Draft Operating Procedures for a Generic Repository Development Organization

Fuel Cycle Research & Development

Abstract

This document is milestone M4FT-16SN080503032: *Draft Operating Procedures for a Generic Repository Development Organization*, the result of efforts under work package FT-16SN08050303 Develop and implement operating procedures – SNL. The objective of this effort was to develop this draft document identifying and summarizing the principal operating procedures for a generic repository development organization (RDO) with the responsibility to site, characterize, design, license, construct and operate a repository for the disposal of high-level radioactive waste (HLW) and spent nuclear fuel (SNF) managed by the Department of Energy. These operating procedures reflect practices that facilitate compliance with U.S. Nuclear Regulatory Commission (NRC) expectations and NQA-1 quality standards, and other internal U.S. Department of Energy (DOE) practices.

The objective of this milestone (M4FT-16SN080503032) was to identify the procedures that need to be developed for a generic repository development organization to perform its functions. It is related to another milestone. The report *Draft Infrastructure Framework for a Generic Repository Development Organization* (M2FT-16SN080503021) identifies the framework of the organization needed and the functions of the organizational elements necessary to execute a repository development plan.

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Acronyms

ASME	American Society of Mechanical Engineers
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
EVMS	Earned Value Management System
HLW	High Level Waste
IT	Information Technology
LSN	Licensing Support Network
NARA	National Archives and Records Administration
NWPA	Nuclear Waste Policy Act of 1982
NRC	U.S. Nuclear Regulatory Commission
QA	Quality Assurance
RD&D	Research, Development, and Demonstration
RDO	Repository Development Organization
SCWE	Safety Conscious Work Environment
SNF	Spent Nuclear Fuel
SNL	Sandia National Laboratories
WBS	Work Breakdown Structure

Draft Operating Procedures for a Generic Repository Development Organization

1.   Introduction

This document is milestone M4FT-16SN080503032: *Draft Operating Procedures for a Generic Repository Development Organization*, the result of efforts under work package FT-16SN08050303, "Develop and implement operating procedures – Sandia National Laboratories (SNL)." The objective of this effort was to develop this draft document identifying and summarizing the principal operating procedures for a generic repository development organization (RDO).

This document identifies and describes the principal operating procedures for a generic organization with the responsibility to site, characterize, design, license, construct and operate a repository for the disposal of high-level radioactive waste (HLW) and spent nuclear fuel (SNF) managed by the U.S. Department of Energy (DOE). It is assumed that the facility is to be licensed under U.S. Nuclear Regulatory Commission (NRC) regulations with DOE as the applicant (licensee). The operating procedures reflect practices that facilitate compliance with NRC expectations, the American Society of Mechanical Engineers (ASME) NQA-1 *Quality Assurance Requirements for Nuclear Facility Applications* standard (ASME NQA-1–2015), and applicable DOE directives.

This document is related to another milestone report (M2FT-16SN080503021), *Draft Infrastructure Framework for a Generic Repository Development Organization* (SNL 2016) that identifies the infrastructure framework for an RDO and the functions of the organizational elements necessary to execute a repository development plan. This report (M4FT-16SN080503032) supports the infrastructure document.

The discussion herein is based on the statutory and regulatory framework existing in 2016. DOE's 2015 report on defense waste disposal (DOE 2015) clearly indicates a preference, if not a requirement, for pursuing public acceptability using a 'phased, adaptive, consent-based siting approach.' The Nuclear Waste Policy Amendments Act of 1987 (NWPAA) Section 8(b)(3) renders a 'repository for the disposal of high-level radioactive waste resulting from atomic energy defense activities only' (i.e., a defense waste repository) subject to NRC's licensing authority. Under the current regulatory framework a defense waste repository will need to comply with 10 CFR Part 60 and by reference 40 CFR Part 191.

The context in which the organization's work will be conducted differs substantially from that of the typical research, development and demonstration (RD&D) environment. First, there are work elements that are not customarily included in RD&D work, such as regulatory compliance, a corrective action program, and requirements / commitment management. Secondly, the rigor with which organizational assurance and quality assurance functions need to be applied, practiced and verified is significantly greater than usually necessary in an RD&D environment.

2.   Background

In March 2015, the President found in a Presidential Memorandum for the Secretary of Energy (Obama 2015) that "the development of a repository for the disposal of high-level radioactive waste resulting from atomic energy defense activities only is required." The presidential finding is supported by the March 2015 *Report on Separate Disposal of Defense High-Level Radioactive Waste* (DOE 2015), which concluded considering the President's finding, that

> "the Secretary may develop a Defense HLW Repository under his Atomic Energy Act of 1954 authority. In developing a Defense HLW Repository, the Secretary would be subject to U.S. Nuclear Regulatory Commission (NRC) licensing authority, but would not be subject to the NWPA's siting provisions, apart from the State and tribal participation provisions specified in Section 101 of the NWPA" (DOE 2015, p. 2).

Additional support for the 2015 decision was provided in a 2014 DOE *Assessment of Disposal Options for DOE-Managed High-Level Radioactive Waste and Spent Fuel* (DOE 2014) that evaluated technical options for the permanent disposal of HLW and SNF managed by DOE. The report drew heavily on a national laboratory report titled *Evaluation of Options for Permanent Geologic Disposal of Used Nuclear Fuel and High-Level Radioactive Waste Inventory in Support of a Comprehensive National Nuclear Fuel Cycle Strategy* (SNL 2014), which summarized the inventory of both commercial and DOE-managed radioactive wastes requiring geologic disposal.

The Administration's 2013 *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (DOE 2013) and subsequent documents (DOE 2014 and DOE 2015) endorse a phased, adaptive, and consent-based approach to implement a flexible waste management system incrementally to ensure safe and secure operations, gain trust among stakeholders, and adapt operations based on lessons learned (DOE 2013). On December 23, 2015, the DOE issued an Invitation for Public Comment to Inform the Design of a Consent-Based Siting Process for Nuclear Waste Storage and Disposal Facilities in the Federal Register (80 FR 79872) thereby initiating the development of its consent-based siting process.

The RDO's organizational infrastructure elements and their functions are described in a supporting report (SNL 2016). This report identifies and summarizes the principal operating procedures necessary for a functional and compliant RDO.

3.   Purpose and Scope

The purpose of this report is to identify and describe the principal operating procedures for an RDO and is meant to be independent of type of licensee (private, government, or combination thereof), location of the disposal facility or geologic media. DOE directives are identified to illustrate the type of upper tier guidance with which the organization will need to comply. It is not intended that this be an exhaustive review of functions or documentation necessary to comply with guidance similar to DOE's directives that may be applicable to such an effort. However, it is a near-comprehensive view of the scope and type of policies, plans and procedures necessary to support such an effort.

Further enumeration of and elaboration on these policies, plans and procedures will require re-evaluation as an RDO is established and staffed, and roles and responsibilities are assigned to its workforce.   The operating procedures identified herein will provide the foundation for an effective, high quality RDO operation.

The scope of responsibility of the organization considered in this report is to site, characterize, design, license, construct, and operate a repository for the disposal HLW and SNF managed by the DOE. This scope is extensive, and will take decades to accomplish, and it will involve compliance with regulations from multiple government agencies, primarily the NRC, the U.S. Environmental Protection Agency (EPA), and the DOE, but also includes conventional workplace safety and labor requirements. To implement the effort's vast and complex work in compliance in this framework will likely involve hundreds of policies, plans, and procedures for a fully functional organization.

Recognizing that substantial changes will occur over such a long timeframe, this report focuses on identifying policies, plans, and procedures necessary to support the roles and responsibilities of organizational elements that are needed to initiate the work. Those that will support the scientific and engineering endeavors that will actively accomplish the siting, characterization, design and licensing of the disposal facility; repository construction and operations are not considered in depth here.

The organizational elements that are the focus of this report are unshaded in Figure 1 and referred to as the 'Management' and 'Support Groups' elements in the rest of the report. The nature of these management, administrative, business, and technical support functions are well enough understood based on past experience to define policy and procedural needs with some detail at this time. The specific configuration and details of the scientific and engineering organizational element's operating procedures is beyond the scope of this report; however, some general procedural requirements for these areas are identified.

Organizational elements and their associated policy and procedural needs reflect a workforce composition and state of practice that facilitates compliance with NRC expectations. Thus, it is assumed that the work will be conducted in compliance with NRC quality assurance requirements, assumed here to be equivalent to implementing the ASME NQA-1 standards (ASME NQA-1–2015). A sometimes overlooked component of a compliance-oriented endeavor is the importance of having a procedure-oriented technical support and business process organization. The unshaded portions of Figure 1 illustrate the professional non-technical (not science and engineering) team elements needed to provide support and business process management to ensure success of a geologic repository development project. Figure 2 shows the support organization elements and the associated functions. The policies, plans, and procedures discussed herein are organized in this context.
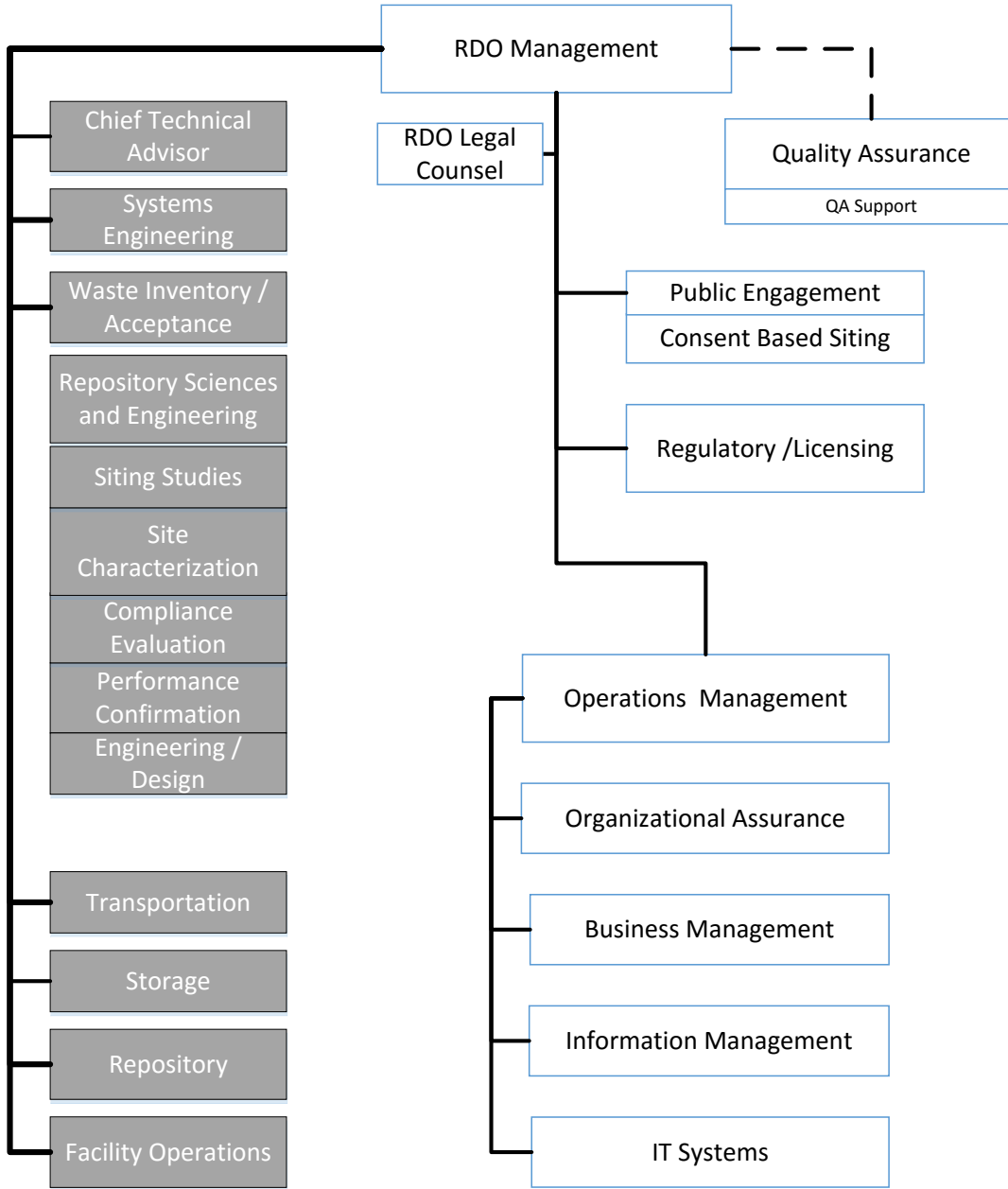
Figure 1.   RDO Organizational Elements
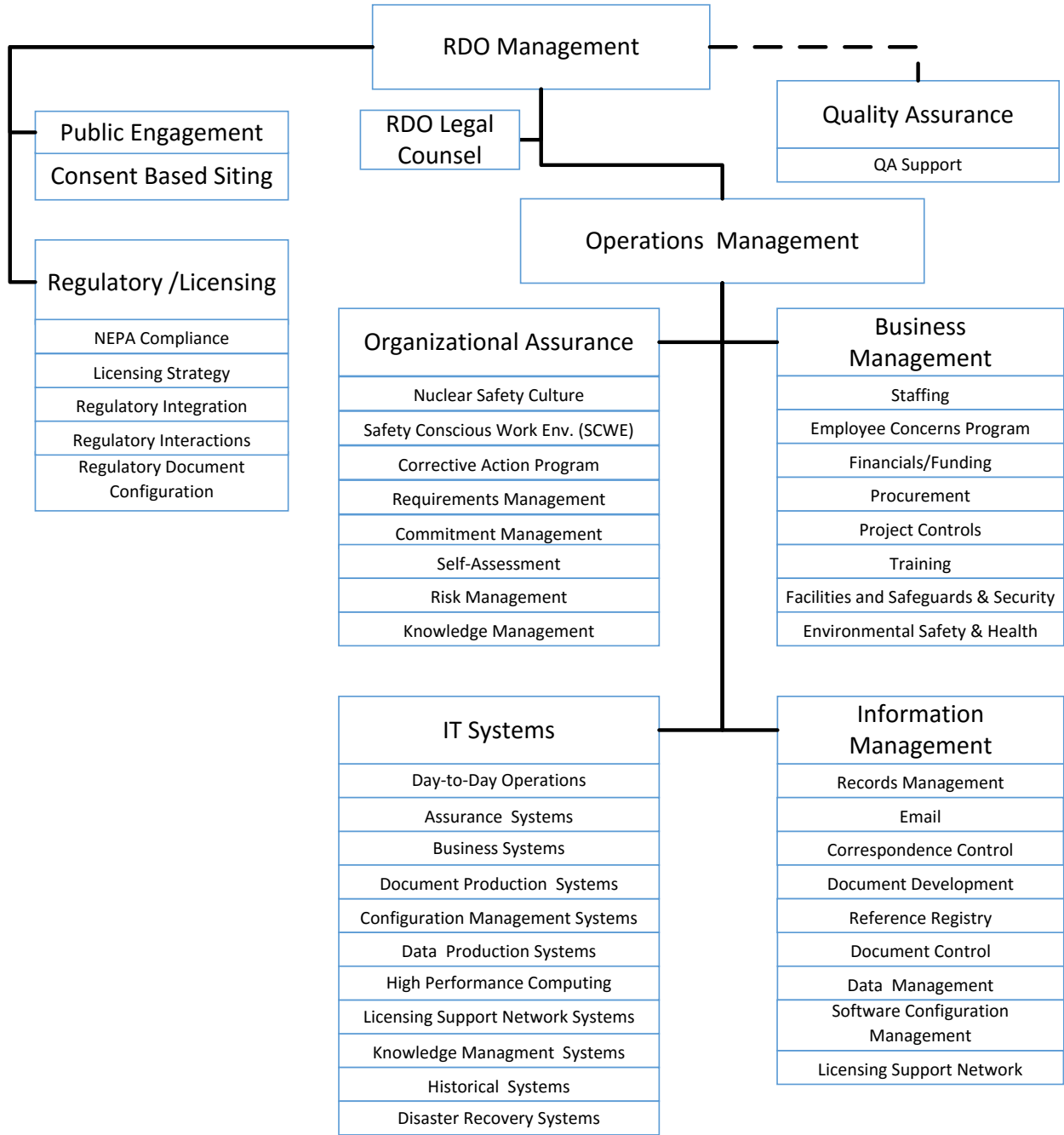
Figure 2.   Support Organization Elements Showing Functions

3.1   Principles, Concepts, and Terms

For clarity, several principles, concepts, and terms are applied throughout this report.   Policies are promulgated by RDO Management to provide overall direction to the organization. Organizational elements perform their function(s) in accordance with policy direction. In most cases, organizational elements also perform their function(s) in accordance with a management plan that it has produced and has been approved by RDO Management (e.g., Information Management Plan). If necessary, procedural controls are identified in the management plan for activities that require an increased level of definition. Policies, plans, and procedures are used to define processes (workflows), as discussed herein. The electronic information technology (IT) tools that support or facilitate the processes are referred to as 'Systems.' The description of the procedures herein is summary-level.

Also, this report applies a convention to distinguish specifically between the usage of the terms 'process' and 'system.' Processes are workflows designed by an organizational element to accomplish its functional responsibilities. A 'system' is an IT solution that is designed to support the process, or processes, for a particular organizational element's function(s).   As an example, Information Management is an essential organizational element/function. The 'process' for submittal, recording, processing and retention of records is a workflow that is described in an Information Management Plan and most likely a Records Management Procedure. The IT solution(s) that facilitates this workflow is an Information / Records Management 'System' or 'Service.' In the following discussions distinguishing between an organization's functional processes and the electronic systems or IT services that facilitate compliance with a defined process is important to avoid confusion.

A complete list of policies, plans and procedures will depend on detailed decisions about organizational roles and responsibilities that will be determined and decided in the future; the purpose in this report is to outline the type and scope of procedures that will be needed and to give a general indication regarding the schedule for development of those procedures.

3.2   Time Frame

The schematic timeline shown in Figure 3 illustrates the timeframes and activities providing context for what is discussed here. As shown in Figure 3 and as discussed in this report, the major phases are:

- Startup
- Initiation
- Site Selection
- Site Characterization
- Licensing.

Note that subsequent phases—construction, operation, and closure—are beyond the scope of this report and are not addressed here.
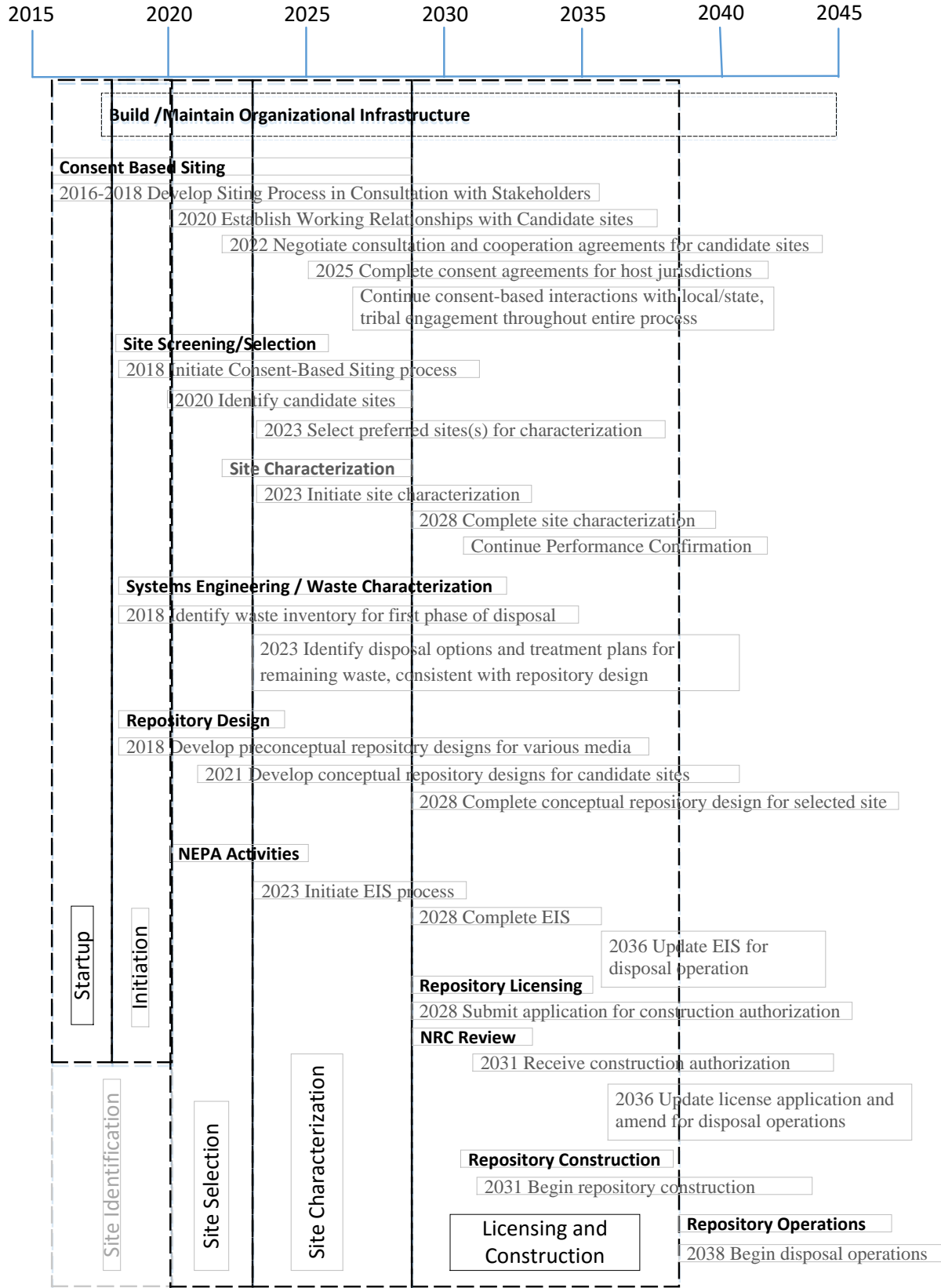
Figure 3.   Schematic Timeline for Repository Development

3.3   Time Frame for Development of Policies, Plans, and Procedures

Figure 4 provides an estimate of the number of policies, plans, and procedures requiring development and implementation during each of the major phases listed in Section 3.2 for each of the project organizational elements.   It shows that early phases are focused on standing up the enterprise, establishing policies, plans, and procedures for management, consent-based siting, business and administrative policies and processes, and information technology and information management structures.   Science and engineering procedures are developed as needed to support site selection and, later, detailed site characterization. Licensing procedures are needed at first to initiate regulatory interactions and compliance activities; however, some licensing procedures will not be needed until license application activities begin in earnest at the licensing phase.

As discussed further in Section 5, the procedures identified in this report and illustrated here are a summary outline of what is likely to be needed. The actual procedures needed to control and implement the work will depend greatly on the detailed structure of the organization and the actual technical and regulatory requirements of the repository systems to be determined later, at site selection and thereafter. Also, in Figure 4 procedures are associated only with the phase during which they are likely to be first developed, even though many (or even most) will need significant update or replacement at later phase. Therefore, the estimated number of procedures represented for the site characterization and licensing phases are likely lower than will be required. The procedures unaccounted for will be needed primarily by the Science and Engineering organization, but it is also likely that some additional procedures will be needed in operations (facilities and site management and environmental safety and health (ES&H)), public engagement, consent bases siting, and the regulatory and licensing areas that can't be anticipated prior to a siting decision. Figure 5 presents the same data, but organized by organizational element.

The listing includes many procedures that reflect relatively standard organizational requirements (e.g., Business Management), for which existing procedures of a parent organization of the RDO (federal, laboratory, or contractor) could apply directly or be readily adapted. No attempt has been made to anticipate which of policies, plans, and procedures identified here could be readily be adopted or adapted from a parent organization.

As mentioned in SNL 2016, establishing a coherent and integrated organization along with the necessary assortment of policies, plans and procedures may take most of the first two to three years of effort. Nonetheless, progress can be made right from the start by assembling a minimally staffed organization functioning in accord with a select set of policies and procedures. While this report identifies 273 plans, policies and procedures as necessary to the organization's functionality, it is important to recognize that many of them are necessary from the start. As with most similar efforts, the policy and procedural basis will grow from a core set, and develop based on organizational needs. The initial effort to identify, assemble, and promulgate the enterprise's policy and procedural basis will consume a substantial part of the core group's effort.

It is important to be mindful that in such a long-term effort the initial organization and subsequent variations that should be anticipated will need to function with demonstrable continuity for decades. The duration of this effort will span two to three workforce generations and significant changes in direction, the implementing organization and procedure, and the workforce is assured. The evolution of the policy and procedural framework into the future is certain.
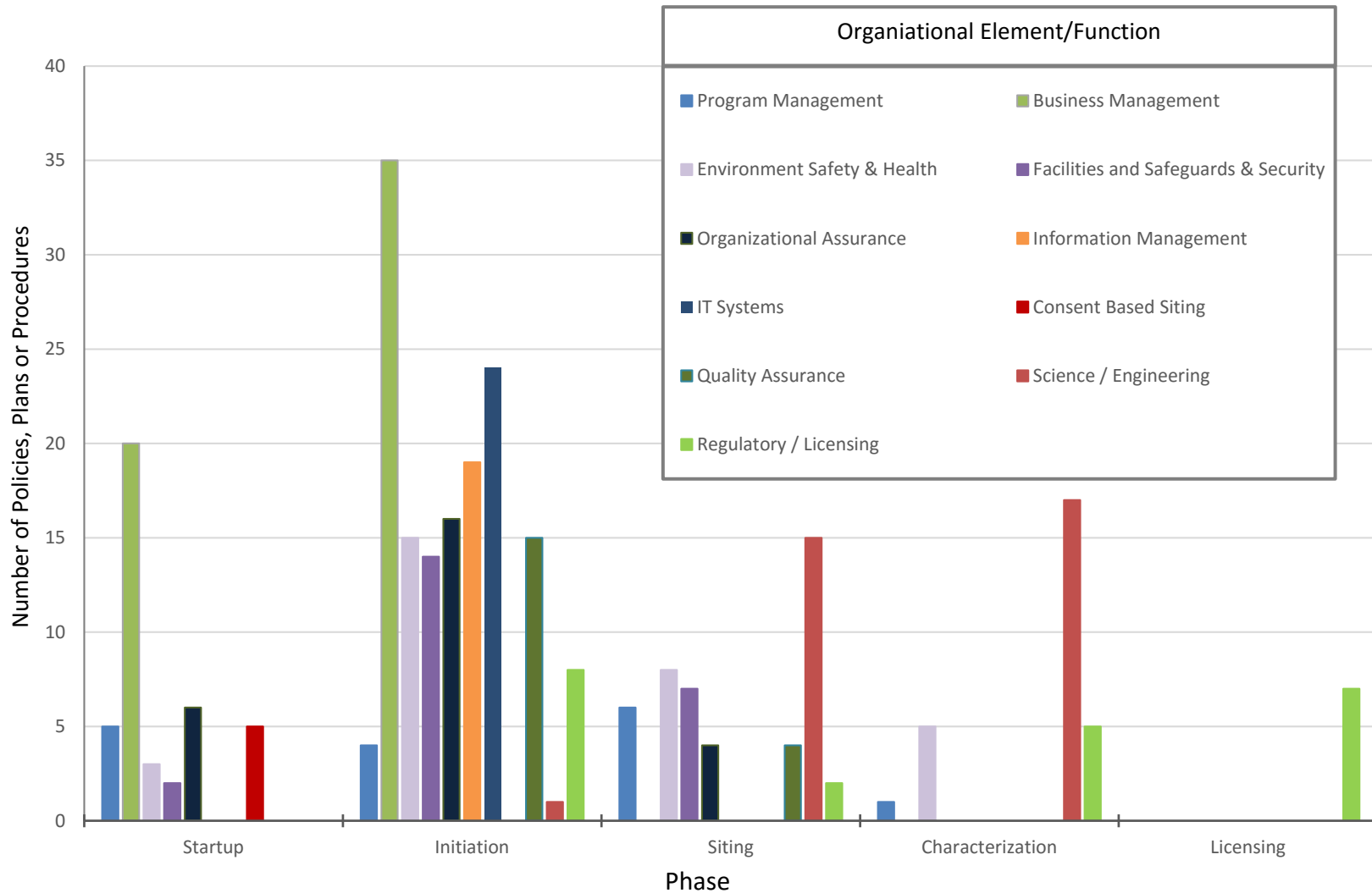
Figure 4.   Estimated Number of Policies, Plans, and Procedures by Phase
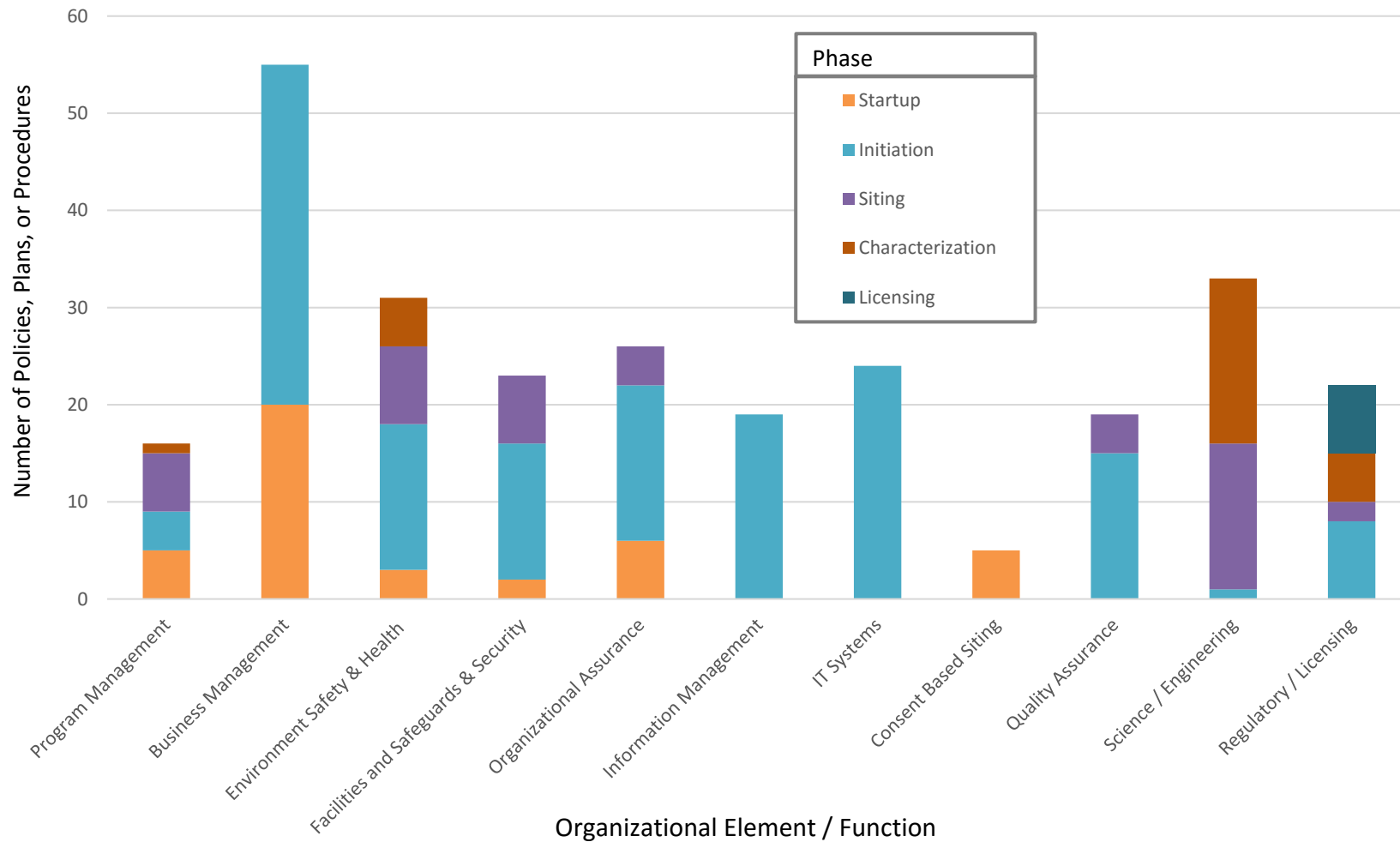
Figure 5.   Estimated Number of Policies, Plans, and Procedures by Organizational Element or Function

4.   Policies, Plans, and Procedures to be Developed by the RDO Organizational Elements

This section identifies the RDO organizational functions and provides a summary description of the policies, plans, and procedures will need to be developed to support and guide that capability. The discussion is therefore organized around the Organizational Elements, which correspond to those discussed in the *Draft Infrastructure Framework for a Generic Repository Development Organization* (SNL 2016). The discussion is a summary of Section 5 which consists of three tables that list the 273 policies, plans and procedures identified therein. Subject to the limitations detailed herein, these are a near-comprehensive listing of the policies, plans, and procedures needed for an RDO.

4.1   RDO Management

This section summarizes the policies, plans, and procedures that are established at the highest level in the organization, and are of foundational importance, setting the context and constraints for the organization's activities.

Vision, Mission, and Function Statements—These statements and policies frame the organizational principles and values that will demonstrate to the national and international technical and policy community that sound science and regulatory policy together provide for the safe long-term management of HLW and SNF from defense and DOE research and development activities.

RDO Management Plan and Organization Descriptions, Policies, and Procedures—These policies, plans, and procedures constitute the top-level description of how the effort is structured, identifying its functional elements and their general responsibilities and authorities. They will include the work breakdown structure (WBS) and dictionary, a milestone dictionary, and procedures for work authorization, acquisition planning, and enterprise reviews.

It will be essential to develop a broad-scope RDO Management Plan to provide the context for the entire effort. This plan describes how the enterprise intends to comply with DOE Orders, statutory requirements and applicable regulations, including DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. This plan should be sufficiently detailed for the organization in general to clearly understand what its tasks are, and in what regulatory context they are conducted. It should also generally identify the hierarchy of documents that provide guidance to the organization.

Regulatory Compliance Policies, Strategies, Plans, and Activities—These policies and plans describe how the organization intends to comply with applicable NRC and EPA requirements, among others, including, for example 10 CFR 21, Reporting of Defects and Noncompliance, and 10 CFR 60.10, Completeness and Accuracy of Information. These documents should be sufficiently detailed for the organization in general to clearly understand how it is expected to conduct its business with its regulators.

Integrated Safety Management Policy and Plan—This policy establishes safety expectations consistent with DOE P 450.4A, *Integrated Safety Management Policy*, and the plan outlines a strategy to ensure that safety is systematically integrated into management and work practices at all levels for the protection of workers, the public, and the environment.

Nuclear Safety Culture Policy—This is a policy, consistent with NRC's Final Safety Culture Policy Statement (76 FR 34773), Safety Conscious Work Environment (SCWE) expectations (NRC 2005), and SECY-04-0111, *Recommended Staff Actions Regarding Agency Guidance in the Areas of Safety Conscious Work Environment and Safety Culture* (NRC 2004), that clearly communicates to members of the organization the expected values and behaviors that serve to make nuclear safety an overriding priority.

Management Expectations Policies—These policies should be identified in the enterprise management plan and establish management expectations on the general conduct of work, including,

- Expectations on the use and adherence to procedures and on how procedures are to be used.
- Guidance to the organization regarding timeliness in the initiation and submission of CRs within the Corrective Action program.
- Using self-assessment to measure performance and identify areas for improvement, so that efficiencies, errors, oversights, or unintended consequences are identified and corrected at the earliest opportunity.
- Planning, performing, and reporting the results of quality assurance management assessments.
- Guidance of the use of risk assessment for identifying, tracking, and minimizing risks during the day-to-day activities of the organization.
- Responsibilities for identifying the need, conducting, and documenting readiness reviews.
- Guidance on a change management approach to transitioning individuals, teams, and organizations through programmatic changes.
- Guidance on disposition of differing professional opinions in support of a work environment that encourages workers to express their best professional judgment, even where those judgments may differ from the professional opinion of others or a management decision, and consistent with DOE Order 442.2, *Differing Professional Opinions for Technical Issues Involving Environmental, Safety, and Health Technical Concerns,* and NRC guidance (NRC 2002).
- Policies and guidance on the use of management stand-downs.

Internal and External Communications Policy—These policies provide guidance and establish protocols and authorities for internal communications, such as announcements and notices, and external communications, such as news releases, media response, and public information programs.

Integrated Interface Control Documents—These documents describe and identify controls for the interfaces between repository systems (including external inputs, as necessary). They help to bound requirements and allow various organizations to develop the subsystems with the independence necessary to work efficiently. One or more of these documents may be needed.

4.1.1   RDO Legal Counsel

RDO Legal Counsel customarily does not customarily operate to written enterprise-level procedures.

4.1.2   Quality Assurance

Quality Assurance Policy—The quality assurance (QA) policy establishes a comprehensive quality assurance policy and mandates the QA requirements for the appropriate work scope.

Quality Assurance Program Description and QA Requirements—The quality assurance program description and requirements documents outline the QA program and describes the approach the QA organization will utilize to implement and evaluate quality assurance requirements in accordance with DOE O 414.1d, *Quality Assurance*, and applicable NRC regulations (equivalent to 10 CFR 60.150). The ASME nuclear quality assurance standard, ASME NQA-1–2015, establishes the requirements for QA program for nuclear facilities, and may be supplemented with grading procedures, to implement a graded approach to QA controls for enterprise activities and a requirements matrix illustrating which QA requirements apply to various elements of the work. Distinctions should be made between activities important to safety or important to waste isolation and those not important to safety or important to waste isolation.

QA Policies and Requirements Development and Maintenance Procedures—These procedures establish the responsibilities and processes for maintenance of the organization's QA requirements, work description, and quality assurance requirements matrix.

QA Grading Procedure—This procedure establishes instructions for implementing a graded approach to QA controls for the organization's activities.

QA Audits and Surveillance Procedures—These procedures establish the processes for conducting and documenting QA surveillances performed by the organization. Surveillance is the act of observing real-time activities and/or reviewing documentation to verify conformance with specified requirements and to evaluate their adequacy and effectiveness. These procedures include processes that establish qualification of personnel conducting audits and procedures, including the responsibilities and process for the qualification of auditors and lead auditors; the maintenance of lead auditor proficiency; the indoctrination and qualification of technical specialists; and establish the process for scheduling, planning, performing, and documenting the organization's internal audits.

Stop Work Procedure—This procedure establishes the responsibilities and process for members of the workforce to stop work when warranted by a significant condition adverse to quality, and, once actions required to resolve the significant condition adverse to quality have been verified, for the Quality Assurance organization to authorize the resumption of work that has been stopped.

Nonconformance Reporting and Resolution Procedure—The procedure establishes a standard process for the organization to identify, report, control, disposition, and verify correction of nonconforming conditions. This process will also establish the interfaces among organizations or organizational elements to execute this process.

Supplier and Subcontractor QA Oversight, Evaluation, Surveys and Audits, and Condition Reporting and Resolution Procedures—These procedures outline responsibilities and processes for QA oversight of contractors and suppliers, including:

- The responsibilities and process for performing supplier and contractor QA program and performance evaluations, in procurement of services and products in support of the organization's activities
- The responsibilities and processes for documenting, evaluating, and resolving conditions adverse to quality up to and including stop work orders
- The responsibilities and process for performing QA supplier surveys/audits for the contractor and supplier organizations
- The responsibilities and methods for determining the acceptability and documenting the acceptance of products and services prior to use by the organization, and inspection and reporting requirements for suspect and counterfeit items

4.1.3   Public Engagement and Consent-Based Siting

Public engagement procedures are necessary to define, design and implement processes for public engagement in organization activities. Consent Based Siting is included in this organizational element; this process is expected to be designed based on the results of DOE's efforts to solicit public comment on it (80 FR 79872). It includes activities necessary to define, design, and implement processes to enable a phased, adaptive, and consent-based approach to siting waste management facilities. Interactions with DOE to formulate direction will undoubtedly yield the need for a variety of policies and procedures. Plans and procedures in this organization may include:

- A public engagement plan that describes how the effort's public engagement strategy is structured, identifying its functional elements and their general responsibilities
- Policies and procedures for participation of and interactions with industry groups, professional societies, news media, and the public, which outline protocols for communications including meetings, outreach, and sharing, and publications. If not addressed in another area, procedures for review of documents for public release may be managed in this organizational element, at least initially.
- Policies and procedures for intergovernmental interactions and community commitments
- Other procedures as needed to support consent-based siting processes yet to be determined

4.1.4   Regulatory/Licensing

This element addresses activities necessary to manage the regulatory support activities conducted by the organization, regardless of the regulator's identity (e.g., NRC, EPA, or State entities). The strategic response development for regulatory issues as well as the planning for and preparation for regulatory interactions are managed from this element. Working with RDO Management, this element will ensure consistency and coordination among other organizational elements during regulatory interactions and review proceedings.

Typically, there are two functions in this area: regulatory integration, and regulatory interactions. Regulatory integration entails coordination of regulatory activities among the various other organizational elements (e.g., science, engineering, transportation, and storage). Regulatory interactions provide the interface for support of DOE regulatory affairs, in interactions with regulators and responses to regulatory requests.

Regulatory Management Plan—This is a management plan that describes how the effort's regulatory strategy, with NEPA, NRC, EPA, and if appropriate, a State regulator, is structured, identifying its functional elements and their general responsibilities.

NEPA Compliance, Environmental Assessment, and Environmental Impact Statement Plans and Procedures—These plans and procedures establish roles, responsibilities, and processes for environmental impact statement development, consistent with DOE requirements under 10 CFR Part 1021, National Environmental Policy Act Implementing Procedures.

Site Characterization Plan—After a site is selected, this plan will outline a detailed approach to site characterization in accordance with Section 113 of the NWPA, including:

- A description of the site
- A description of site characterization activities
- Plans for the decontamination and decommissioning and for the mitigation of significant adverse environmental impacts caused by site characterization activities if it is determined unsuitable for use as a repository
- Criteria to be used to determine the suitability of the site as the location of a repository
- Other information required by the NRC

License Application Development, Management, and Support Plans—These plans outline the strategies for development, management, and support of the repository license application, as appropriate for each licensing stage, including roles and responsibilities and standards during development and later during updates and maintenance.

License Application Configuration Management, Change Control, and Update and Maintenance Procedures—The procedures define the processes to manage the NRC license application configuration, including activity evaluation and screening for license application impacts.

Regulatory Interaction Support Plan and Interaction Procedures—This plan describes how the organization will support regulatory interactions and reviews. The procedures will describe the protocols for interaction in appropriate detail.

Regulatory Response Development, Review, and Approval Procedure—This procedure establishes the process for responding to requests for additional information (RAIs) from the NRC and other regulatory agencies. It provides administrative controls to manage a large number of regulatory questions requiring responses within short time frames, and the steps for developing responses that are complete and accurate in all material respects.

Regulatory Information Validation Process Procedure—Regulatory documentation (both license materials and regulatory responses) need to be particularly exact, and this procedure defines the process and responsibilities for validating material statements being made in regulatory submittals.

4.2   Operations Management

The role of operations management is to coordinate Organizational Assurance, Business Management, Information Management, and Information Technology (IT) Systems activities. While it may develop procedures for its own use, most will be developed under its sub-elements.

4.2.1   Business Management

Business Management includes the activities that enable a workforce to accomplish its objectives using established work processes, and business management IT systems. The workforce and financial controls are supplied via business management processes.

Business Management Plan—This is a management plan that describes how the effort's business management strategy is structured, identifying its functional elements and their general responsibilities. It will have to identify linkages between enterprise business management processes and related parent or subsidiary organizations processes.

4.2.1.1   *Staffing and Human Resources*

Staffing and Human Resources Policies—These policies establish expectations for employment terms including work schedules and absences; compensation standards; overtime, holidays, and shift differential pay; business travel; drugs and alcohol policies; Equal Employment Opportunity, diversity, and affirmative action policies; workplace violence policies; ethics and business conduct policies; and hiring, employment, performance management and employee assessment; and employee separation policies.

Staffing and Human Resources Procedures—There may be numerous procedures that implement the HR policies and requirements, including processes for recruiting and hiring; performance management and employee assessment; and handling and protection of personally identifiable information (PII) and other HR documentation.

4.2.1.2   *Employee Concerns Program*

Employee Concerns Program Policies and Directives—These policies and directives establish the management expectations for roles and responsibilities in identifying employee concerns and outlining employees' rights to raise concerns, an important element of demonstrating an effective SCWE culture.

Employee Concerns Program Plan and Procedures—This plan describes how the enterprise's employee concerns program is structured, identifying its functional elements and their general responsibilities. The procedures outline the process for receiving and dispositioning employee concerns and reporting and responding to concerns raised in accordance with management and regulatory expectations.

4.2.1.3   *Financials/Funding*

This function provides for annual budgeting, including cost estimating, and fund management, including receiving and verifying the Approved Funding Program to meet government requirements under DOE Order 135.1, *Budget Execution—Funds Distribution and Control*. A suite of financial management and accounting policies and directives will provide a framework for its procedures.

4.2.1.4   *Procurement*

Acquiring material or services is necessary in performance of most similar endeavors. There is a very direct connection between QA and procurement when it comes to acquiring quality-affecting items or services. Procurement procedures include acquisition planning, proposal development, bid evaluation,

subcontracting, purchasing, commitment authorization, subcontract technical representative qualification and authorization, and procurement documentation procedures.

4.2.1.5   Project Controls

The project controls function provides for establishing a WBS, which provides a structure for planning, managing, controlling, and monitoring the cost, schedule and performance of a project. Typically, this function is responsible for establishing and certifying an Earned Value Management System (EVMS) for the effort.

Project Controls and Earned Value Management System Policy and Plan—This policy and plan outlines the establishment and application of an integrated management system with coordination of work scope, schedule, and cost objectives and application of earned value methods (DOE G 413.3-10A, *Earned Value Management System (EVMS)*) for enterprise planning and control.

Project Controls Procedures—These procedures establish the processes and responsibilities for the development, integration, tracking, and reporting of schedules, resources, and budgets within the organization.

4.2.1.6   Training

The training function is integrally tied to the enterprise's operations and Quality Assurance activities. Members of the workforce must be trained to perform certain functions as part of a high-quality, regulation-aware business and technical team.

Training Program Description and Plan—This is a management plan that describes how the training program is structured, identifying its functional elements and their general responsibilities. It outlines the training processes and procedures, and includes a clear definition of requirements and reflects implementation of a systematic approach to training.

Training and Qualification Policy—This policy is designed to ensure employees possess the necessary knowledge and skills to effectively perform their jobs. This will include auditable records of employee training, as required, and will implement State and federally mandated training as well as DOE mandated training.

Training Analysis, Design, and Development Procedures—These procedures provide a process for determining training needs and requirements from regulatory drivers, management requests, enterprise procedures, and performance issues; identifying training sequences and learning objectives; and identifying necessary changes and updates to the training program and its courses.

Training Presentation and Evaluation Procedures—These procedures provide the processes for the implementation of training modules and the evaluation of training materials, students, and instructors, including computer-based training modules.

4.2.1.7   Facilities and Safeguards & Security

At every phase of the effort, property will be necessary to achieve its objectives. Facility functions are directed at the post-purchase (or lease) management needs for various properties. Emergency Management is a key function that may be assigned either within the Facilities and Safeguards & Security organization or as a separate entity, but it is addressed here.

Emergency Management Policy and Plan—This description provides guidance for the response to and mitigation of an emergency situation (to include accidents, incidents, or natural phenomena that degrade the safety or security of any off-site building/facility) at off-site locations of the organization through the formation and maintenance of an Emergency Management program.

Emergency Response Plans and Procedures—This plan establishes the responsibilities and processes to comply with requirements found in the organization's safety manual. The procedures address incident,

accident, and emergency response roles, responsibilities, and protocol; accident notification and investigation processes; emergency preparedness, including drills and exercises; and hazards assessment and protective actions.

Safeguards & Security Plans and Procedures—These plans establish the security requirements necessary for the organization to be consistent with DOE policies (e.g., DOE O 470.4B, *Safeguards and Security Program*). The procedures address badging and access control; operations security planning, assessment, and review; security system testing; emergency, accident, and incident response and incident management and reporting; and critical enterprise information identification and protection procedures.

Miscellaneous Facilities Policies, Plans, and Procedures—Other procedures may include employee directory maintenance and office moves procedures, property management policies and control procedures, facilities policies and standards, subcontractor property custody procedures, leasing, and motor vehicle fleet management and operations procedures.

4.2.1.8   Environment, Safety, and Health

The environment, safety, and health function ensures that safety is systematically integrated into management and work practices at all levels for the protection of workers, the public, and the environment. DOE regulations under 10 CFR Part 851, Worker Health and Safety Program, establish many of its requirements. The integrated safety management policy and plan is developed as part of RDO Management, as described in Section 0. Within that framework, consistent with DOE P 450.4A *Integrated Safety Management Policy*, additional plans and procedures will be developed as described below.

Policies and Procedures for Occupational Safety and Health Program, Worker Protection, and Worker Rights and Responsibilities—These policies establish the expectations, strategies, and worker rights and responsibilities under the occupational safety and health and worker protection programs. The procedures developed for these programs include:

- Health protection, inspections, reporting, and audit procedures
- Medical needs analysis procedures
- Investigation and reporting procedures for incidents, accidents, and near misses
- Review, approval, and documentation of review of contractor worker safety and health program documents required by 10 CFR Part 851 and safety and health oversight procedures
- Hazard analysis and communication procedures
- Occupational safety and health procedures
- Respiratory protection and industrial hygiene procedures
- 10 CFR Part 851 noncompliance determination and reporting process procedures

Policies and Procedures for Environmental Protection and Environmental Compliance—These policies and procedures establish the expectations and processes for environmental protection and compliance with environmental requirements and regulations.

4.2.2   Organizational Assurance

Organizational Assurance includes the activities necessary to oversee the organization's operational and functional fidelity to ensure integration and appropriate conduct of operations, including the concepts and activities listed below.

4.2.2.1   Nuclear Safety Culture

A policy consistent with NRC's *Final Safety Culture Policy Statement* (76 FR 34773) will be developed as part of RDO Management, as described in Section 0. Organizational Assurance will develop procedures as needed to oversee and implement the policy.

4.2.2.2   Safety Conscious Work Environment

A policy consistent with NRC's SECY-04-0111, *Recommended Staff Actions Regarding Agency Guidance in the Areas of Safety Conscious Work Environment and Safety Culture* (NRC 2004), will be developed as part of RDO Management, as described in Section 0. Organizational Assurance will develop procedures as needed to implement and oversee the SCWE program.

4.2.2.3   Corrective Action Program

The Corrective Action program function develops and implements the organization's corrective action program and system consistent with current regulatory guidance.

Corrective Action Program System Policy and Procedures—These policies and procedures establish the process for the organization to identify issues and to develop and implement a corrective action program and system consistent with current regulatory guidance. The procedures will outline the process for condition reporting, analysis, extent of condition, resolution, documentation, and closure.

4.2.2.4   Requirements Management

Requirements Management develops and implements the organization's requirements management effort and process consistent with current organizational policy. It provides a means to identify, record, allocate, and track the implementation of the effort's requirements.

Requirements Management Program Description—The description elaborates on how the requirements management program is structured, identifying its functional elements and their general responsibilities.

Requirements Management Procedures—The procedures establish responsibilities and processes for the identification of requirements for work planning, management of internal constraints, evaluation of risk associated with requirements allocation for implementation of controls, and tracing of requirements to work managed by the organization.

4.2.2.5   Commitments Management

This function is responsible for the development and implementation of a commitment management process to facilitate the tracking and resolution of the organization's commitments, whether they originate in enterprise policies, administrative directives, or technical or regulatory instruction. It provides a means to record and track resolution of items identified by management.

4.2.2.6   Self-Assessment and Lessons Learned

The self-assessment function is to develop and implement the organization's process to regularly perform self-assessments consistent the management policy on self-assessment (Section 0) and other quality assurance and regulatory requirements. Self-assessments are integral to most organizational assurance functions, as they provide the means by which the enterprise evaluates and documents its conformance with management expectation and procedural requirements. The lessons learned function may be associated with the self-assessment program or it may be independent; in either case, lessons learned must be also identified outside of and managed separately from the self-assessment function. Operating experience may be associated with the licensing organization or with the lessons-learned function; in either case, lessons learned from operating experience must be collected into the lessons-learned program.

Self-Assessments and Management Observations Procedures—These procedures establish the process for scheduling, preparing, performing, and reporting self-assessments. This is intended to promote a self-critical culture by proactively identifying areas for improvement in processes, practices, behaviors, roles, responsibilities, and organizational expectations. They may include procedures for self-assessments, management and organizational observations, readiness reviews, and independent assessments. Trends

may be addressed within the self-assessment program function, or it may be addressed with separate activity descriptions and procedures.

Lessons Learned and Operating Experience Policies and Procedures—These policies describe the expectations and responsibilities associated with the operating experience and lessons learned program(s). The procedures identify how operating experience and lessons learned will be collected, documented, managed, and reported.

4.2.2.7 Risk Management

Risk management develops and implements the organization's general programmatic risk evaluation and management processes, consistent with management policy on risk management (Section 0).

Risk Management Plan and Procedure—The risk management plan describes how the risk management program is structured, identifying its functional elements and their general responsibilities, and the procedures processes for conducting and documenting risk assessments.

4.2.2.8 Knowledge Management

The Knowledge Management function is responsible for development and implementation of the organization's effort directed at compiling, organizing, leveraging, and preserving the organization's knowledge base(s) to support organizational goals and anticipated future needs. Knowledge Management has two principal functions. The first is to provide processes designed to ensure the promulgation of current information to the workforce and the second is to provide long-term historical record of enterprise participants and developments. The nuclear operating experience program functions may reside within the overall Knowledge Management function.

Knowledge Management Plan and Procedures—The management plan describes how the knowledge management effort is structured, identifying its functional elements and general responsibilities. The procedures will establish the process that implements and maintains the knowledge management program.

Operating Experience Program Procedures—These procedures define the responsibilities and establish the process for identifying, documenting, validating, communicating, and identifying actions to be taken on positive and negative experiences originating from within the organization, as well as from the broader nuclear industry.

4.2.3 Information Management

Information Management includes activities that enable a workforce to accomplish its objectives using enterprise-wide information control processes and using IT systems. In includes records management, document development, document control, technical data management, and Licensing Support Network (LSN) functions.

4.2.3.1 Records Management

Records Management Policy—The policy describes the management expectations for identification, creation, maintenance, and disposition of organization records.

Records Management Plan—This plan describes the enterprise's overall direction on managing records including the process for identification, creation, maintenance, and disposition of enterprise records. The enterprise Records Retention and Disposition Schedule is developed as part of this plan. The plan should be developed to be consistent with DOE Order 243.2B, *Records Management Program*, and 36 CFR Chapter XII, Subchapter B, Records Management.

Records Management Procedure—The procedure describes the process for the identification, creation, maintenance, disposition, screening, and indexing of the organization's records.

Managing Electronic Mail Records Procedure—The procedure provides direction for creating and dispositioning electronic mail (e-mail) messages generated by members of the organization including e-mail received from outside the organization. This process must meet updated federal requirements for email records outlined by the National Archives and Records Administration (NARA) in *Criteria for Managing Email Records in Compliance with the Managing Government Records Directive (M-12-18)* (NARA 2016).

Control and Management of Electronic of Information Procedure—The procedure establishes the responsibilities and provides direction for developing and evaluating the adequacy of process controls on specific uses of electronically stored information. The use of records management systems that meet the functional requirements of Department of Defense standard, DoD 5015.2-STD, *Electronic Records Management Software Application Design Criteria Standard*, satisfies these requirements.

4.2.3.2   Correspondence Control

The correspondence control procedure will describe a process for providing centralized transmittal and receipt of official enterprise correspondence coupled with electronic distribution of mail.

4.2.3.3   Document Development

Document and Publications Development Policies and Procedures—These policies outline the categories and purposes of enterprise documents, and establish roles and responsibilities in the development of each type. The procedures establish processes for development, review, and approval appropriate for various document types, and set requirements and processes for document formats and electronic development and publication standards.

Preparing and Approving Enterprise-Wide Procedures—The procedure establishes the process and defines responsibilities for preparing, reviewing, approving, revising, changing, and cancelling procedures that apply across the organization.

Enterprise-Wide Reports Procedures—The procedure establishes the responsibilities and process for the preparation, review, approval, change, correction, and revision of technical and not-technical reports related to the organization's activities.

Enterprise-Wide Document Review Procedure—The procedure provides a process for conducting and documenting reviews of documents (including technical, quality assurance, management, and data submittals) and the preparation and resolution of review comments.

NRC Electronic Document Submittal Requirements Procedure—This procedure outlines the process for producing documents and confirming that they are in compliance with NRC's submittal requirements under 10 CFR Part 2 and its *Guidance for Electronic Submissions to the NRC* (NRC 2011).

Procedures for Identification, Protection, and Control of Sensitive and Classified Information—These procedures set constraints on and processes for identifying, protecting, access, distribution, and use of sensitive unclassified and classified information.

Policy for Review and Approval for Release of Products to the Public—The policy explains the process for reviewing products developed by the organization prior to distribution or presentation to the public.

4.2.3.4   Reference Registry

The reference registry is a system that tracks and manages inputs and references to project products. Reference registry processes and systems for documenting of information used in support of the repository licensing basis is critical to ensuring the integrity of enterprise documents at the level required to support regulatory and litigation challenges. Many thousands of references will be cited in documentation produced to support the effort, consisting of internally generated sources as well as

external sources of both public domain and copyrighted information. This procedure will identify the process and constraints for tracking and managing technical products and references in a reference registry.

4.2.3.5   Document Control

Document Control is an element of records management providing for the necessary control and distribution of certain documents, both technical products and work controls like policies and procedures essential to conduct of operations.

Document Control Procedures—The procedures establish the process and responsibilities for the identification, submittal, release, distribution, and disposition of controlled and associated change documents. These controls ensure that documents are approved for release and available at the location for use. The procedures must include document control processes for supplier and subcontractor documents, as appropriate.

4.2.3.6   Data Management

Technical data management procedures provide a process specifically designed to handle the special needs of technical data management, which involves large complicated electronic files that must be managed in a fashion that preserves their integrity and usability. A data submittal procedure establishes the responsibilities and processes for submitting and incorporating data packages into the technical data management system.

4.2.3.7   Licensing Support Network

The LSN is a critical element of records management that provides processes and protocols designed to satisfy the procedural requirements of 10 CFR 2, subpart J of NRC's licensing rules.

LSN Certification Plan—The purpose of this plan is (1) to provide the methodology and schedule to verify that the organization is in compliance with LSN requirements; and (2) to describe the basis for the organization's LSN certification.

LSN-Relevant Records Management Procedure—The procedure provides enterprise-wide direction for identifying and submitting LSN-relevant records. It also provides direction on the preparation of monthly reports on timely submittal of LSN-relevant records.

4.2.4 IT Systems

The Information Technology (IT) Systems function includes activities necessary to define, design, implement, and maintain IT systems to support the organization's processes and functions. Systems developed to support the technical effort and the business support efforts are critically important to the overall success of the project. They generally fall into two categories: (1) information systems, and (2) high performance computing systems.

IT Systems Policy and Network / Collaborative Systems Plan—The IT systems policy and network systems plan describes the organization's approach to establish collaborative electronic system(s) to support information access, workflow, approvals, constraints, and communication capability with both internal and external entities. The general approach to high performance computing systems should also be described in the plan.

IT Security Plans and Procedures—The plans and associated procedures establish IT security requirements necessary for the organization to be consistent with applicable policies for enterprise system security and cyber security, including incident reporting, media clearing, purging, and destruction, software patches and updates, and certificate management processes and requirements.

User Account Management and Access and Asset Management Procedures—These procedures outline the processes that control user accounts, information access management, and IT resource management, including mobile devices.

Software Management Plans and Procedures—These plans and procedures establish the process, identify roles, and define responsibilities for management of software used in support of the organization's day-to-day support activities, as well as its scientific and engineering scope. Software used in important to safety/important to waste isolation activities should receive special attention. These plans and procedures should also outline the software quality assurance approach for software life cycle management, including software planning and development processes, change control, and the software configuration management system.

Software Qualification Procedure—The procedure establishes the responsibilities and processes for activities (requirement phase, design phase, testing phase, and implementation phase of software life cycle management) constituting the organization's software qualification process.

4.3   Science / Engineering

Policies, plans, and procedures for science and engineering are usually highly specific to the work being undertaken. However, several categories of policies, plans, and procedures are generally applicable to science and engineering activities and should be anticipated.

4.3.1   General Science and Engineering Policies and Procedures

Some procedures may address technical activities in both the science and engineering areas, depending on strategies determined as the organization is established. They are described in this section; others that are more likely to be considered unique to the science or engineering disciplines are described in the subsequent sections.

Work Planning Procedures—The procedure establishes responsibilities and process for preparation, review, approval, revision, cancellation, control, and distribution of technical work plans for the organization's science and engineering activities.

Preparing and Approving Technical Procedures—The procedure establishes the process and defines responsibilities for preparing, reviewing, approving, revising, changing, and cancelling technical procedures for science and engineering activities.

Technical Reports Procedures—The procedure establishes the responsibilities and process for the preparation, review, approval, change, correction, and revision of technical reports related to the organization's science and engineering activities.

Document Review Procedure—The procedure provides a process for conducting and documenting reviews of documents (including technical, quality assurance, management, and data submittals) and the preparation and resolution of review comments.

4.3.2   Science Disciplines Policies and Procedures

The procedures in this section are those that are specific to or will be overseen by the science organization.

Peer Review Procedure—The procedure establishes the responsibilities and methods for planning, conducting, and documenting peer reviews consistent with the guidance in NUREG-1297, *Peer Review for High-Level Nuclear Waste Repositories* (NRC 1988).

Expert Elicitation Procedure—The procedure establishes the responsibilities and methods for planning, conducting, and documenting expert elicitation projects consistent with the guidance in NUREG-1536, *Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program* (NRC 1996). This procedure implements QA requirements and presents a consistent and systematic

approach that will ensure that the results obtained from an expert elicitation accurately reflect what is known and not known about the topic in question.

Qualification of Data Procedure—The procedure establishes the responsibilities and process to be used for the qualification of data generated outside the context of the enterprise's QA program. This does not apply to established fact data or numerical data obtained from an established/authoritative data source.

Scientific Analysis and Calculations Procedure—Establishes the responsibilities and the process for the preparation, review, approval, change, correction, and revision of scientific analysis and calculation reports supporting the organization's science and engineering activities.

Models Procedure—The procedure establishes the responsibilities and process for the preparation, review, approval, change, correction, and revision of model reports supporting the organization's science and engineering activities.

Analysis Reports Procedure—The procedure establishes the process and responsibilities for developing analyses that do not change the technical baseline without proper notice. This procedure is intended for use to assess the impact of new scientific information and evaluate or analyze the potential effects of proposed design or requirement changes.

Technical Interface Control Procedure—The procedure establishes the process and responsibilities for controlling design interfaces.

Control of Measuring and Test Equipment Procedure—The procedure establishes the responsibilities and process for the identification, control, calibration, storage, and maintenance of measuring and test equipment.

Scientific Notebooks Procedure—The procedure prescribes requirements for the preparation and use of Scientific Notebooks to document repository scientific investigations, subject to the organization's QA requirements.

Data Acquisition Procedure—The procedure describes the process for collecting and documenting electronic data from various data acquisition systems.

Site Work Authorization and Control Procedures—The procedures establish processes necessary to authorize, integrate, and control work activities, including tests, surveillance, and maintenance at a site and to provide guidance for developing implementing documents.

Site Access Training Procedure—The procedure identifies governing requirements and procedures for access to a site.

Site Security and Access Procedure—The procedure controls the process for protection of and access to repository site to minimize adverse impacts.

Testing Work Implementation and Control Procedures—These procedures establish the responsibilities and processes for planning, enabling, and controlling the safe conduct of tests related to work activities. This ensures field and applicable laboratory work is authorized, documented, approved, and implemented consistent with applicable quality requirements, technical standards, administrative controls, and hazard controls. These procedures may include processes and responsibilities for a variety of site and laboratory testing, including, for example: seismic network operations, metrological monitoring and precipitation analysis, sample management, geophysical analysis, water analysis, equipment calibration and control, mapping, reportable geologic conditions, and tracer, fluids, and materials data reporting and management.

4.3.3   Engineering Discipline Policies and Procedures

Design Authority Policies and Procedures—These policies and procedures establish the strategic and management roles and responsibilities for repository engineering, and the coordination and control of design decisions.

Policies and Plans for Design and Engineering Programs—These policies establish objectives, general requirements, roles, and responsibilities for the programs including:

- Constructability and Operability program
- Fire Protection program
- ALARA program
- Systems Engineering and Value Engineering programs

Integrated Design Development Process Procedures—These procedures outline processes to ensure the integrated and coordinated development of the repository design. They may include aspects of the various engineering programs and development processes such as management design reviews, design guides and checklist, and drawing standards.

Engineering Personnel Qualification Procedures—This procedure describes roles and responsibilities for ASME Code qualification for engineering personnel.

Measurement Units Policy—This policy provides a standard for units of measure to be used in design, fabrication, construction, component testing, and operation.

Engineering Document Development Review and Approval Procedures—These procedures describe the process for the development of engineering, design, and preclosure safety analysis reports, performance specifications, calculations, design guides, and drawings, and set drawing standards.

Engineering Subcontractor and Supplier Management Procedures—The procedures establish roles and responsibilities for contractor and supplier oversight.

Deficiencies and Nonconformances Disposition Procedures—These procedures outline roles, responsibilities, and processes for testing of engineered items and systems and for disposition of deficiencies and nonconformances.

4.3.4   Waste Inventory and Acceptance

This management group is responsible for planning and coordinating waste inventory and waste acceptance and maintaining agreements between, for example, DOE offices, the Naval Nuclear Propulsion Program, and commercial waste custodians. Their plans and procedures address the roles and responsibilities and processes for preparing and managing those agreements and for material shipment preparation, shipment approval, and acceptance.

5.   Procedure Development and Timeline Phases

The 273 policies, plans, and procedures listed in this section represent a near-comprehensive summary list of the procedures needed for an RDO.

Consistent with the approach of a phased, adaptive, and consent-based approach to siting waste management facilities, the repository development organization will be established incrementally, in phases that reflect its purposes and requirements over time. The indicated development phases (i.e., Startup, Initiation, Siting, Characterization, and Licensing) are intended to show the phase in which the procedures would need to be established because of the work ongoing or the requirements likely to be established during that phase. Therefore, the procedures are products of, not prerequisite to, the phase indicated. (Note that later phases, construction and operation, are not addressed in this report.)

The organizational association indicates the organizational ownership and authority for each procedure, using the organizational structure outlined in this report. As the organization is established and as it evolves over time, these authorities may vary from what it outlined here. In many cases, additional procedures will be needed within organizations to implement procedures owned elsewhere. For example, procurement groups and science and engineering organizations may need implementing procedures that provide detail to records management responsibilities established and controlled by the records management authority (i.e., the Information Management organization).

In addition, the listed procedures reveal some purposeful redundancy that arises from organizations' cross-functional roles; however, not all such possible cases are included. Similarly, though some procedures for supplier oversight are included, having been considered inevitably necessary by requirement or required for contingency (e.g., QA oversight and engineering oversight of vendors and suppliers), there may be other areas where such oversight procedures may be needed depending on future contracting, procurement, and organizational decisions, but they have not been included here.

Finally, the list does not include the kind of task-level instruction work control documents that may be useful in guiding workgroups; the need for this kind of procedural instruction will be dependent on technologies, tools, and workgroup sizes and structures that cannot now be anticipated, so this type of procedure was not included. There are other documents and reports to be developed as products of the repository development effort (most notably, the License Application and other reports required by law), but this report only outlines the plans; for example, the site characterization plan required by Section 113 of the NWPA is included, but the waste form and packaging report and the conceptual design report required there are not.

5.1   Procedure Development, Summarized by Organization and Phase

Table 1 summarizes the 273 policies, plans, and procedures by the phase in which they would likely be developed. The procedures are grouped by development phase and by organization in two separate tables, Policies, Plans, and Procedures List, by Organization

Table 2 and Policies, Plans, and Procedures List, by Phase

Table 3, provided in Sections 5.2 and 5.3, respectively, which are lists organized by organization and by phase of development.

Table 1. Procedure Development, Summarized by Organization and Phase

	Startup	Initiation	Siting	Characterization	Licensing	Total, by Organization
RDO Management	5	4	6	1	0	16
Business Management	20	35	0	0	0	55
Environment Safety & Health	3	15	8	5	0	31
Facilities and Safeguards & Security	2	14	7	0	0	23
Organizational Assurance	6	16	4	0	0	26
Information Management	0	19	0	0	0	19
IT Systems	0	24	0	0	0	24
Consent Based Siting	5	0	0	0	0	5
Quality Assurance	0	15	4	0	0	19
Science / Engineering	0	1	15	17	0	33
Regulatory / Licensing	0	8	2	5	7	22
Total, by Phase	41	151	46	28	7	273

5.2   Policies, Plans, and Procedures List, by Organization

Table 2. Policies, Plans, and Procedures List, by Organization

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
RDO Mgmt.	Mission, Vision, and Functions Policy Statements	X				
RDO Mgmt.	Organization Description and Authorities Policies and Procedures	X				
RDO Mgmt.	Procedures and Work Instructions Use and Adherence Policies and Instructions		X			
RDO Mgmt.	Management Stand Down Procedures		X			
RDO Mgmt.	Internal and External Communications Policy	X				
RDO Mgmt.	Environmental Protection and Compliance Policy		X			
RDO Mgmt.	Integrated Interface Control Documents				X	
RDO Mgmt.	Policies, Procedures, Work Instructions and Guidance Development, Review, and Approval Procedures		X			
RDO Mgmt.	Quality Management Policies	X				
RDO Mgmt.	Nuclear Safety Culture and Safety Conscious Work Environment Policy	X				
RDO Mgmt.	Waste Acceptance System Requirements Document			X		
RDO Mgmt.	Waste Management System Requirements Document			X		
RDO Mgmt.	Transportation System Requirements Document			X		
RDO Mgmt.	Integrated Enterprise Management Description			X		
RDO Mgmt.	Requirement Document Preparation and Approval Procedures			X		
RDO Mgmt.	Requirement Document Preparation Plans			X		
Business Mgmt.	Employee Concerns Program Policy	X				
Business Mgmt.	Employee Concerns Program Procedures		X			
Business Mgmt.	Financial Management and Accounting Policies	X				
Business Mgmt.	Financial Management and Accounting Procedures		X			
Business Mgmt.	Human Resources Management Policy	X				
Business Mgmt.	Employment Policies	X				

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Business Mgmt.	Workplace Separation, Severance Pay, Departing Employees, and Employee Death Procedures		X			
Business Mgmt.	Workplace Substance Abuse Program Policies and Plans		X			
Business Mgmt.	Equal Employment Opportunity and Affirmative Action Policies	X				
Business Mgmt.	Anti-Harassment and Anti-Discrimination Policies	X				
Business Mgmt.	Workplace Violence Policies	X				
Business Mgmt.	Ethics and Business Conduct Policies	X				
Business Mgmt.	Freedom of Expression and Appeals Policies		X			
Business Mgmt.	Performance Management & Employee Assessment Policies		X			
Business Mgmt.	HR Procedures for Protection and Transmission of Protected Personally Identifiable Information	X				
Business Mgmt.	Internal Audit Policy and Procedures		X			
Business Mgmt.	Earned Value Management System Policy and Description		X			
Business Mgmt.	Project Controls and Baseline Management Policy	X				
Business Mgmt.	Project Controls Plan		X			
Business Mgmt.	Project Controls Integrated Planning Procedures		X			
Business Mgmt.	Earned Value Management Procedures		X			
Business Mgmt.	Project Controls Cost Estimating, Metrics and Trending, and Reporting Procedures		X			
Business Mgmt.	Work Planning and Baseline and Schedule Development and Management Procedures		X			
Business Mgmt.	Project Controls Change Control Procedures		X			
Business Mgmt.	Project Controls Baseline and Work Authorization Procedures		X			
Business Mgmt.	Project Risk and Opportunity Management Procedures		X			
Business Mgmt.	Project Controls Organizational and Work Breakdown Structure Implementation Procedures		X			
Business Mgmt.	Project Management Policy	X				
Business Mgmt.	Project Management Plan		X			
Business Mgmt.	RDO Work Breakdown Structure (WBS) and Milestones Dictionary		X			

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Business Mgmt.	Project Work Authorization Procedures		X			
Business Mgmt.	Acquisition Planning		X			
Business Mgmt.	Project Reviews		X			
Business Mgmt.	Procurement Actions, Requisitions, and Controls Procedures	X				
Business Mgmt.	Request for Proposal Development Procedures	X				
Business Mgmt.	Bid Receipt, Evaluation, Recommendation and Award Procedures	X				
Business Mgmt.	Subcontract and Purchase Order Management Procedures		X			
Business Mgmt.	Procurement Documents, Forms, and Records Procedures		X			
Business Mgmt.	Adjustments, Delays and Extensions, and Incentives Procedures		X			
Business Mgmt.	Procurement Compliance Procedures (incl. Federal Acquisition Regulation (FAR), Davis-Bacon Act, etc.)	X				
Business Mgmt.	Formation and Administration of Other Agreements and Subcontract Types (National Labs, etc.)	X				
Business Mgmt.	Subcontract Technical Representative Qualification, Appointment, and Responsibilities Procedures		X			
Business Mgmt.	Purchasing of Commercial Items and Services and Purchasing Card Procedures		X			
Business Mgmt.	Statements of Work, Specifications, and Purchase Descriptions Procedures		X			
Business Mgmt.	Project Acquisition Planning Procedures		X			
Business Mgmt.	Commitment Authorization and Commitment Register Procedures	X				
Business Mgmt.	Training and Qualification Policy	X				
Business Mgmt.	Training Program Description and Plan		X			
Business Mgmt.	Training Requirements Management Policies and Plan	X				
Business Mgmt.	Training Development, Needs Analysis, Implementation and Evaluation Procedures		X			
Business Mgmt.	Training Management Plan	X				
Business Mgmt.	Personnel Training and Qualification Procedures		X			
Business Mgmt.	Procedures Training Program Policies and Plan		X			
Business Mgmt.	Education Tuition Assistance Policies and Procedures		X			

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Business Mgmt.	External Training & Conferences Policies and Procedures		X			
ES&H	Emergency Management Policy and Program Plan	X				
ES&H	Emergency Management Plan		X			
ES&H	Emergency Operations Center Plans and Procedures		X			
ES&H	Incident, Accident, and Emergency Response Procedures		X			
ES&H	Accident Notification and Investigation Procedures		X			
ES&H	Emergency Preparedness Procedures		X			
ES&H	Emergency Response Teams, Roles and Responsibilities Procedures		X			
ES&H	Emergency Management Hazards Assessment and Protective Actions Procedures		X			
ES&H	Emergency Management Drills and Exercises Procedures		X			
ES&H	Environmental Management System Requirements Document		X			
ES&H	Environmental Management System Processes Procedures		X			
ES&H	Environmental Exposures and Protection Policies		X			
ES&H	Environmental Exposures and Protection Plans and Procedures				X	
ES&H	Storm water Permitting and Inspections Procedures				X	
ES&H	Environmental Sampling Procedures				X	
ES&H	Land Access and Environmental Compliance Procedures			X		
ES&H	Hazardous Material and Hazardous Waste Management and Transportation Procedures				X	
ES&H	Environmental Baseline Review Procedures			X		
ES&H	Environmental Permitting and Compliance Procedures			X		
ES&H	Pollution Prevention Procedures		X			
ES&H	Environmental Observations Procedures				X	
ES&H	Occupational Safety, Worker Protection, and Other Health Programs and Policies	X				
ES&H	Health Protection, Inspections, Reporting, and Audit Procedures			X		

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
ES&H	Medical Needs Analysis Procedures			X		
ES&H	Review, Approval, and Oversight of Contractor Worker Safety and Heath		X			
ES&H	Investigation and Reporting Procedures for Incidents, Accidents, Near Misses, etc.			X		
ES&H	Hazard Analysis and Communication Procedures		X			
ES&H	Occupational Safety and Heath Procedures		X			
ES&H	Respiratory Protection Procedures			X		
ES&H	Industrial Hygiene Procedures			X		
ES&H	10 CFR 851 Noncompliance Determination and Reporting Process Procedures	X				
Facilities/S&S	Facility Work Control Procedures			X		
Facilities/S&S	Employee Status Change and Moves Procedures		X			
Facilities/S&S	Facilities Use and Scheduling of Conference Rooms Procedures		X			
Facilities/S&S	Facilities Standards Procedures		X			
Facilities/S&S	Light Duty Motor Vehicle Fleet Management and Operations Procedures			X		
Facilities/S&S	Physical Assets Maintenance and Surveillance Procedures			X		
Facilities/S&S	Operations Work Control Management Policy			X		
Facilities/S&S	Operations, Site Control, Work Control Procedures			X		
Facilities/S&S	Facility Operations Transportation Policy			X		
Facilities/S&S	Operations Procedures: Transportation, Packaging, Labeling, and Shipping, Incl. Hazardous Materials			X		
Facilities/S&S	Property and Assets Management Policy and Plans	X				
Facilities/S&S	Property Control Procedures		X			
Facilities/S&S	Procedures for Oversight, Inventory, and Disposal and Disposition of Government Property in Custody of Contractors and Subcontractors		X			
Facilities/S&S	Shipping, Receiving, Handling, and Acceptance of Materials Procedures		X			
Facilities/S&S	Real Estate and Facilities Leasing Procedures		X			
Facilities/S&S	Safeguards and Security Management Program Policies	X				

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Facilities/S&S	Badging and Access Control Procedures		X			
Facilities/S&S	Operations Security Procedures		X			
Facilities/S&S	Operations Security Planning, Assessment, and Review Procedures		X			
Facilities/S&S	Security System Testing Procedures		X			
Facilities/S&S	Security Incident Management and Reporting Procedures		X			
Facilities/S&S	Emergency, Accident, and Incident Security Response Procedures		X			
Facilities/S&S	Critical Information Identification and Protection Procedures		X			
Org. Assurance	Corrective Action Program Policies	X				
Org. Assurance	Condition Reporting, Resolution, and Documentation Procedures		X			
Org. Assurance	Deliverable Review Procedures		X			
Org. Assurance	Differing Professional Opinion Resolution Procedures		X			
Org. Assurance	Integrated Safety Management Policy	X				
Org. Assurance	Integrated Safety Management Plan		X			
Org. Assurance	Knowledge Management Plan	X				
Org. Assurance	Knowledge Management Procedures		X			
Org. Assurance	Operating Experience and Lessons Learned Policies	X				
Org. Assurance	Lessons Learned Reporting and Documentation Procedures		X			
Org. Assurance	Policies, Procedures, Work Instructions and Guidance Development, Review, and Approval Procedures	X				
Org. Assurance	Change Management Policies and Procedures		X			
Org. Assurance	Project Initiation, Interfaces, and Execution Planning Procedures	X				
Org. Assurance	RDO Risk Management Procedures		X			
Org. Assurance	Performance Measurement Policies and Procedures			X		
Org. Assurance	Requirements Management Program Description		X			
Org. Assurance	RDO Requirements Management Procedures		X			

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Org. Assurance	Repository Systems Requirements Management Procedures			X		
Org. Assurance	Internal Constraints Management Procedures		X			
Org. Assurance	Risk Management Plan			X		
Org. Assurance	Self-Assessment Policies		X			
Org. Assurance	Self-Assessment Procedures		X			
Org. Assurance	Management and Organizational Self Assessments and Observations Procedures		X			
Org. Assurance	Readiness Review Procedures		X			
Org. Assurance	Independent Assessment Procedures		X			
Org. Assurance	Trend Program Procedures			X		
Information Mgmt.	Document Control Procedures		X			
Information Mgmt.	Supplier and Subcontractor Document Control Procedures		X			
Information Mgmt.	Publications Policies		X			
Information Mgmt.	Technical Reports Procedures		X			
Information Mgmt.	Document Review Procedures		X			
Information Mgmt.	Document Format Requirements and Electronic Production Procedures		X			
Information Mgmt.	Identification, Protection, Access, Distribution, and Use of Sensitive Unclassified and Classified Information		X			
Information Mgmt.	Managing Technical Product Inputs and References		X			
Information Mgmt.	Use of Copyright-Protected Materials		X			
Information Mgmt.	Correspondence Control Procedures		X			
Information Mgmt.	Licensing Support Network Policies and Plans		X			
Information Mgmt.	Licensing Support Network Management Procedures		X			
Information Mgmt.	Licensing Support Network Records Screening and Personally Identifiable Information (PII) Control Procedures		X			
Information Mgmt.	Management Document Hierarchy		X			
Information Mgmt.	Records Management Procedures		X			

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Information Mgmt.	General Email Records Management Procedures		X			
Information Mgmt.	Licensing Support Network (LSN)-Relevant General Email Records Management Procedures		X			
Information Mgmt.	Control and Management of Electronic Information Procedures		X			
Information Mgmt.	Technical Data Management Procedures		X			
IT Systems	Information Systems & Technology Policy		X			
IT Systems	Software Configuration Management Policy		X			
IT Systems	Software Configuration Management Plan		X			
IT Systems	Software Management		X			
IT Systems	Software Configuration Management Procedures		X			
IT Systems	IT Security Policy		X			
IT Systems	RDO System Security Plan		X			
IT Systems	Cyber Security Plan		X			
IT Systems	IT Security Incident Reporting		X			
IT Systems	Backup and Retention Procedures		X			
IT Systems	Media Clearing, Purging, and Destruction Procedures		X			
IT Systems	Software Maintenance, Patches, and Updates Procedures		X			
IT Systems	Certificate Management Procedures		X			
IT Systems	Policy: Software Planning, Requirements Management, and Project Management, Tracking, and Oversight		X			
IT Systems	Software Planning, Requirements Management, and Project Management, Tracking, and Oversight Procedures		X			
IT Systems	Software Quality Assurance and Compliance Policy		X			
IT Systems	Qualification of Software Procedures		X			
IT Systems	Software Quality Assurance and Compliance Procedures		X			
IT Systems	Software Independent Verification and Validation Procedures		X			
IT Systems	IT Change Control Process Procedures		X			

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
IT Systems	User Account Management Procedures		X			
IT Systems	Resource Access Management Procedures		X			
IT Systems	Mobile Asset Management Procedures		X			
IT Systems	Software Subcontract Management		X			
Consent-Based Siting	Intergovernmental and Public Participation Policies and Procedures	X				
Consent-Based Siting	Community Commitments Policies and Procedures	X				
Consent-Based Siting	Public Communication Products Development, Review, and Approval Procedures	X				
Consent-Based Siting	Policies on Interfaces and Interaction with Industry Groups, Professional Societies, and Others	X				
Consent-Based Siting	Document Public Release Review Procedures	X				
Quality Assurance	Quality Assurance Program Description and QA Requirements		X			
Quality Assurance	QA Policies and Requirements Development and Maintenance Procedures		X			
Quality Assurance	QA Stop Work Orders Procedure		X			
Quality Assurance	Audit and Other QA Personnel Qualification Procedures		X			
Quality Assurance	QA Management Assessment Procedures		X			
Quality Assurance	QA Surveillance Procedures			X		
Quality Assurance	Supplier Evaluation, Surveys, and Audits Procedures			X		
Quality Assurance	Supplier Condition Reports Management Procedures			X		
Quality Assurance	Qualified Supplier List Procedures		X			
Quality Assurance	QA Internal Audit Program Procedures		X			
Quality Assurance	Quality Grading Procedures		X			
Quality Assurance	Quality Programs Controls, Tasks, and Checklists Procedures		X			
Quality Assurance	Nonconformance and Deficient Items Reporting and Control Procedures			X		
Quality Assurance	Oversight of Contractor, NNPP, and other DOE Quality Programs Procedures		X			
Quality Assurance	Acceptance of Items and Services		X			

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Quality Assurance	QA Program Documents Matrix and Impact Assessment Procedures		X			
Quality Assurance	QA Notices and Alerts Procedures		X			
Quality Assurance	Quality Performance Assessment		X			
Quality Assurance	Suspect Counterfeit Item Inspection and Reporting Procedures		X			
Science / Engineering	Design Authority Policy and Procedures		X			
Science / Engineering	Engineering Reports and Documentation Development, Review, and Approval Procedures				X	
Science / Engineering	Constructability and Operability Program Policy				X	
Science / Engineering	Integrated Design Development Process Procedures			X		
Science / Engineering	Units of Measure for Use in Design Fabrication, Construction, Component Testing and Operation Policy				X	
Science / Engineering	Preclosure Safety Analysis Process Procedures				X	
Science / Engineering	Value Engineering Procedures				X	
Science / Engineering	Management Design Review Procedures				X	
Science / Engineering	Engineering Design Guides, Drawings Standards, Checklists, and Procedures				X	
Science / Engineering	Fire Protection Program Design Policies				X	
Science / Engineering	Engineering Configuration Management Policy				X	
Science / Engineering	Fire Protection Program Policy and Procedures				X	
Science / Engineering	Engineering Subcontractor and Supplier Management Procedures				X	
Science / Engineering	Testing of Engineered Items and Systems and Deficiencies and Nonconformances Disposition Procedures				X	
Science / Engineering	Engineering Personnel Qualification (ASME Code) Procedures				X	
Science / Engineering	Scientific Reports and Documentation Development, Review, and Approval Procedures			X		
Science / Engineering	Technical Work Planning, Review, and Control			X		
Science / Engineering	Testing Work Implementation and Control Procedures			X		
Science / Engineering	Peer Review Procedures			X		
Science / Engineering	Expert Elicitation Procedures			X		

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Science / Engineering	Technical Procedures Preparation and Approval Procedures			X		
Science / Engineering	Sample Collection, Examination, Management, Transfer, Archival, and Disposal			X		
Science / Engineering	Laboratory Testing Procedures			X		
Science / Engineering	Testing and Test Equipment Control and Calibration Procedures			X		
Science / Engineering	Tracer, Fluids, and Materials Data Reporting and Management Procedures			X		
Science / Engineering	Test Area Security and Access Procedures			X		
Science / Engineering	Reportable Geologic Conditions Procedures			X		
Science / Engineering	Qualification of Data Not Developed under RDO QA Procedures			X		
Science / Engineering	Technical Interface Control Procedures			X		
Science / Engineering	Memorandum of Agreement for Acceptance of NNPP Fuel				X	
Science / Engineering	Memorandum of Agreement for Acceptance of Spent Nuclear Fuel and High-Level Waste				X	
Science / Engineering	In-Bound/Out-Bound Material Shipment Preparation and Approval Procedures				X	
Science / Engineering	Procedure for Processing Agreements for Acceptance of HLW and SNF from Waste Custodians				X	
Regulatory / Licensing	Repository License Application Development, Management, and Support Plans					X
Regulatory / Licensing	DOE/NRC Regulatory Interactions Process Plans and Procedures		X			
Regulatory / Licensing	NRC Commitment Management Procedures				X	
Regulatory / Licensing	Review of Incoming and Outgoing NRC Correspondence		X			
Regulatory / Licensing	Preparation and Review of Outgoing NRC Correspondence		X			
Regulatory / Licensing	Request For Additional Information Review and Response Development, Review, and Approval				X	
Regulatory / Licensing	License Application Configuration Management, Change Control, and Update and Maintenance Procedures					X
Regulatory / Licensing	Activity Screening for License Application Impact					X
Regulatory / Licensing	Evaluation of Ongoing Activities					X
Regulatory / Licensing	License Application Validation Process Procedures					X
Regulatory / Licensing	Q-List Preparation and Maintenance Procedures				X	

Organization	Policy, Plan, or Procedure Description	Startup	Initiation	Siting	Characterization	Licensing
Regulatory / Licensing	DOE/NWTRB Interactions Process Procedures			X		
Regulatory / Licensing	ALARA Policies				X	
Regulatory / Licensing	Review of Regulatory Agency Documents		X			
Regulatory / Licensing	Review and Documentation of Regulatory Guidance Agreements		X			
Regulatory / Licensing	NRC Posting and Reporting Procedures		X			
Regulatory / Licensing	Licensing: Operating Experience Program		X			
Regulatory / Licensing	Licensing Review of Science and Engineering Documents Procedures					X
Regulatory / Licensing	NRC Inspection Support Procedures				X	
Regulatory / Licensing	Operator-In-Charge Training Program Description					X
Regulatory / Licensing	Environmental Assessment, Environmental Impact Statement, and NEPA Compliance Plans and Procedures		X			
Regulatory / Licensing	Site Characterization Plan			X		

5.3 Policies, Plans, and Procedures List, by Phase

Table 3. Policies, Plans, and Procedures List, by Phase

(Note: Phase abbreviations are; St=Startup, I=Initiation, S=Siting, SC=Site Characterization, L=Licensing)

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
St	Mission, Vision, and Functions Policy Statements	X										
St	Organization Description and Authorities Policies and Procedures	X										
St	Internal and External Communications Policy	X										
St	Quality Management Policies	X										
St	Nuclear Safety Culture and Safety Conscious Work Environment Policy	X										
St	Employee Concerns Program Policy		X									
St	Financial Management and Accounting Policies		X									
St	Human Resources Management Policy		X									
St	Employment Policies		X									
St	Equal Employment Opportunity and Affirmative Action Policies		X									
St	Anti-Harassment and Anti-Discrimination Policies		X									
St	Workplace Violence Policies		X									
St	Ethics and Business Conduct Policies		X									
St	HR Procedures for Protection and Transmission of Protected Personally Identifiable Information		X									
St	Project Controls and Baseline Management Policy		X									
St	Project Management Policy		X									
St	Procurement Actions, Requisitions, and Controls Procedures		X									
St	Request for Proposal Development Procedures		X									
St	Bid Receipt, Evaluation, Recommendation and Award Procedures		X									
St	Procurement Compliance Procedures (incl. Federal Acquisition Regulation (FAR), Davis-Bacon Act, and 10 CFR 21, etc.)		X									

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
St	Formation and Administration of Other Agreements and Subcontract Types (National Labs, Affiliate Companies, etc.)		X									
St	Commitment Authorization and Commitment Register Procedures		X									
St	Training and Qualification Policy		X									
St	Training Requirements Management Policies and Plan		X									
St	Training Management Plan		X									
St	Emergency Management Policy and Program Plan			X								
St	Occupational Safety, Worker Protection, and Other Health Programs and Policies			X								
St	10 CFR 851 Noncompliance Determination and Reporting Process Procedures			X								
St	Property and Assets Management Policy and Plans				X							
St	Safeguards and Security Management Program Policies				X							
St	Corrective Action Program Policies					X						
St	Integrated Safety Management Policy					X						
St	Knowledge Management Plan					X						
St	Operating Experience and Lessons Learned Policies					X						
St	Policies, Procedures, Work Instructions and Guidance Development, Review, and Approval Procedures					X						
St	Project Initiation, Interfaces, and Execution Planning Procedures					X						
St	Intergovernmental and Public Participation Policies and Procedures								X			
St	Community Commitments Policies and Procedures								X			
St	Public Communication Products Development, Review, and Approval Procedures								X			
St	Policies on Interfaces and Interaction with Industry Groups, Professional Societies, Advocacy Groups and Others								X			
St	Document Public Release Review Procedures								X			
I	Procedures and Work Instructions Use and Adherence Policies and Instructions	X										
I	Management Stand Down Procedures	X										
I	Environmental Protection and Compliance Policy	X										

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
I	Policies, Procedures, Work Instructions and Guidance Development, Review, and Approval Procedures	X										
I	Employee Concerns Program Procedures		X									
I	Financial Management and Accounting Procedures		X									
I	Workplace Separation, Severance Pay, Departing Employees, and Employee Death Procedures		X									
I	Workplace Substance Abuse Program Policies and Plans		X									
I	Freedom of Expression and Appeals Policies		X									
I	Performance Management & Employee Assessment Policies		X									
I	Internal Audit Policy and Procedures		X									
I	Earned Value Management System Policy and Description		X									
I	Project Controls Plan		X									
I	Project Controls Integrated Planning Procedures		X									
I	Earned Value Management Procedures		X									
I	Project Controls Cost Estimating, Metrics and Trending, and Reporting Procedures		X									
I	Work Planning and Baseline and Schedule Development and Management Procedures		X									
I	Project Controls Change Control Procedures		X									
I	Project Controls Baseline and Work Authorization Procedures		X									
I	Project Risk and Opportunity Management Procedures		X									
I	Project Controls Organizational and Work Breakdown Structure Implementation Procedures		X									
I	Project Management Plan		X									
I	Enterprise Work Breakdown Structure (WBS) and Milestones Dictionary		X									
I	Project Work Authorization Procedures		X									
I	Acquisition Planning		X									
I	Project Reviews		X									
I	Subcontract and Purchase Order Management Procedures		X									
I	Procurement Documents, Forms, and Records Procedures		X									

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
I	Adjustments, Delays and Extensions, and Incentives Procedures		X									
I	Subcontract Technical Representative Qualification, Appointment, and Responsibilities Procedures		X									
I	Purchasing of Commercial Items and Services and Purchasing Card Procedures		X									
I	Statements of Work, Specifications, and Purchase Descriptions Procedures		X									
I	Project Acquisition Planning Procedures		X									
I	Training Program Description and Plan		X									
I	Training Development, Needs Analysis, Implementation and Evaluation Procedures		X									
I	Personnel Training and Qualification Procedures		X									
I	Procedures Training Program Policies and Plan		X									
I	Education Tuition Assistance Policies and Procedures		X									
I	External Training & Conferences Policies and Procedures		X									
I	Emergency Management Plan			X								
I	Emergency Operations Center Plans and Procedures			X								
I	Incident, Accident, and Emergency Response Procedures			X								
I	Accident Notification and Investigation Procedures			X								
I	Emergency Preparedness Procedures			X								
I	Emergency Response Teams, Roles and Responsibilities Procedures			X								
I	Emergency Management Hazards Assessment and Protective Actions Procedures			X								
I	Emergency Management Drills and Exercises Procedures			X								
I	Environmental Management System Requirements Document			X								
I	Environmental Management System Processes Procedures			X								
I	Environmental Exposures and Protection Policies			X								
I	Pollution Prevention Procedures			X								
I	Review, Approval, and Oversight of Contractor Worker Safety and Heath			X								
I	Hazard Analysis and Communication Procedures			X								

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
I	Occupational Safety and Heath Procedures			X								
I	Employee Status Change and Moves Procedures				X							
I	Facilities Use and Scheduling of Conference Rooms Procedures				X							
I	Facilities Standards Procedures				X							
I	Property Control Procedures				X							
I	Procedures for Oversight, Inventory, and Disposal and Disposition of Government Property in Custody of Contractors and Subcontractors				X							
I	Shipping, Receiving, Handling, and Acceptance of Materials Procedures				X							
I	Real Estate and Facilities Leasing Procedures				X							
I	Badging and Access Control Procedures				X							
I	Operations Security Procedures				X							
I	Operations Security Planning, Assessment, and Review Procedures				X							
I	Security System Testing Procedures				X							
I	Security Incident Management and Reporting Procedures				X							
I	Emergency, Accident, and Incident Security Response Procedures				X							
I	Critical Information Identification and Protection Procedures				X							
I	Condition Reporting, Resolution, and Documentation Procedures					X						
I	Deliverable Review Procedures					X						
I	Differing Professional Opinion Resolution Procedures					X						
I	Integrated Safety Management Plan					X						
I	Knowledge Management Procedures					X						
I	Lessons Learned Reporting and Documentation Procedures					X						
I	Change Management Policies and Procedures					X						
I	RDO Risk Management Procedures					X						
I	Requirements Management Program Description					X						
I	RDO Requirements Management Procedures					X						
I	Internal Constraints Management Procedures					X						

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
I	Self-Assessment Policies					X						
I	Self-Assessment Procedures					X						
I	Management and Organizational Self Assessments and Observations Procedures					X						
I	Readiness Review Procedures					X						
I	Independent Assessment Procedures					X						
I	Document Control Procedures						X					
I	Supplier and Subcontractor Document Control Procedures						X					
I	Publications Policies						X					
I	Technical Reports Procedures						X					
I	Document Review Procedures						X					
I	Document Format Requirements and Electronic Production Procedures						X					
I	Identification, Protection, Access, Distribution, and Use of Sensitive Unclassified and Classified Information						X					
I	Managing Technical Product Inputs and References						X					
I	Use of Copyright-Protected Materials						X					
I	Correspondence Control Procedures						X					
I	Licensing Support Network Policies and Plans						X					
I	Licensing Support Network Management Procedures						X					
I	Licensing Support Network Records Screening and Personally Identifiable Information (PII) Control Procedures						X					
I	Management Document Hierarchy						X					
I	Records Management Procedures						X					
I	General Email Records Management Procedures						X					
I	Licensing Support Network (LSN)-Relevant General Email Records Management Procedures						X					
I	Control and Management of Electronic Information Procedures						X					
I	Technical Data Management Procedures						X					
I	Information Systems & Technology Policy							X				

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
I	Software Configuration Management Policy							X				
I	Software Configuration Management Plan							X				
I	Software Management							X				
I	Software Configuration Management Procedures							X				
I	IT Security Policy							X				
I	RDO System Security Plan							X				
I	Cyber Security Plan							X				
I	IT Security Incident Reporting							X				
I	Backup and Retention Procedures							X				
I	Media Clearing, Purging, and Destruction Procedures							X				
I	Software Maintenance, Patches, and Updates Procedures							X				
I	Certificate Management Procedures							X				
I	Policy: Software Planning, Requirements Management, and Project Management, Tracking, and Oversight							X				
I	Software Planning, Requirements Management, and Project Management, Tracking, and Oversight Procedures							X				
I	Software Quality Assurance and Compliance Policy							X				
I	Qualification of Software Procedures							X				
I	Software Quality Assurance and Compliance Procedures							X				
I	Software Independent Verification and Validation Procedures							X				
I	IT Change Control Process Procedures							X				
I	User Account Management Procedures							X				
I	Resource Access Management Procedures							X				
I	Mobile Asset Management Procedures							X				
I	Software Subcontract Management							X				
I	Quality Assurance Program Description and QA Requirements									X		
I	QA Policies and Requirements Development and Maintenance Procedures									X		
I	QA Stop Work Orders Procedure									X		

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
I	Audit and Other QA Personnel Qualification Procedures									X		
I	QA Management Assessment Procedures									X		
I	Qualified Supplier List Procedures									X		
I	QA Internal Audit Program Procedures									X		
I	Quality Grading Procedures									X		
I	Quality Programs Controls, Tasks, and Checklists Procedures									X		
I	Oversight of Contractor, NNPP, and other DOE Quality Programs Procedures									X		
I	Acceptance of Items and Services									X		
I	QA Program Documents Matrix and Impact Assessment Procedures									X		
I	QA Notices and Alerts Procedures									X		
I	Quality Performance Assessment									X		
I	Suspect Counterfeit Item Inspection and Reporting Procedures									X		
I	Design Authority Policy and Procedures										X	
I	DOE/NRC Regulatory Interactions Process Plans and Procedures											X
I	Review of Incoming and Outgoing NRC Correspondence											X
I	Preparation and Review of Outgoing NRC Correspondence											X
I	Review of Regulatory Agency Documents											X
I	Review and Documentation of Regulatory Guidance Agreements											X
I	NRC Posting and Reporting Procedures											X
I	Licensing: Operating Experience Program											X
I	Environmental Assessment, Environmental Impact Statement, and NEPA Compliance Plans and Procedures											X
I	Waste Acceptance System Requirements Document	X										
I	Waste Management System Requirements Document	X										
I	Transportation System Requirements Document	X										
I	Integrated RDO Management Description	X										
I	Requirement Document Preparation and Approval Procedures	X										

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
I	Requirement Document Preparation Plans	X										
I	Land Access and Environmental Compliance Procedures			X								
I	Environmental Baseline Review Procedures			X								
I	Environmental Permitting and Compliance Procedures			X								
I	Health Protection, Inspections, Reporting, and Audit Procedures			X								
S	Medical Needs Analysis Procedures			X								
S	Investigation and Reporting Procedures for Incidents, Accidents, Near Misses, Motor Vehicle Accidents and Property Damage			X								
S	Respiratory Protection Procedures			X								
S	Industrial Hygiene Procedures			X								
S	Facility Work Control Procedures				X							
S	Light Duty Motor Vehicle Fleet Management and Operations Procedures				X							
S	Physical Assets Maintenance and Surveillance Procedures				X							
S	Operations Work Control Management Policy				X							
S	Operations, Site Control, Work Control Procedures				X							
S	Facility Operations Transportation Policy				X							
S	Operations Procedures: Transportation, Packaging, Labeling, and Shipping, Incl. Hazardous Materials				X							
S	Performance Measurement Policies and Procedures					X						
S	Repository Systems Requirements Management Procedures					X						
S	Risk Management Plan					X						
S	Trend Program Procedures					X						
S	QA Surveillance Procedures									X		
S	Supplier Evaluation, Surveys, and Audits Procedures									X		
S	Supplier Condition Reports Management Procedures									X		
S	Nonconformance and Deficient Items Reporting and Control Procedures									X		
S	Integrated Design Development Process Procedures										X	
S	Scientific Reports and Documentation Development, Review, and Approval Procedures										X	

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
S	Technical Work Planning, Review, and Control										X	
S	Testing Work Implementation and Control Procedures										X	
S	Peer Review Procedures										X	
S	Expert Elicitation Procedures										X	
S	Technical Procedures Preparation and Approval Procedures										X	
S	Sample Collection, Examination, Management, Transfer, Archival, and Disposal										X	
S	Laboratory Testing Procedures										X	
S	Testing and Test Equipment Control and Calibration Procedures										X	
S	Tracer, Fluids, and Materials Data Reporting and Management Procedures										X	
S	Test Area Security and Access Procedures										X	
S	Reportable Geologic Conditions Procedures										X	
S	Qualification of Data Not Developed under RDO QA Procedures										X	
S	Technical Interface Control Procedures										X	
S	DOE/NWTRB Interactions Process Procedures											X
S	Site Characterization Plan											X
SC	Integrated Interface Control Documents	X										
SC	Environmental Exposures and Protection Plans and Procedures			X								
SC	Storm water Permitting and Inspections Procedures			X								
SC	Environmental Sampling Procedures			X								
SC	Hazardous Material and Hazardous Waste Management and Transportation Procedures			X								
SC	Environmental Observations Procedures			X								
SC	Engineering Reports and Documentation Development, Review, and Approval Procedures										X	
SC	Constructability and Operability Program Policy										X	
SC	Units of Measure for Use in Design Fabrication, Construction, Component Testing and Operation Policy										X	
SC	Preclosure Safety Analysis Process Procedures										X	

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
SC	Value Engineering Procedures										X	
SC	Management Design Review Procedures										X	
SC	Engineering Design Guides, Drawings Standards, Checklists, and Procedures										X	
SC	Fire Protection Program Design Policies										X	
SC	Engineering Configuration Management Policy										X	
SC	Fire Protection Program Policy and Procedures										X	
SC	Engineering Subcontractor and Supplier Management Procedures										X	
SC	Testing of Engineered Items and Systems and Deficiencies and Nonconformances Disposition Procedures										X	
SC	Engineering Personnel Qualification (ASME Code) Procedures										X	
SC	Memorandum of Agreement for Acceptance of NNPP Fuel										X	
SC	Memorandum of Agreement for Acceptance of Spent Nuclear Fuel and High-Level Waste										X	
SC	In-Bound/Out-Bound Material Shipment Preparation and Approval Procedures										X	
SC	Procedure for Processing Agreements for Acceptance of High-Level Radioactive Waste and Spent Nuclear Fuel from Waste Custodians										X	
SC	NRC Commitment Management Procedures											X
SC	Request For Additional Information Review and Response Development, Review, and Approval											X
SC	Q-List Preparation and Maintenance Procedures											X
SC	ALARA Policies											X
SC	NRC Inspection Support Procedures											X
L	Repository License Application Development, Management, and Support Plans											X
L	License Application Configuration Management, Change Control, and Update and Maintenance Procedures											X
L	Activity Screening for License Application Impact											X
L	Evaluation of Ongoing Activities											X
L	License Application Validation Process Procedures											X
L	Licensing Review of Science and Engineering Documents Procedures											X

Phase	Policy, Plan, or Procedure Description	RDO Management	Business Management	Environment Safety & Health	Facilities and Safeguards & Security	Organizational Assurance	Information Management	IT Systems	Consent Based Siting	Quality Assurance	Science / Engineering	Regulatory / Licensing
L	Operator-In-Charge Training Program Description											X

6. References

10 CFR Part 2. Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders.

10 CFR Part 60. Disposal of High-Level Radioactive Wastes in Geologic Repositories. U.S. Nuclear Regulatory Commission, April 25, 2016.

10 CFR Part 851. Worker Safety and Health Program. U.S. Department of Energy, February 9, 2006.

10 CFR Part 1021. National Environmental Policy Act Implementing Procedures. U.S. Department of Energy, November 14, 2011.

36 CFR Chapter XII, Subchapter B, Records Management.

40 CFR Part 191. Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes. U.S. Environmental Protection Agency, January 1, 2012.

76 FR 34773. Final Safety Culture Policy Statement. Federal Register Notice: Nuclear Regulatory Commission, June 14, 2011.

80 FR 79872. Invitation for Public Comment to Inform the Design of a Consent-Based Siting Process for Nuclear Waste Storage and Disposal Facilities, December 23, 2015.

ASME NQA-1–2015. American Society of Mechanical Engineers Nuclear Quality Assurance 1 (NQA-1) Quality Assurance Requirements for Nuclear Facility Applications. New York City, New York: American Society of Mechanical Engineers.

DoD 5015.2-STD, *Electronic Records Management Software Application Design Criteria Standard*, February 24, 2015. U.S. Department of Defense.

DOE O 135.1, *Budget Execution—Funds Distribution and Control, 1-9-06,* Washington, DC: U.S. Department of Energy, 2006.

DOE O 243.1B, *Records Management Program*. Washington, DC: U.S. Department of Energy, March 11, 2013.

DOE O 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. Washington, D.C: U.S. Department of Energy, 2010.

DOE G 413.3-10A, *Earned Value Management System (EVMS)*. Washington, DC: U.S. Department of Energy, 2015.

DOE O 414.1d, *Quality Assurance*. Washington, DC: U.S. Department of Energy.

DOE O 442.2, *Differing Professional Opinions for Technical Issues Involving Environmental, Safety, and Health Technical Concerns*. Washington, DC: U.S. Department of Energy.

DOE P 450.4A, *Integrated Safety Management Policy*. Washington, DC: U.S. Department of Energy. April 2011.

DOE O 470.4B, *Safeguards and Security Program*. Washington, D.C: U.S. Department of Energy. 2013

DOE (U.S. Department of Energy) 2013. *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste*. Washington, DC: U.S. Department of Energy, January 2013.

DOE 2014. Assessment of Disposal Options for DOE-Managed High-Level Radioactive Waste and Spent Fuel. *Washington, DC: U.S. Department of Energy.* October 2014.

DOE 2015. *Report on Separate Disposal of Defense High-Level Radioactive Waste*. Washington, DC: U.S. Department of Energy.

NARA (National Archives and Records Administration) 2016. *Criteria for Managing Email Records in Compliance with the Managing Government Records Directive*. M-12-18. Washington DC: National Archives and Records Administration Office of the Chief Records Officer, April 6, 2016.

NRC (U.S. Nuclear Regulatory Commission) 1988. *Peer Review for High-Level Nuclear Waste Repositories*. NUREG-1297. Washington, DC: U.S. Nuclear Regulatory Commission.

NRC 1996. *Branch Technical Position on the Use of Expert Elicitation in the High-Level Radioactive Waste Program*. NUREG-1536. Washington, DC: U.S. Nuclear Regulatory Commission.

NRC 2002. Differing Professional Views or Opinions: 2002 Special Review Panel. NUREG-1763. Washington, DC: U.S. Nuclear Regulatory Commission.

NRC 2004. SECY-04-0111, Recommended Staff Actions Regarding Agency Guidance in the Areas of Safety Conscious Work Environment and Safety Culture. Washington, DC: U.S. Nuclear Regulatory Commission. July 1, 2004, ML041750238.

NRC 2005. *Guidance for Establishing and Maintaining a Safety Conscious Work Environment*. NRC Regulatory Issue Summary 2005-18. Washington, DC: U.S. Nuclear Regulatory Commission Office of Nuclear Reactor Regulation and Office of Nuclear Material Safety and Safeguards.

NRC 2011. *Guidance for Electronic Submissions to the NRC*. Revision 6.1, May 27, 2011. Washington, DC: U.S. Nuclear Regulatory Commission.

Obama, B.H. 2015. Presidential Memorandum—Disposal of Defense High-Level Radioactive Waste in a Separate Repository. Memorandum for the Secretary of Energy. March 24, 2015.

SNL 2014. *Evaluation of Options for Permanent Geologic Disposal of Used Nuclear Fuel and High-Level Radioactive Waste Inventory in Support of a Comprehensive National Nuclear Fuel Cycle Strategy*. FCRD-UFD-2013-000371; SAND2014-0187P; SAND2014-0189P, Revision 1. Albuquerque, NM: Sandia National Laboratories.

SNL 2016. *Draft Infrastructure Framework for a Generic Repository Development Organization*. SAND2016-9091 R; FCRD-USED-2016-000079. Albuquerque, NM: Sandia National Laboratories.