NOT MEASUREMENT SENSITIVE

DOE G 430.1-5
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TRANSITION IMPLEMENTATION GUIDE

[This Guide provides nonmandatory, supplemental information about acceptable methods for implementing requirements. It does not impose additional requirements.]

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FOREWORD

The Department of Energy (DOE)[1] faces an enormous task in the disposition of the nation's excess facilities. Many of these facilities are large and complex and contain potentially hazardous substances. As DOE facilities complete mission operations and are declared excess, they pass into a transition phase during which they are prepared for disposition. The disposition phase of a facility's life cycle usually includes deactivation, decommissioning, and surveillance and maintenance (S&M) activities.

DOE has developed four Guides to provide implementation guidance for requirements specific to the transition and disposition of contaminated, excess facilities found in DOE O 430.1A, *Life Cycle Asset Management*: DOE G 430.1-2, *Implementation Guide for Surveillance and Maintenance During Facility Transition and Disposition*; DOE G 430.1-3, *Deactivation Implementation Guide*; DOE G 430.1-4, *Decommissioning Implementation Guide*; and DOE G 430.1-5, *Transition Implementation Guide*. The goal of the processes described in the Guides is a continuum of hazard mitigation and risk reduction throughout the transition and disposition phases, leading to timely, cost-effective disposition of the facility.

Transition activities occur between the operations[2] and disposition phases in a facility's life cycle. The transition phase begins once a facility has been declared or forecast to be excess to current and future DOE needs. It includes placing the facility in stable and known conditions, identifying hazards, eliminating or mitigating hazards, and transferring programmatic and financial responsibilities from the operating program to the disposition program. Timely completion of transition activities can take advantage of facility operational capabilities before they are lost, eliminating or mitigating hazards in a more efficient, cost-effective manner. In preparation for the disposition phase, it is important that material, systems, and infrastructure stabilization activities be initiated prior to the end of facility operations.

Following operational shutdown and transition, the first disposition activity, usually, is to deactivate the facility. The purpose of the deactivation mission is to place a facility in a safe shutdown condition that is economical to monitor and maintain for an extended period, until the eventual decommissioning of the facility. Deactivation of contaminated, excess facilities should occur as soon as reasonable and for as many facilities as possible. In this way, DOE can apply its resources in a manner that will accomplish the greatest net gains to safety and stability in the shortest time. Deactivation can place the facility in a low-risk state with minimum S&M requirements.

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1 References to DOE and DOE facilities in this Guide include the National Nuclear Security Administration (NNSA).

2 Although facilities may have ceased operations, for the purposes of this guidance they are considered to be "operational" until they are declared or forecast to be excess. This clarification is provided to facilitate understanding the applicability of DOE G 430.1-5, *Transition Implementation Guide*, to excess DOE facilities that are in any condition of standby, shutdown, and/or abandoned.

The final facility disposition activity is typically decommissioning, during which the facility is taken to its ultimate end state through decontamination and/or dismantlement. After decommissioning is complete, the facility or surrounding area may require DOE control for protection of the public and the environment (long-term stewardship) or environmental remediation.

S&M activities are conducted throughout the facility life cycle, including when a facility is not operating and is not expected to operate again. During these last phases of a facility's life cycle, it is important to ensure that S&M is adequate to maintain the facility safety envelope from the final stages of operations through a seamless transition to the final disposition of the facility. S&M is adjusted during the facility life cycle as transition, deactivation, and decommissioning activities are completed. S&M activities include periodic inspections and maintenance of structures, systems, and equipment to ensure, at a minimum, that any contamination is adequately contained and that the potential hazards to workers, the public, and the environment are eliminated or mitigated and controlled.

The technical, managerial, and planning perspectives offered in these Guides can be equally effective in conducting activities other than transition and disposition, such as refurbishment and "cleanup" for reuse. As such, the adaptation of this guidance can result in efficient results if applied to facilities that are not being declared excess.

An important objective throughout the transition and disposition phases is to continue to maintain an integrated and seamless process linking deactivation, decommissioning, and S&M with the previous life-cycle phases. Activities of facility transition and disposition must incorporate integrated safety management at all levels to provide cost-effective protection of workers, the public, and the environment.

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1. INTRODUCTION

1.1 PURPOSE

This Guide was prepared to aid in the development, planning, and implementation of requirements and activities during the transition phase at Department of Energy (DOE)[3] facilities that have been declared or are forecast to become excess to any future mission requirements. It is one of four Guides developed to provide guidance for facility transition and disposition activities:

- DOE G 430.1-2, *Implementation Guide for Surveillance and Maintenance During Facility Transition and Disposition;*
- DOE G 430.1-3, *Deactivation Implementation Guide*; and
- DOE G 430.1-4, *Decommissioning Implementation Guide*.

Requirements for transition are stated in DOE O 430.1A, *Life Cycle Asset Management*, which identifies the minimum requirements for the transfer of a contaminated excess DOE facility. This Guide defines activities or actions that provide a sequenced risk reduction and seamless transition from operations to the selected disposition path. It is part of the DOE Directives System and is consistent with the principles and core functions of DOE P 450.4, *Safety Management System Policy*. Another document that should be consulted to support the planning and conduct of transition and disposition activities is DOE-STD-1120-98, *Integration of Environment, Safety and Health into Facility Disposition Activities.*[4]

1.2 ALTERNATIVE METHODS

This Guide presents acceptable methods for implementing the transition requirements specified in DOE O 430.1A to ensure effective and efficient management of DOE contaminated excess facilities. It does not impose additional requirements. DOE has invested substantial time and effort in developing a transition framework that (1) meets DOE's requirements and expectations, (2) draws on DOE's previous experience, and (3) is responsive to oversight entities. Although alternative methods and approaches to the ones discussed in this Guide may be used, a comparable amount of time and effort may be needed to evaluate the acceptability of those alternatives.

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[3] References to DOE and DOE facilities in this Guide include the National Nuclear Security Administration (NNSA).

[4] Although DOE-STD-1120-98 does not specifically address transition activities such as stabilization during facility operations, the principles and guidance of this Standard provide insights for safely conducting these activities. Application should be considered on a case-by-case basis.

1.3 APPLICABILITY

This Guide may be applied to transition activities and processes at contaminated DOE facilities. "Contaminated" refers to both radioactive contamination and to hazardous-substance contamination. Both nuclear facilities and non-nuclear contaminated facilities are included in the scope of this Guide. Project personnel are expected to apply a graded (i.e., tailored) approach in planning and conducting transition activities at different types of facilities and with different hazard conditions.

1.4 CROSSWALK OF DOE O 430.1A REQUIREMENTS TO DOE G 430.1-3

DOE O 430.1A requirements that apply to activities conducted during the transition phase of a facility's life cycle are included in Table 1, cross-referenced to the sections of this Guide in which they are addressed. Though the table quotes the requirements as they appear in DOE O 430.1A, this Guide addresses only those requirements that apply to transition activities. Parallel tables in the other three DOE O 430.1A Guides provide crosswalks between requirements and guidance for S&M, deactivation, and decommissioning.

Table 1. Mapping of Requirements—Transition.

Requirement	Where Addressed in Guide
DOE O 430.1A, paragraph 6a: DOE elements, including NNSA, shall use a value-added, quality driven, graded approach to life cycle asset management.	Section 2.3, Graded Approach
DOE O 430.1A, paragraph 6f(1): The identification, inventory, and periodic assessment of the condition of physical assets in the maintenance program.	Section 4.4, Facility Characterization
DOE O 430.1A, paragraph 6f(8): A method to ensure that prior to the completion of mission activities (e.g., production, research, etc.) actions are implemented to place the facility, systems, and materials in stable and known conditions, and to ensure hazards are identified and known, pending transfer or disposition. For facilities that have already completed mission activities and are awaiting transfer or disposition, ensure that actions are taken to eliminate or mitigate hazards and provide adequate protection to workers, the public, and the environment. In both cases, actions shall be based on an assessment of the remaining hazards at the time when mission activities are completed, or prior to transfer or disposition for facilities that have already completed mission activities.	Sections 4.5, Identify and Perform Early Stabilization Actions; and 4.8, Other Stabilization Actions

Table 1. Mapping of Requirements—Transition (continued).

Requirement	Where Addressed in Guide
DOE O 430.1A, paragraph 6f(8)(a): Identifying and characterizing hazardous and radioactive materials and wastes remaining in systems/facilities and providing for their stabilization (if necessary), adequate storage until they are removed from the facility, and (unless agreed to prior to facility transfer) removal.	Section 4.4, Facility Characterization
DOE O 430.1A, paragraph 6f(8)(b): Assessment and adjustment (if necessary) of the facility authorization basis to ensure it continues to reflect conditions in the facility pending disposition.	Section 4.7, Assess and Adjust Authorization Basis
DOE O 430.1A, paragraph 6f(8)(c): Conducting S&M activities required to maintain the facility and remaining hazardous and radioactive materials, wastes, and contamination in a stable and known condition pending facility disposition.	Sections 4.2, Excess Declaration and Transfer Initiation; 4.4, and Facility Characterization
DOE O 430.1A, paragraph 6f(8)(d): Identifying and allocating resources needed to maintain stable and known conditions pending facility disposition.	Sections 4.3, Establish Integrated Transition Team; and 4.4, Facility Characterization
DOE O 430.1A, paragraph 6g(1): Application, as appropriate, of guidelines contained or referenced in DOE-STD-1120-98, *Integration of Environment, Safety and Health into Facility Disposition Activities.*	Sections 1.1 Purpose; and 2.2, Integrated Safety Management
DOE O 430.1A, paragraph 6g(3): A method whereby land and facilities (candidates for transfer) are either transferred to other program offices, or are determined excess, available for disposal, and disposal procedures are initiated.	Section 4.2, Excess Declaration and Transfer Initiation
DOE O 430.1A, paragraph 6g(4): To match the Departmental budget cycle, the normal date of transfer for a facility shall be the first October 1 after the two-year anniversary of the date the receiving organization is notified, unless the parties reach another agreement. As land and facilities are transferred from one program office to another, the appropriate funding and budget target are transferred with it.	Section 4.2, Excess Declaration and Transfer Initiation
DOE O 430.1A, paragraph 6g(5)(a): Completion of a Pre-Transfer Review, with participation by the Office of Environment, Safety and Health when requested or directed, for transfer of facilities for disposition whose scope shall be commensurate with the existing hazards.	Sections 4.10, Pre-Transfer Review; and 4.11, Facility Transfer

Table 1. Mapping of Requirements—Transition (continued).

DOE O 430.1A, paragraph 6g(5)(b): Development of a signed agreement by relevant secretarial officers to document scope, conditions, state of readiness, and associated funding, when transferring facilities between program offices. This includes a budget resources plan to manage the facility until funding is provided to the receiving program through the normal budgeting process.	Section 4.4.1, Memorandum Of Agreement
DOE O 430.1A, paragraph 6i: DOE corporate physical assets databases shall be maintained as complete, current inventories of the DOE physical assets. For real property, the corporate database is Facilities Information Management System.	Sections 3.1, Transition Objectives and Goals; and 4.2, Excess Declaration and Transfer Initiation
DOE O 430.1A, paragraph 6j: In the acquisition, operation, maintenance, leasing, and disposition of physical assets, DOE elements, including NNSA, shall ensure that all applicable Federal, State, and local laws, regulations, and negotiated agreements are followed, and that safeguards and security as well as integrated safety management requirements and policies are followed.	Sections 2, Transition Activities–General Guidance; and 4.8.1, End-Point Development

2. TRANSITION ACTIVITIES—GENERAL GUIDANCE

A DOE facility or any part thereof is considered to be in the operational phase of its life cycle until it is declared or forecast to be excess. As such, all DOE Orders, regulations, etc., that apply to the facility during the operational phase of its life cycle are still in force even though it is considered to be in a condition of standby, shutdown, abandoned, or legacy. The responsible operating programs should understand that these requirements (adjusted to the current "operating" conditions) are applicable and should be followed.

Preparation for the successful disposition (either deactivation or decommissioning) of a contaminated, excess facility can be enhanced greatly by completing certain activities during the transition phase. Paragraph 6f(8) of DOE O 430.1A requires that stabilization activities[5] for facilities, systems, and materials be initiated prior to the end of facility operations, pending transfer or disposition. These stabilization activities performed during the transition phase that support the protection of workers, the public, and the environment could include, for example:

- draining nonessential systems;
- removing any remaining hazardous chemicals, spent nuclear fuel, and other radioactive materials and wastes;
- Resource Conservation and Recovery Act (RCRA) closures and corrective actions; and
- other related actions.

To establish safer conditions before proceeding to disposition, it may be necessary to conduct a stabilization campaign at the end of operations for facilities that contain hazardous materials, either in inventory or as holdup in areas such as equipment, pipelines, and filters. For example, it may be appropriate to conduct a process/equipment clean-out run to either process quantities of radioactive or chemically reactive liquids, clear process systems, or remove nuclear fuel for the purpose of clearing a storage area.

A systems engineering approach should be used throughout transition and disposition activities to ensure that essential elements and activities are integrated at appropriate levels. These elements include safety management as defined in DOE P 450.4, *Safety Management System Policy,* and the

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[5] Completion of these activities is intended to achieve a state in which a facility and its contents are in a condition that eliminates or mitigates hazards and ensures adequate protection to workers, the public, and the environment. Achieving and maintaining stability may require actions to prevent the alteration in the chemical makeup, physical state, and/or geometry (leading to increased reactivity) of a hazardous substance or radioactive material. Achieving and maintaining stability also involves actions taken with regard to physical structures (e.g., roofs), systems (e.g., ventilation), and components.

application of a graded approach. DOE is committed to conducting all work efficiently, protecting workers, the public, and the environment, and maintaining a safe shutdown configuration.

Additional requirements for planning and conducting transition activities may be contained in other documents. It is not the intent of this Guide to offer guidance for these requirements. During the transition and disposition of DOE physical assets, the project manager and others involved with the development and/or execution of the appropriate project should, in accordance with DOE O 430.1A, be well versed with other Federal, State, and local laws and regulations as well as those requirements that address integrated safety management, conduct of operations, conduct of maintenance, radiological protection, emergency management, and other requirements integral to planning, developing, and conducting the work.

Walk-downs of the facilities (described in more detail in Section 4.4) are conducted by a multidiscipline team shortly after a facility is identified for transfer to the disposition program. Facility, system, and hazardous material conditions are documented and agreed upon. These conditions form the bases for the stabilization actions that must be completed by the operating program prior to facility transfer.

As stabilization actions are completed throughout the transition phase, the facility condition information is updated and should be included as part of the pre-transfer review documentation, which verifies completion of all transition activities. When stabilization activities are complete, it may be necessary to establish a new facility baseline, including a revised authorization basis, to more accurately reflect the facility condition and S&M requirements at the time of transfer. S&M activities are adjusted and performed to monitor and document the presence, status, or condition of structures, systems, components, and hazards associated with the facility as transition activities are completed. Continuing S&M ensures, at a minimum, that any contamination is adequately contained and that potential hazards to workers, the public, and the environment are minimized. Further guidance on S&M activities is available in DOE G 430.1-2.

2.1 PROJECT MANAGEMENT PRINCIPLES

Project management envelopes the entire transition and disposition process including planning, design, execution, and closure. A clear understanding of these phases enables greater control of DOE resources in achieving the transition and disposition goals. Two principles are key to achieving this understanding: (1) use of a project management system and (2) detailed engineering planning.

2.1.1 Use of Project Management System

Using a project management system assists in the successful completion of each phase of a transition project, from facility assessment, through technical engineering, to project execution. Project planning establishes the project's requirements and describes how the project will be accomplished.

The top-level objectives for planning transition activities include the following:

- protect workers, the public, and the environment;
- eliminate or mitigate hazards within the facility;
- facilitate S&M during the transition phase and into disposition;
- facilitate deactivation and/or ultimate decommissioning work;
- comply with regulations and requirements, including administrative requirements; and
- follow through on commitments to stakeholders.

2.1.2 Detailed Engineering Planning

DOE O 430.1A requires that an "end-point" process for detailed engineering planning and plan documentation be used to identify and execute the preferred alternative for deactivation and/or decommissioning. An end-point process is also important for planning and executing stabilization activities during the transition phase. Just as design specifications and drawings are essential to systematically detail a construction project, specifying "transition end-points" is the comparable discipline to planning, implementing, measuring, and knowing when transition activities are complete. The process for identifying transition (i.e., stabilization) end-points is discussed in more detail in Section 4.8.

2.2 INTEGRATED SAFETY MANAGEMENT

Sufficient planning should be done to systematically integrate a safety management system into management and work practices at all levels. DOE's safety management system policy and guidance are identified in DOE P 450.4, *Safety Management System Policy*, and DOE G 450.4-1A, *Integrated Safety Management System Guide,* for use with safety management system Policies (DOE P 450.4, DOE P 450.5, AND DOE P 450.6); DOE M 411.1-1A, *Safety Management Functions, Responsibilities, and Authorities Manual*; and the Department of Energy Acquisition Regulation. The major mechanism for integrating safety and health into transition efforts is the work planning process, during which safety documentation from the facility's operational phase is reviewed and evaluated. Because many stabilization actions are operations or "operations-like" activities, they are most likely already covered in existing operations safety documentation. Transition activities are identified and evaluated against existing controls, and modifications to controls are identified as required by the new activities that were not previously performed during operations.

Often, the safety documentation of an older facility, including worker safety and health aspects, fall short of today's standards and requirements. Revisions, comparisons, crosswalks, and other evaluation techniques can be used to determine which transition actions may be covered in existing documentation and which actions require supplemental coverage. Such evaluation efforts, especially if performed by those who know the facility well (i.e., integrated transition team), are more supportive of safety policy goals, are more cost-effective and time-efficient than the preparation of new safety documentation.

Worker involvement in all levels of safety/hazards analysis during planning is key to implementing all elements of the transition phase. DOE-STD-1120-98 provides guidance on integrating health and safety into facility disposition activities and can be useful for conducting transition activities.

2.3 GRADED APPROACH

DOE O 430.1A requires the use of a "graded approach" for the application of requirements to a particular project, activity, or facility. The "tailoring approach" defined in DOE G 450.3-3, *Tailoring for Integrated Safety Management Applications,* is an acceptable method of complying with this requirement. DOE G 450.3-3 demonstrates that tailoring is integral to the integrated safety management system. Tailoring is appropriate for all steps in facility transition.
Tailoring allows project managers to choose from among a variety of engineering and administrative controls that provide adequate protection for workers, the public, and the environment during the performance of work. Tailoring of higher-level contractual and project agreements enables contractors to establish general standards for work. Individual tasks are tailored so that each task has controls that fit the specific work and hazards associated with it and that are consistent with higher-level performance expectations.

Tailoring permits consideration of differences between facilities and specific conditions within facilities, and provides a means to determine the extent to which actions are appropriate for the transfer of a particular facility (or portions thereof). The depth of detail required and the magnitude of resources expended for a particular transition element is commensurate with the relative importance of that element to safety, environmental compliance, safeguards, and security; the magnitude of any hazard identified; programmatic importance; financial impact; and/or other facility-specific requirements. Planning should consider the possibility of future changes to priorities and identify the conditions (end-points) where a facility may be safely and efficiently transferred to the disposition program.

Tailoring is cost-effective because it does not demand a high level of analysis and/or planning for simple jobs already covered in established procedures. Worker involvement, as stated earlier, has also proven to be cost-effective because employees often have spent many years performing tasks during operations, and they may have a good understanding of the safety and performance requirements of deactivation activities.

Tailoring offers a means to grade activities and processes to different hazards associated with individual facilities. Tailoring is used to scale expectations and acceptable performance to the needs of the site, activity, facility, or work to be performed. When applied to the transition objectives listed in Section 3.1, tailoring promotes a work management system that is safe, efficient, and cost-effective.

3. TRANSITION PROGRAM

3.1 TRANSITION OBJECTIVES AND GOALS

Transition activities occur between operations[6] and disposition in a facility's life cycle. The transition phase begins once a facility has been declared or forecast to be excess to current and future DOE needs.[7] It includes placing the facility in stable and known conditions, identifying hazards, eliminating or mitigating hazards, and transferring programmatic and financial responsibilities from the operating program to the disposition program. Timely completion of transition activities can take advantage of facility operational capabilities before they are lost, eliminating or mitigating hazards in a more efficient, cost-effective manner. The transfer process from the operating program to the disposition program can take a considerable time, generally 2 years or more to ensure that required activities are appropriately identified, funding is available or obtained, and that stabilization is accomplished in a safe and efficient manner.

Key objectives and goals during facility transition include the following:

- an expeditious start of characterization (if required) and stabilization activities to eliminate or mitigate hazards, beginning with those that clearly should be done regardless of the subsequent mode of disposition;

- completion of characterization (if required) and stabilization activities (as defined in Sections 4.5 and 4.8), with priority given to the specified end-points for mitigation and removal of hazardous and radioactive materials and wastes;

- maximum use and effectiveness of current operations knowledge, personnel, and operating systems/programs to reduce the facility hazards, with emphasis placed on processes and systems for which the skills and knowledge required are unique;

- effective partnering among all involved parties (in particular, among the operating and disposition programs, field elements, and/or contractors); and

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[6] Although facilities may have ceased operations, for the purposes of this guidance they are considered to be operational until they are declared or forecast to be excess. This clarification is provided to facilitate understanding the applicability of DOE G 430.1-5, *Transition Implementation Guide*, to excess DOE facilities that are in any condition of standby, shutdown, and/or abandoned.

[7] On a case-by-case basis, there may be compelling programmatic reasons why a formal declaration of excess is not in DOE's best interest, and transition activities could begin if the facility is forecast to be excess, as identified in the Facilities Information Management System. Significant commitments should not be undertaken, however, when the status of the facility is not known.

- the seamless and integrated transfer of the facility from the operations phase to the disposition phase.

The time and effort required to achieve these goals at a facility will vary greatly based on the facility's current conditions, configuration, and status. Stabilization actions to eliminate or mitigate hazards (e.g., clean out runs of process systems) should receive the highest priority. Early stabilization actions are discussed in more detail in Section 4.5. For other activities, the stabilization end-point development process identified in Section 4.8 will ensure that activities are appropriately identified and planned for completion. Typical examples of early stabilization actions and stabilization end-point criteria include the following:

- As soon as large quantities of reactive chemicals (e.g., acid, etc.) in storage are no longer needed, they are either sold or transferred to another DOE user in their existing form or in accordance with other conditional agreements or stabilized (e.g., neutralized) and disposed of as waste.

- New nuclear fuel is sold or shipped to a DOE facility for recycling or dismantling.

- Unstable materials and/or wastes are stabilized, treated, and/or removed.

- The potential for fire/explosion from violent chemical reactions or nuclear criticality is reduced or eliminated.

- Tanks are emptied if they contain unstable or hazardous materials (or contain materials known to become unstable over time).

- A final process run is completed for all systems, lines, and other equipment that has potential for significant material holdup.

- Changes in configuration and status of systems and structures as a result of transition activities are reviewed against the safety basis. Revised controls are provided as appropriate to changed conditions.

- Barriers are installed and/or verified sufficient to prevent the spread of contamination.

- Appropriate safeguards and security are provided.

3.2 TRANSITION CASES

DOE facilities can broadly be grouped into three general categories (or cases):

- Case 1 facilities are currently operating in fulfillment of mission objectives (research, weapons production, etc.).

- Case 2 facilities have ceased mission-related operations. The status of Case 2 facilities can range from facilities with some operational systems (e.g., ventilation) to those that are essentially locked up and/or abandoned with no operational activities.

- Case 3 facilities have already been accepted into the Office of Environmental Management (EM) program. It should be noted that a contaminated excess EM facility that is in its final phase of operations is no different than those managed by other operating programs and should also utilize appropriate sections of this Guide regarding integrated safety management, graded approach, characterization, stabilization, and other topics associated with establishing a stable and known condition of the facility, its systems and materials prior to entering into the disposition phase of its life cycle.

A thorough understanding of Case 1 and 2 facilities is important due to the difference in facility condition, configuration, and other variables. Implementation of transition activities is bound by different constraints and will require different allocation of approaches to ensure success.

3.2.1 Case 1: Facilities Currently Operating

For Case 1 facilities (i.e., those that are still operational), the goals identified in Section 3.1 can be accomplished straightforwardly during the transition phase. Through coordination with the affected programs and field elements, the facility is projected to become excess and begin its transition phase while a final operating campaign is still underway. The probable disposition path toward deactivation or decommissioning is identified, and transition activities are completed.

Transition activities can take full advantage of the final operating campaign and the fact that facility resources (i.e., personnel, procedures, systems, etc.) are still available. It is expected, for example, that clean-out runs of process systems and equipment can readily be achieved under the existing authorization basis and approved procedures to process quantities of radioactive and/or chemically reactive liquids, clear process systems, remove nuclear fuel, etc. If the evaluation of the existing authorization basis or procedures are found not to be adequate, appropriate modifications should be made to these documents in order to complete the work. Appropriate analyses [e.g., Unreviewed Safety Question (USQ) reviews] should be initiated to ensure coverage of the planned activities. This leveraging of final operations to accomplish transition is advantageous and cost-effective. Once operational capability no longer exists without substantial requalification and/or refurbishment (i.e., Case 2 below), it can be difficult and expensive to perform the necessary transition and subsequent disposition activities.

With early planning, the goal of a seamless, integrated transition from the operations to disposition can more readily be accomplished. Depending on the projected time for completion of operations and

stabilization end-point activities, transfer can be timed to meet the 2-year budget planning cycle. Transfer to the disposition program should be planned for the beginning of the fiscal year, 2 years after notification.

3.2.2 Case 2: Facilities Not Currently Operating

A non-operational or Case 2 facility is one that is (1) in any condition of standby, (2) shutdown, and/or (3) abandoned (i.e., it is considered "legacy"). A Case 2 facility ceases operation before there is an opportunity to take full advantage of operational capability and resources. As a result, transition activities to meet the above-stated objectives have generally not been accomplished during the final operating campaign. Two undesirable results follow. First, the transition/ disposition organization, at substantial cost, may have to rebuild some or all of the operational capabilities required to implement stabilization actions and other transition activities to reduce hazards. Second, the lack of stabilization actions during the transition phase may result in a period of high S&M costs because of the remaining facility hazards. The earlier the transition can occur, the more S&M costs can be reduced.

An abandoned or "legacy" facility is one that ceased operation long ago and for which there is little current operating knowledge base. Transition may require a significant effort to identify and evaluate existing conditions before determining appropriate transition activities and taking the requisite actions. A graded characterization of the facility, its systems and materials will often be required in order to identify facility conditions and issues that need to be addressed prior to transferring responsibility for the facility from the operating programs to the disposition program. This characterization which includes a facility walk-down and associated activities, will also provide the disposition program with insight regarding the facility's risks and liabilities, which may influence the management of eventual downstream life-cycle activities.

3.3 MAJOR TRANSITION STEPS

Figure 1 identifies the major transition steps[8] presented in this Guide. These steps are designed to meet the requirements of DOE O 430.1A and the concomitant goal of hazard elimination or mitigation, and to advance disposition in a cost-effective manner that is seamless and integrated with disposition planning. As shown in Figure 1, transition activities and disposition planning activities begin with the declaration or forecast of the facility as excess. S&M will continue during the transition phase, with modification appropriate to changing hazards and risk. The steps are discussed in detail in Section 4 of this Guide.

Variation in facility situations leads to numerous possibilities among the characteristics described for Cases 1 and 2. For example, stabilization actions (Step 5) are more likely to occur earlier for Case 1 facilities than they are for Case 2 facilities, which will undoubtedly require a heavier initial emphasis on

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[8] Although these steps are presented as sequential events, in practice they should be viewed as iterative and interactive, and as such employed in a more parallel fashion.

characterization of facility conditions (Step 3). Early planning as part of transition is necessary to sort out these possibilities and define sequence and extent of stabilization actions for each facility.

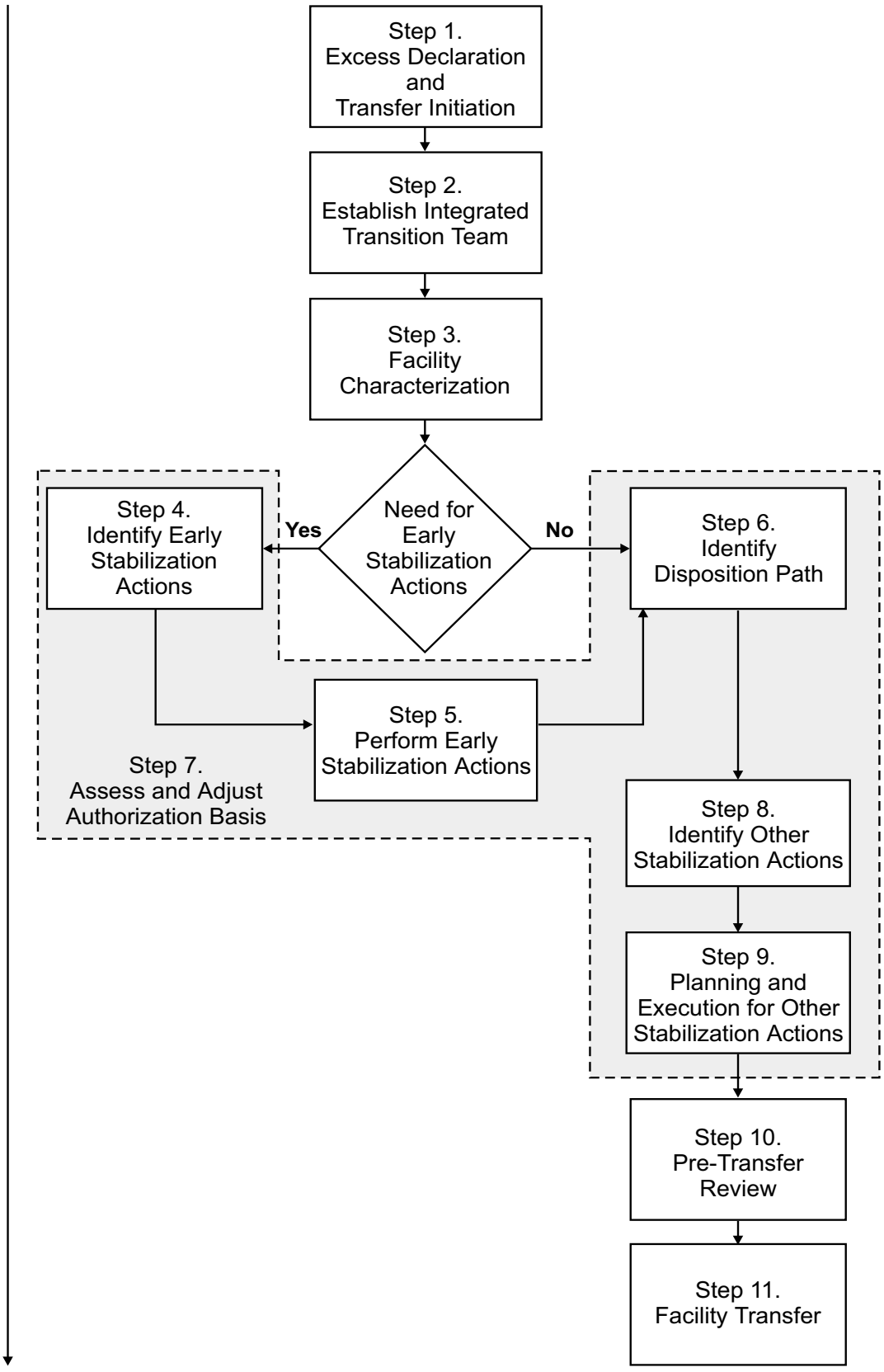

Figure 1 - Facility Transition

4. TRANSITION ACTIVITIES AND PROCESSES

This section focuses on the interactive and iterative sequence of specific "steps" aimed at supporting and providing a framework for facility transition. As previously noted, the degree of effort for each step depends on the characteristics of each facility (i.e., Case 1, Case 2 variations). A primary goal for the transition phase is to focus on stabilization actions that (1) cost-effectively reduce hazards and risk and (2) support a seamless process from the end of facility operations through disposition.

4.1 FOCUS OF TRANSITION ACTIVITIES

Experience has shown that, in general, activities associated with the physical aspects of a facility to prepare it for transfer are of the following type:

- Continuing operations,[9] surveillance, and maintenance required by the safety authorization basis and technical specifications.

- Conducting and documenting systematic shutdown of process systems and equipment to establish stable and known conditions.

- Stabilizing hazardous conditions and materials and removing hazardous materials and wastes.

- Assembling current characterization information and conducting additional characterization (generally limited to non-intrusive activities) to document the facility's conditions.

Table 2 presents a set of subject areas, with criteria and example implementation statements that have been used at facilities undergoing transition (i.e., stabilization) to deactivation and/or decommissioning. These have also been used as criteria for establishing stabilization end-points related to the physical condition of a facility. The conduct of these types of stabilization activities is particularly important when operational knowledge and training qualifications of the facility's current staff are needed, either by formal requirement or to achieve efficiency by not having to train new staff.

In addition to physical activities, the need to conduct administrative and management activities is addressed later in this section.

For each facility initiating transition, the specific criteria for determining the activities to be conducted during the transition phase should be established. The criteria and end-points should be based, to the

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[9] Operations as used here does not refer to "production" but rather to operation of required systems (e.g., HVAC, fire systems, etc.)

extent practicable, on previous experience and lessons learned from activities conducted at other facilities preparing for transfer and/or stabilization.

Examples of actions that should or should not be performed are depicted in Table 2. Although generally applicable, they do not necessarily pertain to all facilities. The overall intent is to take all necessary actions to ensure the achievement of stable and known conditions and therefore safety of the worker, the public, and the environment. In addition, there may be other considerations, for example, if a facility is to be transferred to private ownership. Regardless, the lead statements in each of the subject areas in Table 2 can provide a starting point for transition planning.

Table 2 – Stabilization Subject Areas with Stabilization Criteria and Example Implementation Statements

1. ***Facility Structure/Personnel Safety*** *- Structural integrity is such that (1) inspection personnel are safe, and (2) engineered protective barriers and containment systems (e.g., but not limited to, safety class systems) are sufficient to prevent the release of radiological or hazardous chemical substances.*

- Ensure that structures and roofs are structurally sound preventing any immediate threats to human health and safety and requiring minimal maintenance for as much as 5 years after transfer.
- Ensure that confinement structures are sound and in good repair to contain radioactive materials and preclude rain or snow melt water from intrusion.

2. ***Process Systems & Equipment*** *- Process systems and equipment are systematically shut down, isolated, sealed off, or removed (if there is a compelling reason to do so) to establish a stable and known condition.*

- Complete activities dependent on plant-specific process, operating, and facilities engineering expertise.
- Empty process equipment and piping of process chemicals.
  - Conduct final clean out process runs.
  - Drain all tanks, vessels, and piping containing radiological and/or hazardous chemical fluids to the degree practicable. Record the amount of residual fluid.
- Establish and archive records required to reactivate systems/equipment (if necessary) during the disposition phase, including previous characterization efforts.

Action to be deferred to the disposition phase:

- Removal, as a general rule, of process and utility vessels and utility tanks, and piping systems.

Table 2 – Stabilization Subject Areas with Stabilization Criteria and Example Implementation Statements (continued)

- Seal or otherwise physically isolate flow routes to disposal locations.
- Flush the internal surfaces of all process and chemical vessels to remove water-soluble chemical and/or radioactive residue.

3. Service and Utility Systems and Equipment *- Only systems required to support disposition, S&M, and maintain the stable condition (such as lighting, exhaust ventilation, sump pumps, etc.) are operational. Equipment that has been judged to be valuable for future decommissioning is left available for future use. Other utility systems are isolated or sealed off for safety of future personnel, or removed (if there is a compelling reason to do so).*

- Systematically isolate (i.e., lockout/tagout) utility systems (formerly required to support process equipment or systems) that will no longer be operated or required for disposition or S&M.
- Establish and archive records required to reactivate systems/equipment to be used for dispositioning activities including previous characterization efforts.

Action to be deferred to the disposition phase:

- Removal of selected support or utility systems (e.g., cranes, compressed air, welding receptacles) that will be used during the disposition phase. Systems should be in operating condition.
- Deactivate, consolidate or cascade the facility HVAC systems.
- Removal (in total or in part) of electrical circuits and other utility systems that may be required for disposition or S&M activities.
- Drain, isolate, and abandon building steam and condensate systems.

4. Radiation Protection *- Barriers, etc., are established in accordance with standard procedure per the site/DOE RadCon manual. Radioactive contamination remaining in the facility is contained in limited areas or has been stabilized against release.*

- List and specify the stabilized status for radiation and radioactive contamination of each facility space, room, and area.
- Any structure(s) and existing radiation monitoring systems as required, are left and maintained in place and are in a physical condition adequate to contain and monitor potential release of any radioactive contamination, in accordance with DOE 5400.1, *General Environmental Protection Program.*
- The most current radiation contamination, hazardous, and toxic materials survey of the facility and surrounding areas are provided.

Table 2 – Stabilization Subject Areas with Stabilization Criteria and Example Implementation Statements (continued)

5. Radioactive Materials - *Radioactive materials are removed.*

- Quantities of radioactive materials (in both solid and liquid form) in the facility have been reduced below threshold levels sufficient to support a stable and known condition.
- Dispose of radioactive sources (i.e., items catalogued as sources for purposes of calibration, etc.).

6. Hazardous Materials and Wastes - *Hazardous materials and chemicals are removed in accordance with environmental regulations. The only liquids remaining are minor quantities that cannot be readily removed with installed equipment. Where feasible, RCRA closure has been achieved for listed materials. Hazardous materials remaining in the facility are contained in limited areas or have been stabilized against release. Documentation of the amount and location of remaining hazardous material is complete.*

- Collect and dispose of all hazardous materials in accordance with established procedures and applicable requirements.
- Inventory by location, type and quantity and document rationale for not removing any hazardous/radioactive materials.
- Remove, to the extent possible, all loose combustible materials. (Limit to loose materials or highly flammable materials. For example, do not remove electric cable only because its insulation is potentially burnable.)
- Remove hazardous laboratory chemicals, reagents and other chemical inventories stored at the facility.
- Fix in place or remove loose and friable asbestos.

7. Housekeeping and Miscellaneous Materials - *Classified and valuable materials are removed.*

- Remove all classified documents, materials, tools, etc., and downgrade security requirements.
- Remove trash and other materials that can readily be cleaned up from in and around the facility.
- Remove non-contaminated spare parts, tools, and supplies.
- Remove and disposition non-radioactive valuable excess materials (e.g., precious metals, such as gold, silver, platinum and other valuable pure materials).

Actions that may be deferred to the disposition phase:

- Removal of non-contaminated office furniture and other loose equipment.
- Removal of non contaminated capital equipment for reuse.

4.2 STEP 1: EXCESS DECLARATION AND TRANSFER INITIATION

DOE facilities (or parts thereof) are considered to be in the operational phase of their life cycle until declared or forecast to be excess. DOE Orders, regulations, etc., that applied to the facility during the operational phase are still in force even though the facility may be considered to be in a condition of standby, shutdown, abandoned, or legacy. R
these requirements (adjusted to the current "operating" conditions) are applicable and should not be ignored. Situations where portions of a facility are no longer in use and therefore considered to be "inactive," "shutdown," "abandoned," or some other similar term does not relieve the operating program of its responsibility to meet requirements and maintain the facility adequately to protect the worker, the public, and the environment.

Paragraph 6g(3) of DOE O 430.1A drives the need for a method to declare assets excess. DOE lead program secretarial officers (LPSOs) or program secretarial officers (PSOs) that currently have responsibility for operating programs at the DOE sites are the Offices of Environmental Management (EM), Defense Programs (DP), Nuclear Energy (NE), and Science (SC). EM-1, DP-1, NE-1, and SC-1 have programmatic and fiscal accountability for facilities under their "ownership" and, as such, have authority to define and approve the excess status of their facilities. Although the process for identifying a facility as excess can be initiated at any point in the program office, field element, or contractor organizational structure, the ultimate decision and responsibility for communicating facility status as excess to program needs rests with the LPSO/PSO. The excess status of a facility should be identified in DOE's Facility Information Management System (FIMS).

Many excess facilities within the DOE complex are neither radiologically nor hazardous chemically contaminated. While these facilities do not generally meet the transfer requirements established by DOE O 430.1A and DOE/EM-0225, *Resourceful Reuse*, based on the graded approach, the "process" described in this Guide (if not the full extent) is applicable. Cleanup should, generally, be a matter of using "normal" industrial cleanup standards and processes. If demolition of the facility is desired, it should be a straightforward industrial task. Examples of these facilities are fuel oil tanks and related equipment; office buildings; guard posts; warehouses; or sewage treatment facilities. Regulatory standards and Environmental Protection Agency guidance exist for such cases.

Decisions to designate facilities as excess are driven primarily by programmatic mission need and budget considerations and secondarily by the advanced age and deteriorating condition of many DOE facilities. Although excess facilities may be reused by other DOE program offices, other Federal and State government agencies, and to a lesser extent private concerns, the predominant direction for DOE excess facilities is stabilization, deactivation, and decommissioning. The prioritization of the eventual disposition of these facilities is managed at each site in accordance with managing risks within the facilities and the available funding for deactivation and/or decommissioning activities. If the disposition program is determined to be EM, the overall strategies for prioritization of the contaminated excess facilities is included in DOE/EM-0362, *Accelerating Cleanup: Paths to Closure* (also known as *Paths to Closure*), available at http://www.em.doe.gov/closure/final/index.html.

DOE/EM-0285 (available at http://www.em.doe.gov/future/) provides guidance for determining facility status for programmatic needs and determining the status of facilities with respect to broader DOE

needs (i.e., whether it is needed by other program offices) and/or if it is subject to transfer through established General Services Administration processes identified in 41 CFR 101, Federal Property Management Regulations. Guidance focuses on acceptable methods to declare facilities as excess to DOE; that is, establishing candidacy for transfer to the DOE disposition program and communicating requests for initiating transition. As discussed in DOE/EM-0285, the primary factor in establishing candidacy for transfer to the disposition program is the presence of contamination or remaining radiological and/or hazardous chemical materials and the need to perform deactivation and decommissioning. A secondary consideration involves establishing the facility as a "whole" unit (i.e., not part of a larger facility that is not excess) that is structurally independent, with separate utilities and support systems. Additional guidance on excess determination is provided in DOE/EH-413/9712, *Cross-Cut Guidance on Environmental Requirements for DOE Real Property Transfers* (available at http://tis.eh.doe.gov/oepa/guidance/rcra.htm).

Once a contaminated facility is determined to be excess to DOE mission needs and a candidate for transfer, LPOs/PSOs provide transfer notification to the disposition program. Consistent with DOE O 430.1A requirements, notification should be provided at least 2 years prior to October 1 of the year of desired transfer. To provide adequate financial and resource support for stabilization and characterization actions, and to evaluate and identify budget and target elements, it will generally be necessary to begin planning and gathering information 6 to 12 months or more before the notification date.

DOE funding and budget cycles must be considered when planning the transfer and transition activities of an excess facility. Figures 2 and 3 provide examples of how long the transfer of a facility to the disposition program could take. Completing transition and transfer activities in less time is better because it results in a smaller expenditure of public funds.

Figure 2 provides an example of an overall time line for a circumstance where a contaminated excess facility requires substantial stabilization activities leading to its transfer; and for which additional donor program funds are needed to stabilize and to prepare the facility for transfer. The overall duration of 3 to 3-1/2 years is dictated by (1) planning and engineering to support budget estimates, (2) DOE, Executive Branch, and Congressional 2-year budget cycles for the donor program, and (3) time required to conduct the activities.

Figure 3 depicts an overall timberline for a situation in which donor program funds are already available (or could be made available from other internal budgets) to stabilize and to prepare the

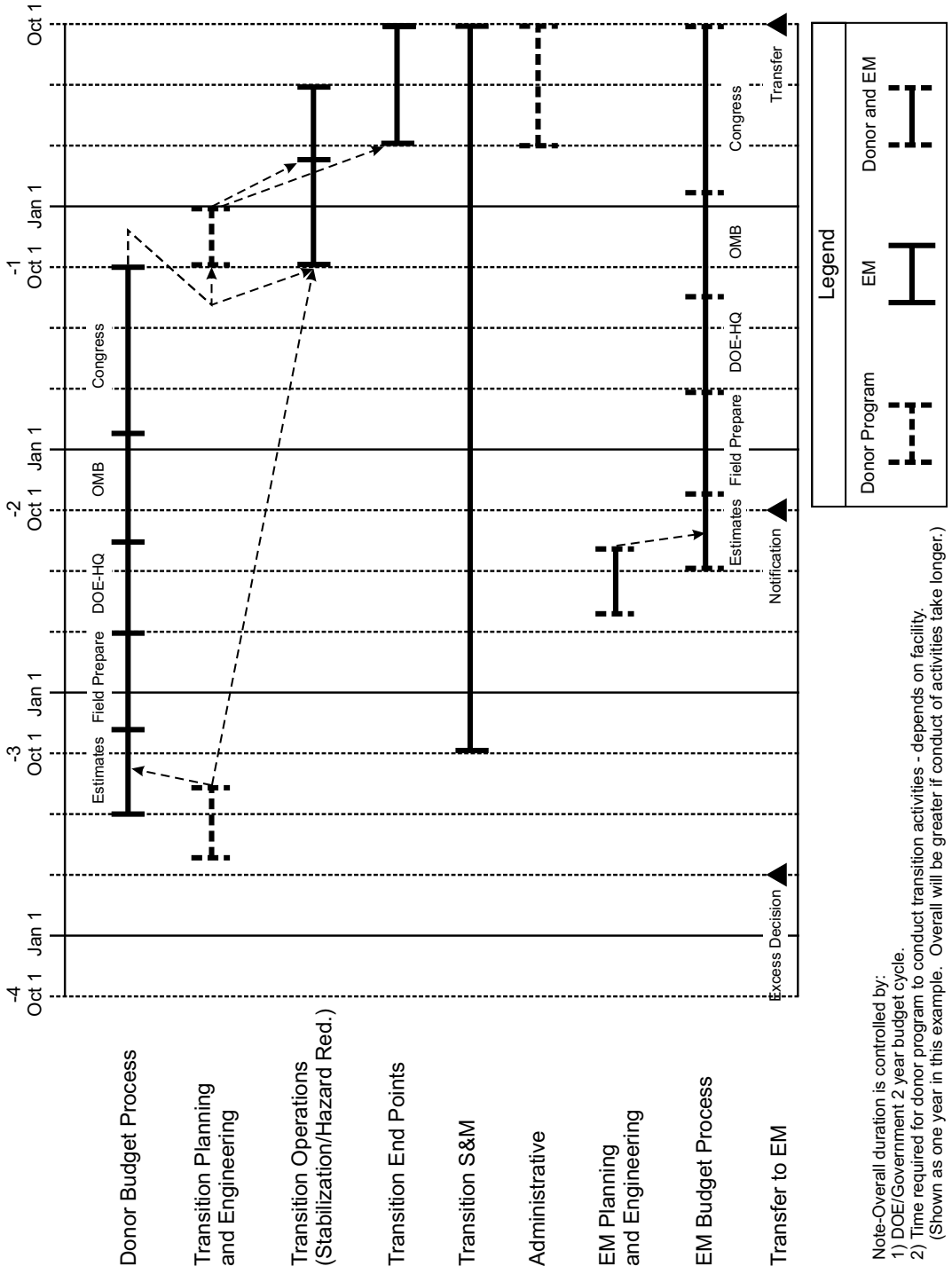
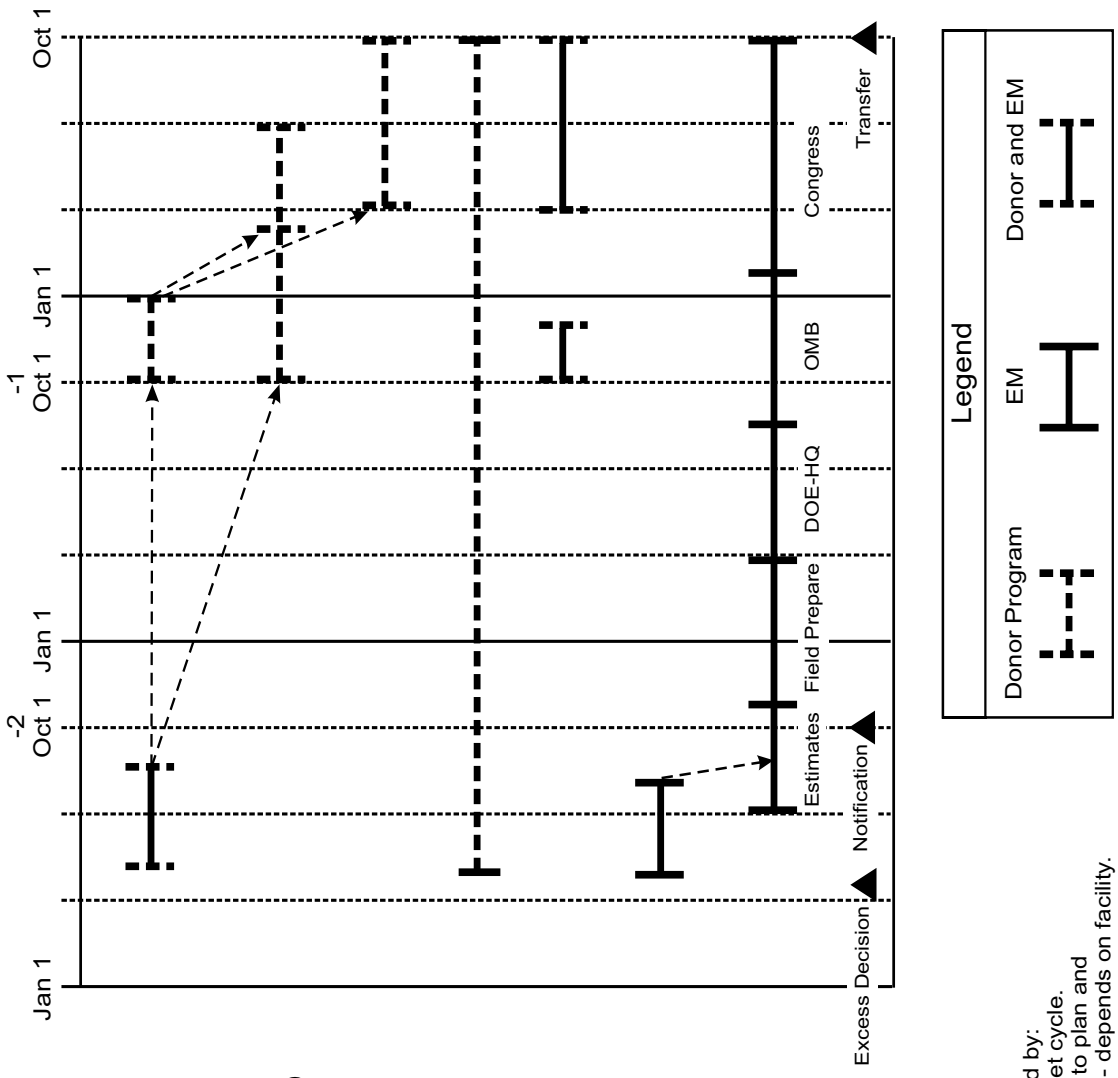


Figure 2 – Time Line Overview Example – Budget Needed for Transition

Note-Overall duration is controlled by:
1) DOE/Government 2 year budget cycle.
2) Time required for donor program to conduct transition activities - depends on facility.
(Shown as one year in this example. Overall will be greater if conduct of activities take longer.)



Note-Overall duration is controlled by:
1) DOE/Government 2 year budget cycle.
2) Time required for EM program to plan and budget post-transfer activities - depends on facility.

Figure 3 – Time Line Overview Example – Budget Already Available for Transition

facility for transfer. Depending on the relative complexity of the stabilization activities, the schedule may be controlled either by transition activities or the 2 disposition program budget cycle.

4.3 STEP 2: ESTABLISH INTEGRATED TRANSITION TEAM

Effective communications between the facility's operational or custodial organization and the organization that will be responsible for its disposition can benefit greatly by establishing an integrated transition team (herein after referred to as "integrated team") between the two organizations. Both the current operating and disposition programs should be involved in establishing an integrated team. Experience has shown that both programs should work together as much as possible to share experience and resources. The organization that leads the integrated team should be decided on a case-by-case basis, depending on the nature and condition of the facility. For example, an integrated team for a facility that is currently in operation should probably be led by the current responsible organization, whereas an integrated team for an orphaned facility would probably best be served by a disposition program lead.

Regardless of which organization leads the team, the disposition program is responsible for administering the transition process. To ensure that the transition process is applied consistently across the DOE complex, the integrating office within the disposition program will most likely have a lead role on the integrated team with responsibility to specify and provide preliminary approval of stabilization actions, proposed funding target transfers, and other items that will be identified in a Memorandum of Agreement (MOA) as being pertinent to the transfer of the facility (see Section 4.4.1).

DOE has learned from experiences throughout the DOE complex that a major factor for successfully completing projects is early involvement of affected organizations. Establishing integrated teams during the transition phase is one way to ensure that the affected programs and organizations form working partnerships, participate in development, and concur with the facility transition and disposition path. However, the intent is not to develop an additional layer between the facility and the DOE program offices; rather, the goal is to provide effective access to resources necessary to assist facility management in developing and executing the transition and disposition activities through partnering efforts. The approach to teaming needs to address both management communication and field conduct of work to ensure that agreed-upon stabilization actions are achieved as intended.

Operations and disposition programs should work together to ensure that good communications exist among affected senior level managers from DOE Headquarters programs, the field elements, and the contractor.[10] These senior-level managers should advise, monitor, and approve plans for the facility transition and disposition activities. Their responsibilities include the following, as appropriate:

- providing access to the full range of skills within respective organization structures;
- approving strategies and plans;

[10] In many instances, the operating contractor and the disposition contractor will be different.

- mediating institutional and financial issues;
- resolving conflicts that might impede expected results;
- ensuring schedule and budget for the facility are mutually consistent with overall priorities and allocations; and
- directing formation and specifying the authority[11] of the integrated team.

The composition and size of the integrated team and the specific personnel chosen for the team (generally a multidisciplinary group of site managers, engineers, safety and health personnel, and workers) should be determined using the graded approach based on facility complexity, hazards, risks, and programmatic impacts. Team members can include facility and program representatives from DOE field elements, operating program and disposition program contractor representatives (if different) as well as DOE Headquarters representatives from line and integrating offices and other technical staff as required. On a case-by-case basis, experts from disciplines such as emergency management, security, and technology development may be included as part of the integrated team. A DOE employee should be designated as the primary transition manager and should also lead the integrated team. Experience has shown that agreement on the results of facility characterization (discussed in Section 4.4) can be reached much sooner when representatives from both the operating and disposition programs are represented on the integrated team.

The integrated team leads in assessing the facility condition and identifying and implementing stabilization actions and subsequent end-points-driven activities before the facility is transferred to the disposition program. Specific objectives can be established that address (1) the physical condition/contamination status of the facility (discussed in Section 4.4); (2) stabilization actions needed (also discussed in Section 4.4); (3) integrating safety management into the transfer process; and (4) the administrative/budgeting status of the facility.

4.4 STEP 3: FACILITY CHARACTERIZATION

DOE O 430.1A requires that hazardous materials and wastes be identified, characterized, and stabilized (if necessary), properly stored, and removed and that S&M activities be conducted to maintain the facility and remaining hazardous and radioactive materials, wastes, and contamination in a stable and known condition pending facility transfer. This identification process—which is the responsibility of the operating program but generally is performed in coordination with the disposition program—entails a graded characterization[12] of the facility to establish existing conditions of the facility

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[11] It is especially helpful if the authority of the integrated team is established early; that is, the extent to which it or its members are empowered to make decisions.

[12] The characterization should be based, and its scope developed, on the level of process knowledge available, the risk of incomplete or outdated process knowledge, and the hazards posed by chemicals and radiation to workers, the public, and the environment. Additional information that addresses hazard identification and safety during the conduct of facility characterization can be found in DOE-STD-1027-92(CH-1), DOE-STD-1120-98, and DOE O 151.1, *Comprehensive Emergency Management System*, and its accompanying

and its contents. The characterization process should be considered "all-inclusive" and will, generally, include the collection and assessment of facility and process information gained from activities such as questionnaires, interviews, facility walk-downs, document reviews, and any other sampling, analysis, and assessments required to meet the drivers listed below.

Guidance provided in this section focuses on the identification and characterization aspects of DOE O 430.1A transition requirements. The information obtained supports the initiation of all stabilization actions. The primary drivers for the identification and characterization of the facility are—

- understanding and documenting the condition, liabilities (risks and hazards), and content of the facility,

- determining and specifying both early stabilization actions and those for which more detailed planning (i.e., development and allocation of stabilization end-points) are needed,

- developing information documenting the revised authorization basis (if necessary) and facility conditions prior to transfer, and

- identifying the estimated post-transfer S&M activities and associated costs and adequate target funding to be transferred from the operating program along with the facility.

The process of a graded characterization for transition purposes should begin with the use of existing knowledge of the facility, its processes, and material inventory from the operations phase. Available documentation of facility operating information (authorization basis, environmental, operating history, and process knowledge) and existing hazard baseline documentation (including emergency management hazards assessments) should be analyzed. Existing information should, however, be relied on with caution, especially for Case 2 facilities. Hazards (material, chemical, radioactive, and others) should be identified and documented. Emphasis should be placed on hazards that can result from changes in facility operational status (such as the effect of a chemical process system becoming static). If not already included, the current operating program should ensure that hazards are documented in the emergency management hazards assessment and that appropriate changes are made in emergency plans and procedures. Interviews with past and present employees may be necessary to supplement knowledge of past facility operations, including mishaps and incidents.

In addition to the analysis of existing information, hands-on facility and system reviews are generally needed to provide a more detailed understanding and also to provide information on changes in hazardous conditions that have resulted from cessation of facility operations. To ensure cost-effective use of resources, it is equally important in such cases to limit the information sought to that needed for safety and transition activity planning.

If there is a need for intrusive characterization activities (sampling and analysis) to adequately understand the hazards, the level of characterization should be determined on a case-by-case basis by

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Emergency Management Guide.

the integrated team and should be based on the level of uncertainty that remains regarding hazardous substances and the facility condition. Intrusive characterization should be considered only if knowledge of hazards is insufficient to support an understanding of hazardous material types, quantities, forms, potential exposures, locations, and methods for hazard reduction or removal, as well as whether such information is needed to support transition activities.

The intent of the facility characterization is to clearly identify and record what is known and what is not known about facility conditions. Facility status (Case 1 or 2 from Section 3.2) will have a significant impact on the characterization process. In application of the graded approach, if facility operations are ongoing, the facility information and inventory will likely be readily available, current, and require only minimal efforts to collect and supplement as necessary. In contrast, if the facility has been non-operational for some time, it can be expected that a significantly greater effort will be required to gather and validate the information especially if the facilities are perceived to contain hazards for which characterization is not available. It is expected that a more iterative process will be employed, with needed characterization and assessment crossing over the phases of transition and disposition in a seamless manner.

Facility characterization conducted during the transition phase is generally not intended to achieve the level of information needed for full deactivation or decommissioning. The chemical, radiological (including content), and physical hazards must be identified, however, to the level that stabilization actions can be specified to ensure that workers can safely perform their duties and that emergency management and S&M plans can be developed to mitigate the effects of any hazards. Depending on complexity and level of existing characterization information available, the cost and resources needed to characterize and prepare facilities for transfer may be substantial and may not be accounted for in program office budgets. As such, issues may arise between the operating and disposition programs regarding the level of information needed for unknown conditions. Criteria to use in resolving these cost and resource issues may include, for example, determining the proper characterization level sufficient to support an S&M program that is consistent with the guidance in DOE G 430.1-2, pending disposition; least-cost options; and the use of non-invasive/non-destructive analytical procedures where possible.

On the other hand, the operating and disposition programs may agree to work together on a greater level of detailed characterization when near-term deactivation/decommissioning is expected upon receipt by the disposition program and it makes scheduling and economic sense to more fully identify facility conditions at an early stage to facilitate planning.

Experience has established that understanding the condition of the facility, its systems, and contents can be accomplished by conducting a facility walk-down by the integrated team to acquire information, evaluate facility conditions, and analyze hazards in support of characterization, stabilization, and planning actions. This walk-down in conjunction with the associated activities serves as an important tool in meeting the DOE O 430.1A requirement to identify and characterize the hazardous and radioactive materials and wastes remaining in systems/facilities as well as the facility condition. Activities associated with the physical walk-down of the facility such as review and analysis of preliminary questionnaires, interviews with personnel familiar with the facility and its former operations, and document reviews provide for the collection and assessment of information before, during and after the conduct of the facility walk-down. Although the walk-down may be graded to the size, structure,

and hazardous condition of the facility, it should be conducted in such a manner as to acquire sufficient information to evaluate, analyze, and understand the chemical, radiological, and structural hazards of the facility and its contents, as well as to identify important data gaps and chart the path forward to additional characterization needed.

Checklists, walk-down surveys, and similar assessment methods have been developed by EM and are available as tools that may be used by the integrated team to focus on these information needs. Information regarding these tools is available on the *Excess Facility Transition to Deactivation & Decommissioning - Methods & Practices* Web page at http://www.em.doe.gov/deact/methods.html, by clicking on "Navigation Table" and then selecting "Survey and Transfer" from Tier 3 of the table.

The purposes of the facility walk-down and its associated activities are to—

- ensure that sufficient information has been collected, assembled, and analyzed to provide an understanding of existing conditions and hazards;
- identify additional characterization (if any) and all stabilization activities required;
- identify and allocate resources needed to maintain stable and known conditions of the facility, its systems and equipment pending disposition;
- permit efficient deactivation (or decommissioning) planning; and
- minimize the possibility of halting the progress of deactivation (or decommissioning) tasks because of significant unforeseen circumstances.

A report should be prepared to document the results of the facility walk-down and associated activities. A copy of this report should be included as part of the final validation documentation (as discussed in Section 4.10).

To ensure that the scope of characterization (including the facility walk-down and all associated activities) meets the intent of DOE O 430.1A transition requirements and is commensurate with the existing hazards, each of the following elements should be included in the planning and conduct of, and follow-up (as required) to the characterization, as appropriate to the complexity of the facility:

- An explicit delineation of the physical boundaries of the facility being transferred, including a list of physical structures and waste sites associated with the facility. It is also important to identify areas (rooms, systems, etc.) of the facility that will not be transferred. Rationale should be provided as to why these areas are not included in the transfer and who retains responsibility for them. For example, rooms and/or systems within or associated with an excess facility may be required to maintain plant electrical power even though the facility itself will no longer require electrical power and could be demolished. The impact(s) associated with such a deviation should be documented. Drawings, photographs, and other records reflecting the as-built and as-modified condition of the facility and its surrounding grounds should be a part of this element.

- An operating history (including previous operational records) of the facility giving the process knowledge of the nuclear and chemical materials that were handled and major spills or leaks that occurred.

- A description of the condition of all structures, existing engineered protective barriers, and systems installed to prevent migration of both hazardous and radioactive contamination to the environment and that ensure the safety of workers, the public, and the environment. Data collection and reporting systems such as FIMS and the Condition Assessment Survey can be used as a starting point for this purpose but are not to be used in place of the facility walk-down. To the extent possible, data from systems such as these should be validated as being complete, accurate, and current.

- A description of the nature, levels, and probable extent of the existing hazardous chemical contamination, the radiological contamination, and direct radiation fields within and around the facility.

- An accurate and complete inventory (including associated uncertainties) of types, forms, quantities, and locations of all special nuclear and fissionable materials.

- An inventory or estimate and the locations of the remaining hazardous material, waste and chemical inventories, and any associated uncertainty. This should include form and distribution information.[13]

- The occupational hazards associated with the facility. This evaluation should focus on fixed hazards. Temporary occupational hazards created to support operations and maintenance should be removed by the operations organization.
- Current radiological survey data used to—

  - **S** identify barriers necessary to protect the public and the environment and

  - **S** define the radiological working conditions, equipment (e.g., containment, protective clothing, etc.) or procedures that protect the worker.

- The facility's shutdown status. As a minimum, the facility safety envelope; S&M requirements; the preservation of facility structures, systems, and components; safeguards and security;[14] and

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[13] Materials inventory, contamination information, and uncertainty are critical inputs to conducting activities in a safe manner. Specific information about inventories in process systems, associated pipe galleries, ventilation systems, and filters should be defined because transition and disposition work will largely focus on these areas.

[14] Safeguards and security directives include provisions for terminating security interests at nuclear facilities, as well as for terminating the need to meet materials control and accounting (MC&A) requirements for nuclear materials. (DOE O 470.1, *Safeguards and Security Program,* Chapter IX, "Survey Program," requires a survey when security interests are terminated at a facility. DOE M 474.1-1, *Manual for Control and Accountability of Nuclear Materials,* sets forth requirements that must be met before MC&A activities can be terminated for nuclear materials.)

emergency plans and procedures should be addressed. Baseline information on energy utilities systems and services should also be included.

- A list of—
  - **S** documents that define the authorization basis and the S&M requirements necessary to maintain the current safety envelope of the facility;
  - **S** applicable permits, licenses, and agreements that remain imposed on the facility;
  - **S** outstanding commitments to regulatory authorities, tribal governments, stakeholders, and DOE organizations that require action; and
  - **S** excess equipment and material not required to operate and maintain the facility and that is planned to be removed from the facility.
- Resources that include—
  - **S** funding target necessary to support the required S&M activities after transfer, and
  - **S** human resources commitments identifying the DOE and contractor personnel to be transferred in order to maintain the safety envelope pending disposition.
- Information on any other factors such as potential future use, long-range site plans, facility condition, and potential health, safety, and environmental hazards that could influence the selection of decommissioning alternatives (safe storage, entombment, dismantlement, etc.) or deactivation alternatives (thermal stabilization, residue elimination, separation of utilities, etc.).

The information obtained and analyzed during the characterization process (i.e., facility walk-down, interviews, questionnaires, document reviews, additional characterization if required, etc.) should be documented in a report that serves as the basis for joint agreements regarding actions to be taken by both the operation and disposition organizations. In addition to the characterization elements identified above, the report should also include the following:

- organization representatives and survey participants;
- all analyses and assessments of the facility's structure, systems, and materials gained from the characterization process and all follow-up activities identified as required;
- summary, conclusions & recommendations;
- transfer considerations;

- post-transfer path forward and management risk;[15]
- stabilization and other actions required for transfer;
- surveillance and maintenance activities after transfer;
- details of surveillance and maintenance cost estimate; and
- attachments and references supporting the walk-down review of the facility.

The report also serves as the basis for an MOA (discussed in Section 4.4.1) to transfer the facility from the operating program to the disposition program. The report should be included as an attachment to the MOA and the final documentation that provides verification that all agreed to actions have been completed prior to transfer.

4.4.1 Memorandum of Agreement

DOE O 430.1A, Section 6g(5)(b) requires development of a signed agreement by relevant Secretarial Officers (i.e., DOE Assistant Secretaries) to document scope, conditions, state of readiness, and associated funding, when transferring facilities between program offices. An MOA, signed by both the operating program and the disposition program is an acceptable method to document the reassignment of management responsibilities for an excess facility.

The MOA between the operating program and the disposition program should document or otherwise contain (e.g., as attachments) each of the following elements as appropriate to the conditions of transfer.

- The condition of the facility, as determined through the completion of the facility walk-down and its associated activities.
- The characterization (if any) and stabilization actions to be completed prior to transfer.
- Any radioactive or hazardous chemical materials remaining after stabilization actions have been completed (Agreement by the operating and disposition programs is required and any required safeguards and/or special handling should be identified).
- Associated funding for out-year targets to support the required S&M activities after transfer.
- The names of all DOE organizations that are parties to the agreement, including those parties which have primary involvement as site owner or previous ownership, those responsible for

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[15] This topical area should address the near-term path forward and management risks for the disposition program. There may be actions that were not required during the transition phase but should be completed as soon as possible by the disposition program even though facility disposition may be delayed.

funding or partial funding, and those responsible for deactivation, decommissioning, and final disposition.

- The responsibilities of each party for:
  - technical and programmatic direction;
  - maintenance of Environment, Safety, and Health requirements;
  - maintenance of physical and personnel security requirements;
  - interacting with tribal governments, regulators, and stakeholders; and
  - implementing DOE regulations and policies.

- As appropriate, the basis (e.g., legal, part of lawsuit settlement, regulatory, DOE policy, etc.) for the decision to transfer the facility to the disposition program for deactivation, decommissioning and closure, or potential transfer back to the original owner (i.e., reuse, re-industrialization, etc.).

- Projected costs for current fiscal year (if mid-year transfer) and next two fiscal years including from which program office funding derives.

- As appropriate, determination of the number of Federal and contractor employees to be transferred with the project and the transition plan for the employees after the completion of the deactivation, decommissioning, and final disposition of the facility; and

- A listing of all current and reasonably expected future liabilities for lawsuits (if any), and as appropriate, employee transition costs and post contract benefits (pensions, medical and life insurance, workers' compensation, etc.) and the DOE office responsible for each liability.

If the facility transfer involves changing responsible contractors, a separate MOA can be used to document this transfer as well.

4.5 STEPS 4 AND 5: IDENTIFY AND PERFORM EARLY STABILIZATION ACTIONS

DOE O 430.1A requires that actions be implemented to place the facility, systems, and materials in stable and known conditions, to identify hazards, and to eliminate or mitigate hazards. Although a number of stabilization actions may be identified to meet these requirements from the assessments and observations completed during the facility walk-down and associated activities, others will require the application of a more detailed planning process. As the stabilization actions are identified, they are generally grouped into two categories; those that can or should be completed early during the transition phase and those that will be completed later since they require more detailed planning.

Early stabilization actions can begin without waiting for the completion of the formal planning process using systems engineering concepts and processes that determines transition completion conditions (i.e., end-points) and identifies the probable disposition path. It is expected that appropriate planning to ensure the safety of the worker, the public, and the environment in the performance of these early

stabilization actions is completed and approved prior to the start of work. Early stabilization actions generally focus on eliminating or mitigating obvious unstable conditions and hazards. There may be other early stabilization actions identified that are not safety related but also make sense to complete early. Stabilization activities that can begin before formal end-point planning is complete are (1) those for which the end-point is apparent and work can continue to that point and (2) those that can begin with the anticipation that the end-points process will provide the completion specifications. Responsibility for management and implementation of these stabilization actions is with the operating organization.

The operating status of a facility, that is, its condition relative to the earlier Case 1/Case 2 descriptions, will be a factor in deciding the distribution of effort between initiating early stabilization actions and those that will be completed using the end-point planning process as discussed in Section 4.8 of this Guide. Case 1 operating facilities will generally be better positioned to use existing personnel and systems to conduct early stabilization actions that eliminate or mitigate hazards in a timely, cost-effective manner. Operations should be conducted to reduce hazards, such as by clean-out runs of process systems or ridding the facility of chemicals and explosive hazards that clearly must be eliminated.

Effective configuration management and control are important in planning and implementing these early stabilization actions as well as other stabilization and disposition activities that will follow. Strong configuration control is needed during the transition phase so that accurate and updated drawings and procedures are used in the maintenance, surveillance, and monitoring of safety systems required for the protection of workers, environment, and the public while implementing facility transition and disposition activities.

Examples of policy and operational issues that may affect the priority and need for stabilization actions during the transition phase include the following:

- Policy Issues –
  - disposition path for removing radiological and hazardous materials;
  - material interim storage needs;
  - stakeholder commitments, legal actions, and other requirements;
  - emergency management requirements; and
  - safeguards and security requirements.
- Operational Issues –
  - availability of personnel with operational expertise;
  - nature, degree, and extent of hazards in the facility;
  - surveillance and maintenance resource burdens if stabilization actions are delayed;
  - heating, ventilation, lighting, electricity, and water required for later work;
  - requirements for fire detection and suppression; and
  - structural integrity of the facility.

Stabilization actions are identified, and work initiated, after the facility walk-down and completion of any associated activities (Step 3) to help ensure that benefits will result from the activities. This sequence of actions safeguards against doing work later found to be unnecessary, or even counterproductive, once the disposition path and end-points are identified. For example, there may be little value in completing stabilization actions to decontaminate areas that are not expected to be accessed until a facility is dismantled. On the other hand, containing contamination to prevent uncontrolled spread may be of value to future work. In general, structures, equipment, and systems that will likely be required during subsequent transition, deactivation, or decommissioning activities for either safety or future work should not be permanently disabled or removed. Examples include lighting, lifting cranes, elevators, ventilation, and waste processing.

In accordance with DOE O 151.1, Chapter IV, Operational Emergency Hazardous Material Program, each site/facility has the overall responsibility for initial and ongoing response to and mitigation of an emergency. An appropriate response is directly related to maintaining a comprehensive and accurate hazard assessment reflecting changes in material inventories, processes, and activities. The activities associated with the transition phase may impact the safety basis and the hazard assessment. As such, a consistent and technically sound process for maintaining emergency preparedness, hazards assessments, and associated consequences analysis of facilities is needed during the transition phase. Mechanisms must ensure that emergency planners and responders are notified in advance of changes.

4.6 STEP 6: IDENTIFY DISPOSITION PATH

The ability to most effectively specify many of the stabilization end-points is dependent on whether the first part of the facility disposition path is (1) direct to decommissioning type activities, primarily dismantling and demolition, or (2) to deactivation conditions for an extended duration of minimal activity and monitoring. Functional understanding of the probable disposition path is key in the engineering planning process of end-point development and allocation leading to determination of the complete list of transition activities. Knowing the disposition path following the transition phase is especially important to avoid activities that later prove to be unnecessary or counterproductive. Generally, identification of the disposition path is the responsibility of the disposition program.

Many factors must be considered when determining the disposition path. Foremost are conceptual life-cycle cost projections for deactivation versus decommissioning relative to budgets, the projected cost of ongoing surveillance and maintenance, and agreements among DOE, tribal governments, State regulators, and various stakeholders. Factors such as facility hazards and physical condition can also be important. In some cases, part of a facility may remain operational for the foreseeable future; this, as well as the presence of other nearby facilities must be considered for decisions concerning the disposition path.

In identifying the probable disposition path (i.e., deactivation or decommissioning), activities and associated cost, as well as available funding profiles for both options, should be evaluated as decisions factors, among others. The probable facility disposition path to be used as the basis for transition project planning can be identified using hazard information, activities, cost, and other constraints, combined with national priorities and strategies. If, for some reason, the disposition path cannot be determined, the default planning assumption will be deactivation for at least the major facilities.

4.7 STEP 7: ASSESS AND ADJUST AUTHORIZATION BASIS

DOE O 430.1A requires an assessment and adjustment (if necessary) of the facility authorization basis as part of transition activities to ensure it continues to reflect conditions in the facility pending disposition. The guidance in this section provides an acceptable method for performing the authorization basis assessment and maintaining the authorization basis so that it is current with planned activities and facility conditions. The goal of this process is to ensure that facility transition activities are addressed by the authorization basis and that an appropriate authorization basis is provided at the time of transfer to facilitate disposition activities. Assessment and adjustment of the authorization basis are generally performed by the operating organization.

Many facilities are not radiologically contaminated, but are contaminated by other hazardous substances. As a result, these non-radiologically contaminated facilities may not have an authorization basis developed in accordance with the requirements of 10 CFR 830, Nuclear Safety Management, Subpart B, Safety Basis Requirements. DOE O 151.1, however, not only requires the analysis of radiological hazards, but also requires that the analysis and safety basis of occupational and non-radiological hazards be documented for facilities that have contained inventories of radiological or non-radiological hazardous materials. This analysis also serves as the basis for the emergency management program. DOE-STD-1027-92 (CH-1), *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports,* Section 3.2 should be referenced to ensure that the hazard assessment is sufficient. The hazard assessment should be evaluated to ensure that it is current with planned activities and facility conditions.

There are two possible authorization basis scenarios regarding transition of radiologically contaminated facilities. In the first scenario, a current authorization basis does not exist. The need to develop authorization basis documentation will be clear, and the documentation is required by DOE directives. Detailed guidance on developing authorization basis documents is provided in DOE-STD-3011-94, *Guidance for Preparation of DOE 5480.22 (TSR) and DOE 5480.23 (SAR) Implementation Plans;* DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports;* DOE-STD-EM-5502-94, *Hazard Baseline Documentation;* and other related DOE Standards.

In the second scenario, a current facility authorization basis document is in place and could be evaluated with regards to transition (and later disposition) activities. It is possible, however, that the facility has an outdated authorization basis, which could be especially true for legacy facilities. An acceptable method of evaluating the adequacy of the authorization basis for activities is through use of the USQ process defined in 10 CFR 830, Subpart B. If the facility is non-nuclear, a USQ-like process can be applied.

Early in the transition phase, it is likely that all activities for both the transition and disposition will not be defined to the level of detail required for a thorough USQ determination. Based on the preferred or anticipated activity approach, a preliminary or “umbrella” USQ can be performed for major types of activities (such as tank flushing throughout the facility rather than for a specific tank as will be formally evaluated later in keeping with 10 CFR 830, Subpart B). The objective is to determine if, based on the current understanding of the activity/task type, the authorization basis will adequately address the activity.

This approach may be used to determine that, for example, the authorization basis for 2 out of a planned 50 major types of activities would require modification and specific DOE approval prior to initiation. As a result, a strategy to obtain the authorization for these specific tasks can be developed. In cases like the one in this example, authorization of these activities can likely be accomplished more cost-effectively without developing a completely revised authorization basis document. Specific resolution and authorization of activities should be performed based on 10 CFR 830, Subpart B. The authorization basis assessment and adjustment (if necessary) should be focused on the activities to be performed.

As stabilization end-points (discussed in Section 4.8 of this Guide) are completed, there may be situations where previous facility technical safety requirements can be decreased or eliminated. This will, generally, be the case after a facility is shut down and is considered to be in an industrially and radiologically safe configuration.

4.8 STEP 8: OTHER STABILIZATION ACTIONS

Although a number of stabilization activities will be identified and initiated as early stabilization actions (see Section 4.5), other stabilization activities requiring more detailed understanding and planning will often be necessary to meet the transition requirements of DOE O 430.1A and place the facility in a stable and known condition. Since DOE O 430.1A requires an end-point process in facility deactivation and decommissioning planning, the use of this process for the planning of these other stabilization activities is suggested to provide a consistent and integrated approach.

4.8.1 End-Point Development

The end-points methodology is a formal, project management approach that presents proven systems engineering concepts and methods that can be used to plan and implement stabilization activities other than those identified as "early stabilization actions." Specifying and meeting "stabilization end-points" is a systematic, engineering way of proceeding from the existing operational condition to a stated desired set of conditions in which risks have been reduced in the facility. Additional guidance for understanding and implementing the end-points methodology is provided in DOE G 430.1-3 and on the "Excess Facility Transition to Deactivation & Decommissioning - Methods & Practices" Web page at http://www.em.doe.gov/deact/methods.html.

Operating and disposition programs should work together to identify (in addition to early stabilization actions) other stabilization actions for which stabilization end-points are required with consideration of the ultimate disposition path to deactivation and/or decommissioning where possible. For example, the excess facility may be transitioned to deactivation with an interim surveillance and maintenance period prior to decommissioning or may be transferred directly to decommissioning.

Just as the design specifications are essential to a construction project, completion of required and appropriate stabilization end-points for a facility's spaces, systems, and major equipment identifies a facility that is in a stable and known condition and ready for the seamless transfer to the disposition program.

End-point specifications are also used:

- as input for scheduling and cost estimating,
- to create detailed work plans for selected spaces and systems in the facility,
- to document bases for performance-based contracting or out-sourcing of work (where practical),
- to demonstrate conformance to agreements negotiated with third parties who have a legitimate stake in the condition of the facility after transfer, and
- to show compliance with Federal, tribal government, State, and local laws and regulations and other negotiated agreements.

Stabilization end-points planned and achieved vary from facility to facility across the DOE complex. Variations are expected because of the differences among facilities with respect to previous mission requirements, equipment and systems, containment, type and degree of contamination, ability to isolate the contamination, facility environs, expected disposition path, and a host of other factors. These other stabilization end-points are derived for plant areas, structures, systems, and equipment. The end-point specifications must be clear, quantitative (where possible), practical, and achievable and in all instances must be explicit.

Several guiding principles form the foundation of the end-point process:

- The decision to specify end-points should be driven by, and clearly linked to, top-tier transition objectives. Establishing such objectives is the first step in developing end-point specifications (see reference at the end of Section 4.8).
- End-point decisions are integrally linked to decisions (and constraints) on resources and methods. If a proposed end-point is not economically feasible, it should only be specified if mandated by law, applicable regulation, or formal agreement.
- End-point decisions for the transition phase necessarily must be linked to a functionally defined transition end state. They may also consider and support, but should not necessarily be driven by, perceptions of actions to be taken during post-transition deactivation or decommissioning projects.
- The end-point conditions of the facility should use defense-in-depth as a fundamental safety approach. As applied here, defense-in-depth involves three layers of protection: elimination or stabilization of hazards, effective facility containment, and facility monitoring and control.
- Successful end-point development requires involvement by all affected organizations, including the planners, the work force (when possible), and the disposition organization.

- Work teams in the field need clear, quantitative completion criteria.
- Most end-point decisions can be made during the early planning stages; however, some end-points will have to be revised as work proceeds.
- The transition objective is intended to be achieved within a relatively short time frame using current technology and personnel familiar with the facility's operational processes.

Application of the graded approach in the development of end-points is appropriate in order to differentiate between complex facilities with process systems and/or significant hazards and relatively simple buildings that are not substantially contaminated and do not have complex equipment or systems.

If possible, it is advisable to identify a comprehensive set of end-points for both the transition and disposition phases (i.e., deactivation and/or decommissioning), and to allocate those addressing stabilization activities to the transition phase. In most cases, only stabilization end-points need to be identified during the transition phase, based on an understanding of the expected disposition path for the facility.

4.8.2 End-Point Allocation

When a decision is made to identify a combined set of detailed end-points for transition and disposition and to allocate those addressing stabilization activities to the transition phase, two benefits are achieved: (1) seamless transition can more readily be achieved because disposition planning can begin based on identified disposition end-points (those not allocated to the transition phase), and (2) the cost associated with end-point development will be required only this one time, resulting in a cost savings to DOE. The decision to identify stabilization end-points and detailed disposition end-points as a group will likely require a greater level of facility characterization during the transition phase, as discussed in Section 4.4.

In identifying the stabilization end-points, it is important to take advantage of the capabilities of existing operational systems and personnel where possible. For example, by performing a final process run and flushing and sampling as part of the last operational activities, the operating program can significantly mitigate hazards, prevent detrimental chemical reactions and systems deterioration due to material holdup, and reduce the total costs of life-cycle activities.

The following guidelines will assist in determining which end-points should be allocated to the transition phase:

- Activities to complete end-points requiring training and skills that may be lost following cessation of operations.
  Example: Product/SNM removal and stabilization
- Activities that are natural extensions of operations, such as bulk product removal, flushing, etc.
  Example: Documented piping and tank flushing after final process runs

- Removal of radioactive, nuclear, and/or chemically hazardous substances and wastes for which disposition paths are readily available.
  Example: Disposal of stored hazardous substances and other bulk containerized materials

- Activities which, if deferred, significantly increase the associated risk or cost.
  Example: Organic solvent solution decontamination

- Completion of end-points, which are necessary to ensure protection of workers, the public, and the environment at the time of transfer (operating program to disposition program).
  Example: Stabilization and/or fixation of readily dispersible radioactive or chemically hazardous substances

4.9 STEP 9: PLANNING AND EXECUTION FOR OTHER STABILIZATION ACTIONS

As end-points are identified, project planning and execution activities are initiated to ensure that they are achieved. Planning should focus on application of the graded approach. The planning and execution of the stabilization end-points is the responsibility of the operating program. To the extent possible, existing management systems should be used to perform and control the work activities safely.

The completion and validation of early stabilization actions and other stabilization actions requiring the application of a more detailed planning process (i.e., end-points) demonstrates the readiness to transfer the facility from the operating program to the disposition program.

4.10 STEP 10: PRE-TRANSFER REVIEW

DOE O 430.1A requires the conduct of a pre-transfer review to transfer a contaminated excess facility from an operating program to the disposition program. An acceptable method of meeting the pre-transfer review requirement is to validate that all early stabilization actions and stabilization end-points have been completed. The validation should be based on the agreements reached during the facility walk-down and its associated activities and documented in or attached to the MOA (discussed in Section 4.4.1). The pre-transfer review should not be conducted until all stabilization actions have been completed. In most cases it will be performed approximately two years (reference the time span of the notification and transfer milestones in Figures 2 and 3) after the conduct of the facility walk-down and its associated activities.

The overall intent of the pre-transfer review is to verify and document that all stabilization actions have been completed as stated in the MOA. It should be understood that although the MOA contains all transfer requirements, they are generally defined at a functional level. Validating the completion of early stabilization actions and other stabilization actions requiring end-points during the pre-transfer review is intended to validate the completion of the functional requirements in the MOA.

The disposition program must be assured that the facility has been characterized appropriately and that stabilization actions have been completed placing the facility in a stable and known condition. It is

therefore important that the disposition program participate along with the operating program[16] in validating the completion of all agreed to actions by the operating program. Any remaining hazards should also be identified prior to transfer of the facility.

The facility walk-down and associated activities in conjunction with the pre-transfer review, should (1) establish a baseline at the time of transfer to provide the disposition program with an adequate understanding of the facility; (2) include an assessment and graded characterization of the facility; (3) ensure that sufficient information has been collected, assembled, and analyzed to provide an understanding of existing conditions and hazards; (4) document the remaining hazards based on completion of early stabilization actions and stabilization end-points; (5) permit efficient deactivation (or decommissioning) planning; and (6) minimize the possibility of halting the progress of deactivation (or decommissioning) tasks because of significant unforeseen circumstances.

At the time of transfer, it is expected that the safety and health requirements have been determined and evaluated for appropriateness, that the required safety systems and controls have been identified, and that a determination has been made as to whether they are in place and performing as intended.

4.11 STEP 11: FACILITY TRANSFER

A documented validation (completed during the pre-transfer review) that all early stabilization actions and other stabilization actions requiring end-points have been completed provides confirmation that all agreed to stabilization requirements contained in the MOA have been completed. A review and validation should also be conducted of the other elements identified in the MOA that were previously agreed to by the operating and dispositioning programs. These include, in part, identification of any radioactive or hazardous chemical materials remaining after stabilization actions have been completed; associated funding for out-year targets to support the required S&M activities after transfer; other resource requirements; and future liabilities.

After all required elements contained in the MOA have been validated, the contaminated excess facility can be transferred to the disposition program. In those cases when actions have not been completed by the operating program at the scheduled time of transfer, the MOA should be modified to document the unexpected events, change in the transfer date, or other circumstances pertinent to the transfer of the facility. Alternate agreements beneficial to safety and transition goals can be negotiated and entered into the modified MOA or the transfer of the facility may be deferred.

A transfer memo signed by representatives of the program offices involved in the facility transfer should be prepared documenting the date of transfer and any other information pertinent to the transfer of management responsibility. The report documenting the results of the facility walk-down (including all associated activities) and validation and other appropriate documentation (if any) related to the facility's transfer status should be considered as attachments to the final documentation.

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[16] Better coordination and provision for a seamless transfer is also achieved by having representatives from the operating program and disposition program participate.

In those cases where the transfer of a facility was made without an MOA and related documentation and prior to publishing the requirements contained in DOE O 430.1A, actions may be taken to determine whether it is appropriate to retroactively document the condition of the facility and any agreements in place at the time of transfer. A memo to file documenting the transfer agreement after the fact between the disposition program and the operating program may be useful.