Block 1 indicates that documentation submitted for review via the processes illustrated in this flowchart may address departures from the ranges of design parameters and operating procedures authorized for the facility. There are three circumstances that can result in submission of documentation for review.
  - a. **Annual Summary:** Departures may be reported in the findings of the scheduled annual summary of operations as indicated by Block 2. The annual summary may also report that there have been no departures in the previous year from authorized design and operations ranges.
  - b. **Disposal Authorization Statement (DAS) Conditions and Commitments:** The documentation may be prepared in response to a condition or commitment imposed in the Disposal Authorization Statement. The documentation may be submitted to substantiate the proposed design and operations ranges, or it may provide justification for changing the ranges. This circumstance is illustrated by Block 11.
  - c. **Discovered or Proposed Change:** The departures may be precipitated by (1) decision of the facility personnel to seek, at a time other than the scheduled annual summary, a change in the authorized design or operations ranges; or (2) by facility personnel discovering or being apprised of a circumstance, at a time other than the scheduled annual summary, which may be outside the approved design and operations ranges. This circumstance is illustrated by Block 12.
2. **Annual Summary Requirement:** Block 2 accounts for the DOE Manual 435.1 requirement that the operators of low-level waste disposal facilities prepare an annual summary of operations to assess the need for any revisions to the PA/CA. The annual summary of operations is to address (1) whether the conclusions of the PA/CA are affected by changes in design and operations and (2) the continued adequacy of the PA/CA. The annual summary may also serve as the vehicle for proposing and providing the rationale for changes that could result in alteration of the conclusions of the PA/CA or that could require changes in the facility's Disposal Authorization Statement. [DOE Manual 435.1, Section IV.P(4)(b) and (c)]
3. **Document Submission:** Block 3 represents submission of documentation that requires review by the LFRG. The documentation submitted may vary depending on the circumstance (see Block 1) that initiated the Oversight and Decision Cycle. Note that all of the circumstances described for Block 1 can lead to submission of documentation. However, the annual operations summary and responses to Disposal Authorization Statement conditions and commitments are the only circumstances that will always lead to submission of documentation to the LFRG. If the circumstances described by Block 12 are judged by the site to trigger none of the four review thresholds listed in Section 2.5 of the text, then the site need not submit documentation to the LFRG until submission of the next annual summary.

When documentation is submitted, the LFRG is to respond within 30 days. The response within 30 days may consist of notifying the submitting site of the plan and schedule for reviewing the documents.

4. **Decision on Disposal Authorization Statement (DAS) Impact:** The LFRG review of the documentation should culminate in a determination that the circumstance documented will or will not have an impact on the Disposal Authorization Statement (Block 4). If no impact is expected, then the site personnel may proceed without authorization from the LFRG. By their nature, site responses to Disposal Authorization Statement conditions and commitments do have an impact on the Disposal Authorization Statement. For that circumstance, Block 5 is always the next step of the process. [DOE Manual 435.1, Section I.E(1) and Section I.F(2)]
5. **Decision on Site Findings:** If impact on the Disposal Authorization Statement is expected, then the LFRG must also determine whether the documentation submitted is complete and correct and whether they agree to the course of action described in the site documentation (Block 5). If the LFRG determines that the documentation is deficient (e.g., incomplete waste inventory, overlooked source term, unjustified suggested action, flawed analysis, unsupported assumption), then the documentation is returned to the site for reworking and revision as indicated by Block 6. (Note: For simplicity of explanation, it is assumed that the determinations of the LFRG will be supported by the cognizant Deputy Assistant Secretaries. Final decisions regarding changes to the conclusions of the PA/CA and changes in the Disposal Authorization Statement must be approved by the cognizant Deputy Assistant Secretaries.)
6. **Rework Documentation:** Block 6 represents returning documentation to the site for changes such as adding information or altering the course of action. The review and evaluation of documentation will usually involve consultation with the site, and the reworking and revision of the documentation is to be based in part on input from the LFRG.
7. **Decision on Changing PA/CA/Disposal Authorization Statement (DAS):** Block 7 represents the determination by the LFRG that the PA, CA, and Disposal Authorization Statement do or do not require changes to make them consistent with circumstances described in the documentation reviewed. If none of those documents requires changes, the decision cycle is completed as represented by Block 18.
8. **Authorization Documentation Changes:** The PA and CA are prepared by the site, so Block 8 indicates that changes to the PA/CA are also to be made by site. The Disposal Authorization Statement is prepared by the LFRG, so changes to it are to be made by the LFRG.
9. **Revised PA/CA Review:** Block 9 represents LFRG review of site revisions to the PA/CA to confirm that the changes reflect the decisions of the LFRG. Additional drafts may be required to capture adequately the decisions of the LFRG.
10. **Changes Not Affecting the Disposal Authorization Statement:** Block 10 illustrates site revision of facility documentation when the LFRG has concluded that the changes will not require alteration

of the Disposal Authorization Statement by virtue of changes in the conclusions of the PA/CA or for other reasons.

11. **Disposal Authorization Statement Conditions and Commitments Requirement:** Block 11 represents the submission of documentation to the LFRG in response to a condition or commitment imposed on the site in its Disposal Authorization Statement [see Block 1, item (b)]. The conditions and commitments usually are to be addressed within a specific time frame and require LFRG endorsement. Beyond submission by the site, the review process for the documentation follows the same process as review of the annual summaries described in Block 2 except the decision in Block 4 is always positive (i.e., “yes”) so Block 5 always follows.
12. **Discovered or Proposed Change Requirement:** Block 12 illustrates the circumstance (Block 1, item (c)) in which a site discovers or perceives a need to alter some aspect of facility operations or design that may result in a change in the conclusions of the PA/CA or require a change in the range of operation authorized by the current Disposal Authorization Statement. Alterations may be proposed to accommodate new waste forms, greater disposal inventories, more efficient waste emplacement, and other similar circumstances. Such alterations may also be handled through the annual summaries unless determinations are required in a faster timeframe.(DOE Manual 435.1, Section IV.P(4)(a))
13. **Site Decision on Negative Impact:** Block 13 represents the LFRG decision on whether the discovered or proposed changes triggers a review threshold (see Section 2.5). If the site concludes that the discovered or proposed changes would not trigger a review threshold, the site member of the LFRG reports the change to the LFRG within two months.
14. **Changes Consummated:** The site need not seek LFRG authorization prior to making these changes.
15. **Report to LFRG:** Block 15 represents the LFRG member from the subject site reporting the discovered or proposed changes to the LFRG. The changes may be reported during an LFRG meeting or conference call.
16. **LFRG Decision on Approval:** Block 16 represents the decision of the LFRG on whether detailed LFRG review is required.
17. **Proposed Revision Prepared:** This block represents the preparation by the site of documentation describing the circumstance to be reviewed, analysis of the potential for related changes in the PA/CA or the Disposal Authorization Statement, and other relevant supporting data and information. From Block 17 forward, the review process is identical to that for annual summaries.
18. **Decision Process Concluded.**

## **APPENDIX G**

### **CHECKLIST FOR REVIEW OF ANNUAL SUMMARIES**

Purpose: To provide a list of items that should be assessed by the LFRG in evaluating the consistency of low-level waste disposal facility operations, physical characteristics, and site characteristics (as reported in annual summaries) with performance objectives and the disposal authorization for the facility. The documentation for which this guidance is designed is the annual summary required of each disposal facility by DOE Manual 435.1, Section IV.P(4)(c): “Annual summaries of low-level waste disposal operations shall be prepared with respect to the conclusions and recommendations of the Performance Assessment and Composite Analysis and a determination of the need to revise the Performance Assessment or Composite Analysis.”

#### **Performance Assessment Results**

The essential questions that must be answered about PAs by the annual summary are:

1. Do the findings of the annual summary indicate the need for changes to the PA?
2. Do the findings of the annual summary alter the conclusions of the PA?
3. Do the findings of the annual summary indicate that the facility exceeds the limits imposed by the DOE Manual 435.1 performance objectives or the conditions and commitments imposed on the facility in its Disposal Authorization Statement.

Additional items that should be included in the annual summary are:

- Summary of changes affecting the Performance Assessment
- Description of special analyses and reviews
- Recommended changes in facility design, operations, or PA maintenance plan
- Recommended changes in the PA
- Ramifications of changes for other key documents (Monitoring Plan, PA Maintenance Plan, and Closure Plan) for the facility?

A series of factors should be addressed in the annual summary. The factors to be addressed in the annual summary and evaluated by the LFRG in reviewing the annual summary are classified as operations, facility design, closure design, and research and development. (For more detail on the scope and level of detail expected for the topics, see “Maintenance Guide for U.S. Department of Energy Low-Level Waste Disposal Facility Performance Assessments and Composite Analyses,” November 10, 1999)

### Operations:

- Disposal geometry — depth of trench, depth of waste profile, thickness of backfill/cover, trench orientation
- Waste form and packaging — special waste forms, waste containers used
- Waste acceptance criteria — radionuclide limits observed, PA-significant radionuclides reported, waste form and packaging requirements
- Procedures and systems — verification of waste characteristics, inventory within allowable limits

### Facility Design:

- Disposal technology consistent with PA analyses
- Engineered barriers — consistent with barriers analyzed in the PA
- Monitoring provisions — facility results, environmental results
- Structural stability — operational controls to enhance stability, unexpected subsidence

### Closure Design:

- Engineered barriers — closure cover design consistent with PA analysis, threats to cover integrity and viability
- Future land use plans consistent with PA assumptions

### Research and Development

- R&D efforts required by the Disposal Authorization Statement
- R&D efforts pursued for the Site-Wide Radioactive Waste Management Plan (Site Plan)
- on-site R&D efforts other than for Site Plan
- off-site R&D

The changes that could cause divergence from the conditions used for the PA analysis will be one of the following and should be listed and described in the annual summary:

**Discovered Changes:** Does the annual summary identify changes that have been discovered in facility operations, facility design, and site characteristics. (*Changes from what baseline? What is the level of significance for noting a change? Does the annual summary include a statement of the monitoring results that were examined and compared to expected monitoring results? Have the changes been appropriately described and accounted for in the PA analyses?*)

**Proposed Changes:** Does the annual summary identify changes that have been voluntarily made by the facility operators? (*a.k.a. expected future events*)

**Research and Development Changes:** Does the annual summary include descriptions of research and development relevant to the PA analysis models and input data for them that could be used to improve the conclusions of the PA? These changes are a subset of discovered changes. (*What is significant improvement? Have the improved models and data been incorporated in the PA? Do the models change the conclusions of the PA?*)

### **Composite Analysis Results**

The essential questions that must be answered about CAs by the annual summary are:

1. Do the findings of the annual summary indicate the need for changes to the CA?
2. Do the findings of the annual summary alter the conclusions of the CA?
3. Do the findings of the annual summary indicate that the facility exceeds the limits imposed by the conditions and commitments imposed on the facility in its Disposal Authorization Statement or other relevant requirements for protection of health and safety?

Additional items that should be included in the annual summary are:

- Summary of changes affecting the Composite Analysis
- Description of special analyses and reviews
- Recommended changes in facility design, operations, or CA maintenance plan
- Recommended changes in the CA
- Ramifications of changes for other key documents (Monitoring Plan, CA Maintenance Plan, and Closure Plan) for the facility?

A series of factors should be addressed in the annual summary. The factors to be addressed in the annual summary and evaluated by the LFRG in reviewing the annual summary include those addressed for PAs and are classified as operations, facility design, closure design, research and development, and source term. (For more detail on the scope and level of detail expected for the topics, see “Maintenance Guide for U.S. Department of Energy Low-Level Waste Disposal Facility Performance Assessments and Composite Analyses,” November 10, 1999)

#### Operations:

Disposal geometry — depth of trench, depth of waste profile, thickness of backfill/  
cover, trench orientation

Waste form and packaging — special waste forms, waste containers used

Waste acceptance criteria — radionuclide limits observed, PA-significant radionuclides  
reported, waste form and packaging requirements

Procedures and systems — verification of waste characteristics, inventory within allowable  
limits

### Facility Design:

Disposal technology consistent with CA analyses  
Engineered barriers — consistent with barriers analyzed in the CA  
Monitoring provisions — facility results, environmental results  
Structural stability — operational controls to enhance stability, unexpected subsidence

### Closure Design:

Engineered barriers — closure cover design consistent with CA analysis, threats to cover integrity and viability  
Future land use plans consistent with CA assumptions

### Research and Development

R&D efforts required by the Disposal Authorization Statement  
R&D efforts pursued for the Site-Wide Radioactive Waste Management Plan (Site Plan)  
on-site R&D efforts other than for Site Plan  
off-site R&D

### Source Term

Consideration of all significant interacting source terms  
Alteration of existing source terms  
Alteration of uncertainty in characteristics of existing sources

The changes that could cause divergence from the conditions used for the CA analysis will be one of the following and should be listed and described in the annual summary:

**Discovered Changes:** Does the annual summary identify changes that have been discovered in facility operations, facility design, and site characteristics. (*Changes from what baseline? What is the level of significance for noting a change? Does the annual summary include a statement of the monitoring results that were examined and compared to expected monitoring results? Have the changes been appropriately described and accounted for in the CA analyses?*)

**Proposed Changes:** Does the annual summary identify changes that have been voluntarily made by the facility operators? (*a.k.a. expected future events*)

**Research and Development Changes:** Does the annual summary include descriptions of research and development relevant to the PA analysis models and input data for them that could be used to improve the conclusions of the PA? These changes are a subset of discovered changes. (*What is significant improvement? Have the improved models and data been incorporated in the PA? Do the models change the conclusions of the PA?*)