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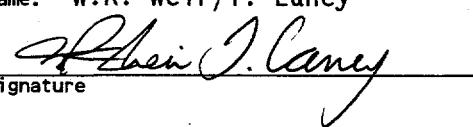
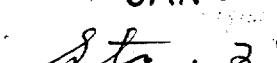
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**CONFIGURATION MANAGEMENT PLAN
FOR K BASINS**

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1.0 INTRODUCTION

This plan describes a configuration management program for K Basins that establishes the systems, processes, and responsibilities necessary for implementation. The K Basins configuration management plan provides the methodology to establish, upgrade, reconstitute, and maintain the technical consistency among the requirements, physical configuration, and documentation. The technical consistency afforded by this plan ensures accurate technical information necessary to achieve the mission objectives that provide for the safe, economic, and environmentally sound management of K Basins and the stored material. The configuration management program architecture presented in this plan is based on the functional model established in the DOE Standard, DOE-STD-1073-93, "Guide for Operational Configuration Management Program."

1.1 PURPOSE

The Configuration Management Plan for K Basins integrates technical and administrative controls to establish and maintain technical consistency among the requirements, physical configuration, and documentation. This plan assists in identifying and managing the structures, systems, and components (SSC), and controls and statuses changes to this baseline to ensure that the SSCs and computer software (hereafter the term SSC includes computer software) within the configuration management program meet design, performance, and operational requirements. The K Basins configuration management plan is aligned with the guidance criteria established in DOE-STD-1073-93, complies with the requirements established in DOE Directives, and is consistent with the direction established by the Spent Nuclear Fuels Project (SNF Project).

1.2 SCOPE

This plan applies a graded approach commensurate with the limited remaining life of SSCs necessary for the operation of K Basins to safely store the spent nuclear fuel and related waste awaiting transfer to permanent storage or waste remediation. The K Basins configuration management program is integrated with the engineering and administrative process defined in WHC-CM-6-1, Standard Engineering Practices; the operational requirements of the work management system; and the technical baseline established through the systems engineering process. The discipline of the configuration management program presented in this plan is comprised of the five basic elements of "program management," "design requirements," "document control," "change control," and "assessments," and the two adjunct recovery and life extension programs of "design reconstitution" and "material condition and aging management." The configuration management program for K Basins uses existing WHC programs, processes, and implementing procedures to the fullest extent practicable.

This configuration management plan is exempt from metrication requirements, in accordance with the provisions established in DOE/RL-94-0070, "Hanford Metric Implementation Plan," Appendix C, items 4 and 5.

1.3 OBJECTIVES

This plan delineates the configuration management program for K Basins with the following objectives:

1. Identification of SSCs required to represent K Basins.

2. Establishment and maintenance of the requirements and associated technical documents to accurately reflect the SSCs.
3. Identification and maintenance of SSC-associated documents within the scope of the K Basins configuration management program.
4. Control and status of changes to the SSCs that ensure the continued integrity and technical relationships among the requirements, physical configuration, and documentation.
5. Assessments to ensure that the configuration management program establishes and maintains the technical relationships.
6. Integration of the configuration management program of the SNF Project to ensure compliance with the SNF Project direction and consistency with the established SNF Project technical baseline.
7. Support of conduct of operations to ensure that the technical consistency among the requirements, physical configuration, and documentation is maintained while performing modifications, corrective maintenance, and preventive maintenance.
8. Maintenance of the technical relationship of K Basins SSCs during operations and deactivation, including the orderly transition to decontamination and decommissioning.

2.0 ROLES AND RESPONSIBILITIES

Roles and responsibilities are defined to ensure that functional organizations are aware of the roles and responsibilities required for implementation of the configuration management program. This section of the configuration management plan identifies general organizational roles and responsibilities. Responsibilities for the conduct of configuration management activities are defined in the specific implementing engineering practices or procedures identified throughout this plan.

2.1 K BASINS

2.1.1 Cognizant Engineering Manager

The cognizant engineering manager will ensure that the provisions of this plan are implemented and will:

1. Have the responsibility of the design authority for K Basins to ensure the adequacy of the engineering design process and the design documents (products) produced for that process.
2. Implement and manage the configuration management program in accordance with this plan.
3. Ensure that complete, accurate, and valid engineering documentation (drawings, text documents, and vendor information) is developed and maintained consistent with the physical configuration using the graded approach.

4. Maintain overall control of all K Basins engineering documentation.
5. Ensure cognizant engineering support in accordance with the engineering process guidelines of WHC-IP-1026, Engineering Practice Guidelines, EPG-1.0, and paragraph 2.1.2 of this plan.
6. Ensure that the change control procedures are used to maintain technical consistency among the requirements, the physical configuration, and the documentation.
7. Ensure that approvals and reviews are obtained for appropriate engineering documents.
8. Ensure assessments are conducted to measure the adequacy of specific configuration management functions and how effective the configuration management process is in establishing and maintaining the basic technical relationships.

2.1.2 Cognizant Engineer

In addition to the cognizant engineer duties identified in WHC-IP-1026, EPG-5.2, the K Basins cognizant engineer will:

1. Ensure appropriate approvals and reviews are obtained for original designs and subsequent changes.
2. Assist in the development and maintenance of the approved technical SSC scope of the K Basins.
3. Identify and manage technical boundaries and interface characteristics.

2.1.3 Operations

Operations will ensure the conduct of operations is implemented (see WHC-CM-5-13, K Basins Policy Manual, Section 2.0) to a high performance level that promotes safe and reliable K Basin operations. Operations will support the program of configuration management to ensure that the physical configuration (i.e., SSCs) maintains consistency with the design requirements and associated documentation, e.g., operating procedures, as-built drawings.

2.1.4 Maintenance

Maintenance will ensure that the conduct of maintenance is applied at K Basins (see WHC-CM-5-13, Section 3.0) to preserve equipment in a safe and reliable operational condition. Maintenance will support the program of configuration management to provide assurance that the physical configuration is maintained within its design requirements and is accurately reflected in the appropriate maintenance procedures, test and inspection reports, and as-built drawings.

2.1.5 Quality Assurance

Quality Assurance will:

1. Develop audit plans, checklists, and assessment criteria and conduct periodic assessments of configuration management requirements and their implementation.
2. Verify that procedures related to configuration management are implemented in accordance with WHC requirements and procedures.
3. Participate in the configuration management process of change control and design verification through inspections, audits, and surveillances.

2.2 SNF PROJECT

The SNF Project will establish, maintain, and coordinate the project management controls for the technical, cost, and schedule baselines as prescribed in the Project Management Plan of the SNF Project and the associated WHC-SD-SNF-CM-001, "Spent Nuclear Fuel Project Configuration Management Plan."

2.3 CONFIGURATION MANAGEMENT SYSTEMS

The Configuration Management Systems group of Operations and Maintenance Program Improvement will:

1. Develop the K Basins configuration management plan and technical documentation upgrade process, including field verification and design reconstitution.
2. Ensure new or revised DOE configuration management requirements are appropriately integrated within the hierarchy of the WHC configuration management program.
3. Ensure the K Basins configuration management program remains consistent with the SNF Project configuration management requirements.
4. Ensure that the recording and reporting status for technical documents and associated changes are adequately addressed and maintained in appropriate procedures and databases.
5. Conduct or participate in configuration management assessments.

2.4 BCS RICHLAND (BCSR)

BCSR will:

1. Manage and maintain document processing, distribution, record storage, retrieval, and microfilming.
2. Provide vault storage for documentation and computer software media.

3.0 PROGRAM MANAGEMENT

The program management element directs and monitors the development and implementation of the K Basins configuration management plan. This element of the configuration management plan ensures the following program functional areas are established and executed.

3.1 PROGRAM PLANNING

The configuration management program is a phased implementation involving program planning, development, and execution. Program planning sets the direction, definition, and graded approach for future development and implementation activities. This approach will consider existing programs and procedures, assessment of existing programs, and procedures to determine any weaknesses and provide a strategy for corrective measures to align with the configuration management program elements. The major steps (phases) are described below:

- Phase 1 - Develop a configuration management plan for K Basins that provides a "road map" for integrating, assessing, and improving existing configuration management functions. The establishment of this plan will also address the development of the design reconstitution adjunct program and establish criteria for the material condition and aging management adjunct program.
- Phase 2 - Develop an implementation strategy and compliance matrix to assess the configuration management plan identified in Phase 1.
- Phase 3 - Implement the configuration management plan in accordance with the implementation strategy. Monitor schedules, budgets, and productivity to ensure that the configuration management program is carried out as planned and budgeted.
- Phase 4 - Perform assessments (post-implementation) of the configuration management program.

3.2 WORK BREAKDOWN STRUCTURE

A work breakdown structure (WBS) is a product- or task-oriented hierarchical relationship composed of hardware, software, services, and data that completely define the scope of a product or task. The WBS displays and defines the product(s) or task(s) to be developed and/or produced and relates elements of work to be accomplished by the end product. The WBS establishes a logical, indentured framework for correlating schedule, cost, technical performance, and technical interfaces. The K Basins WBS is prepared and controlled in accordance with WHC-CM-2-5, Management Control System. All products (data, documents, and SSCs) should be traceable to the WBS that authorized their development.

3.3 BASELINE MANAGEMENT

Baseline management integrates and controls quantitative criteria of technical, cost, and schedule that are identified in selected documents. The WHC baseline management process is established in WHC-CM-2-5. These selected documents identify specific criteria for the respective baseline, as described in the following paragraphs. The three primary baselines (or as many as management determines is necessary) establish the frame of reference that provides the management of K Basins, including the interface of K Basins management with SNF Project, and the necessary

controls to make informed decisions, provide status, manage changes, and ensure the capability of measuring performance of the established technical, cost, and schedule criteria.

3.3.1 Technical Baseline

The technical baseline is that body of technical information (e.g., requirements, reflected in drawings, specifications, process flows) associated with a system under development, operation, modification, or deactivation. This baseline contains all technical requirements for system and design specifications, design configuration, operations and maintenance, and deactivation. The technical baseline is the reference set of technical information and is controlled using configuration management principles as described in this plan. All documents in the baseline related to SSCs will be prepared in accordance with the applicable procedures. As development of the technical baseline evolves from the systems engineering process, required documentation will be developed and controlled for K Basins.

3.3.2 Cost and Schedule Baseline

Although configuration management is the control for the technical baseline, it integrates with the cost and schedule issues insofar as changes to the cost and schedule baseline result in or derive from the approved technical baseline. The integration of the cost and schedule baselines with the technical baseline ensures that K Basins management has accountability of the technical scope related to the cost and schedule elements. This integration provides further assurance that valid data are available to accurately assess the cost and schedule impacts that may be associated with proposed changes to the technical baseline.

3.4 EQUIPMENT SCOPE CRITERIA

K Basins SSCs will be identified in the various system design description (SDD) documents that will be prepared for each major system and subsystem that comprises the K Basins. As a minimum, the compilation of this SSC list will use the following criteria to derive and maintain the SSC scope:

- SSCs that are identified as safety classification 1 and 2 items.
- SSCs that provide protection measures that will prevent damage, destruction, and unauthorized access.
- SSCs whose failure will result in the inability to accomplish the K Basins' mission.
- Failure of any depicted component that results in an emergency response to repair or replace the failed component.
- Replacement costs are high as determined by K Basins management.

3.5 AS-BUILDING PROCESS

The as-building process embodies the elements of configuration management to produce accurate documents, primarily drawings, that have been validated through field inspection to reflect the actual existing physical configuration and verified to be consistent with the design requirements. K Basins is an aged facility and has known deficiencies in the engineering documents. Therefore, a

design reconstitution program plan (see WHC-SD-SNF-DRP-001, "Design Reconstitution Program Plan and Procedures for K Basins," and paragraph 9.0 of this plan) addresses the engineering evaluation process and provides a methodology to upgrade or, where necessary, recreate required engineering documentation. The design reconstitution program plan is coordinated with the field verification program (see WHC-SD-SNF-FVP-001, "Field Verification Program for K Basins," and paragraph 7.2 of this plan) to validate that the existing physical configuration is consistent with the design requirements. The integration of the field verification program and the design reconstitution program will produce as-built documents (drawings) that accurately define K Basins SSCs.

3.6 CONCEPTS AND TERMINOLOGY

The WHC standard configuration management concepts and terminology are established and maintained in WHC-CM-6-1. Terms and definitions used in this plan are provided in the glossary of this plan.

3.7 INTERFACES

Organizational and technical interfaces necessary for the K Basins' configuration management program are identified and controlled. Appropriate program and organization interfaces are presented within this configuration management plan. The technical interfaces are described in paragraph 4.3.3 of this plan.

3.8 DATABASES

Databases that support the K Basins configuration management program identify computer software, documents, design bases, design requirements, and change request status to identify, store, control, status, and retrieve information.

1. The engineering release system database (ERSDB) tracks the status of released engineering documents and the subsequent changes to those engineering documents.
2. Automatic data processing (reference WHC-CM-8-8, Job Control System, JCS-2) of the job control system provides support for K Basins maintenance and modifications.

3.9 PROCEDURES

The procedures specified in this configuration management plan provide the details and process flows that implement the criteria of this plan. A phased and graded implementation will be based on the initial assessments, audits, Standards/Requirements Identification Documents (S/RIDs), and existing WHC procedures that are identified and referenced in WHC-SD-SNF-CMD-001, "Configuration Management Compliance Matrix for K Basins."

3.10 CONFIGURATION MANAGEMENT TRAINING

As procedures and related configuration management processes are established, associated training will be required to communicate objectives and expectations and to ensure effective implementation. The configuration management program training should include several levels of

information as determined appropriate by K Basins management on configuration management concepts, roles and responsibilities, terminology, and implementing procedures. These training levels should include:

1. Initial awareness overview training
2. Follow-up training on functional and organizational implementation
3. Refresher training, as needed, for maintaining implementation review and change practices.

3.11 VENDOR AND CONTRACTOR CONTROL

Vendor and contractor control ensures that important activities and information that support the K Basins configuration management program are reviewed and approved. The K Basins vendors and contractors shall use WHC configuration management procedures for the conduct of vendor and contractor work at K Basins as specified in their Statements of Work or Letters of Instruction.

Vendor and contractor control requirements include the following.

- Vendors and contractors will establish controls over the products, data, design, and information for K Basins as defined in this plan.
- The physical configuration will agree with all documentation (drawings and text) including approved changes.
- All approved changes will be incorporated before final turnover to the K Basins design authority.
- Construction/modification drawings and documents will be written in a format that is acceptable to the K Basins' design authority and complies with the document control system defined in this plan.
- Pertinent vendor technical information (manuals and notices) will be identified, collected, and controlled in accordance with WHC-CM-6-1, EP-3.3.

4.0 DESIGN REQUIREMENTS

The design requirements element of the configuration management program includes the functions that establish and maintain the technical documents and associated design basis and the products (SSCs) generated from these documents, and identifies the SSCs controlled by the K Basins configuration management plan. K Basins SSCs are identified in Appendix A of this plan.

4.1 DESIGN ENGINEERING PROCESS

Design engineering is the technical and management process that begins with the identification of design inputs and constraints, processes this information, and results in the issuance of requirements. For each design, the design process: (1) defines and documents the design inputs; (2) identifies and adheres to the design constraints; (3) performs and documents the analyses,

calculations, and technical evaluations; and (4) ensures that the design outputs are complete and accurately documented. The engineering process is described in detail in WHC-IP-1026, EPG-1.0.

The design engineering process uses two fundamental types of information: (1) requirements, which consist of design outputs, and (2) the design basis, which consists of design inputs, design constraints, and design analysis and calculations. Fundamentally, the requirements specify what is required and the design basis explains why it is required.

The K Basins SSCs are reflected in the design output requirements (primarily drawings and specifications). Each design output requirement document is generated from an authorizing design basis. Therefore, changes to the design requirements shall be maintained consistent with and supported by the design basis. The operating, maintenance, and testing procedures are included in this list of requirements documents and shall also be maintained consistent with the design requirements.

4.2 ESTABLISHMENT OF DESIGN BASIS

The design basis is composed of three principle types and is described as follows:

1. **Design Inputs** - Those specific criteria, limits, bases, or other initial requirements (such as specific functional requirements, specific codes and standards, and specific regulatory commitments) on which the detailed design is based.
2. **Design Constraints** - Those general restrictions and limits to the engineering design process that ensure consistency and quality of designs (such as general codes and standards, general regulatory commitments, quality assurance requirements, engineering procedures and good practices, and required design methodologies).
3. **Design Analysis and Calculations** - Those intermediate design products that are necessary to convert the design inputs and constraints into appropriate and complete design outputs. These consist of a wide variety of engineering analyses, calculations, studies, reports, and technical review checklists necessary to perform complete engineering design.

The design bases are formally established, documented, maintained, and correlated with the design requirements.

1. Design verifications are performed in accordance with WHC-CM-6-1, EP-4.1, to determine the adequacy of the design basis for existing SSCs. If the design basis is inadequately documented, inaccurate, or missing, the design basis is recovered through the design reconstitution program (paragraph 9.0).
2. The design bases for modified requirements are established and documented as they are developed.

4.3 ESTABLISHMENT OF REQUIREMENTS

Requirements, reflected in the design outputs (drawings, specifications, supporting documents, etc.) or the "as-designed or as-operated conditions," are the documented products of the design process that specify the design requirements for the K Basins SSCs.

1. The design outputs are the composite result of the engineering process derived from the design inputs, design constraints, and design analysis and calculations.
2. Design outputs specify the functions, capabilities, capacities, physical dimensions, limits and setpoints (such as valve, switch, and relay positions), etc., that are necessary and supported by the design basis.
3. Design outputs include the functional requirements, procurement requirements, quality assurance actions, construction installation specifications and instructions, post-installation testing, post-maintenance testing, and periodic surveillance/testing requirements.
4. The design output documents provide the design requirements that depict the physical configuration of K Basins.

Requirements are formally established, documented, and maintained. When requirements exist, a "design verification" will be performed in accordance with WHC-CM-6-1, EP-4.1, to determine if the requirements are adequate. If the requirements are inadequately documented, inaccurate, or missing, then the requirements are reconstructed through the design reconstitution program (see paragraph 9.0 of this plan).

The requirements for modifications to K Basins and associated equipment are established, categorized, and documented as they are developed. The source and traceability of requirements are identified in a supporting document or database, as determined appropriate by management, that correlates the requirements with the SSCs involved, the SSC grade, technical topics involved, and associated design and configuration management documentation.

4.3.1 Graded Approach

The graded approach (defined in Appendix B) is used to identify and rank SSCs and to determine the type and amount of documentation that is required to define an SSC and ensure that adequate administrative controls exist. In addition, the graded approach is used to determine the level of analysis, documentation, and action necessary to support an SSC commensurate with the selected grade.

4.3.2 Equipment List

The equipment list, usually in the form of a database, identifies the specific SSCs that will be included in the configuration management program. The equipment list can be either a master equipment list or an SSC hierarchy.

1. **Master Equipment List (MEL)**. A master equipment list identifies the SSCs. The MEL provides the following information:
 - a. Structures and systems that are within the scope of the K Basins configuration management program.
 - b. Components that make up the system.
 - c. Grade category of each system and component.
 - d. Appropriate requirement and design basis documents for each SSC.
2. **SSC Hierarchy**. The SSC hierarchy delineates the relationship of SSCs to each other and identifies those documents associated with each SSC that are currently available.

4.3.3 System and Process Boundaries

System and process boundaries are established to contain those SSCs that are necessary for K Basins operations. The WHC interface control documentation is established in accordance with WHC-CM-6-1, EP-1.5.

1. **Existing SSCs**. In coordination with K Basins management, the cognizant engineer will identify, establish, document, and control all physical and functional interfaces within the configuration management program.
 - a. All interfaces are formally controlled as soon as they are identified, documented, approved, and released.
 - b. A graded approach is used to ensure that the level of interface control is consistent with the requirements and needs of K Basins.
 - c. A graded approach is used for any reconstitution effort that is conducted to establish interface control information.
2. **Projects**. The cognizant engineer will identify, establish, document, and control all physical and functional interfaces of any new SSC modifications with the existing K Basins SSCs.
 - a. All interface boundaries are documented and formally controlled as soon as they are identified, documented, approved, and released.
 - b. Interface control documents and their related changes are processed in accordance with WHC-CM-6-1, EP-1.5.

5.0 DOCUMENT CONTROL

The document control element identifies and maintains documents within the configuration management program consistent with the physical configuration and design requirements. This is accomplished by identifying the types of documents and specific documents to be included in the configuration management program, storing these documents; and controlling, tracking, and retrieving those documents.

5.1 IDENTIFICATION OF DOCUMENTS**5.1.1 Document Types**

Documents in the K Basins configuration management program generally include design drawings, engineering procedures, specifications, system design descriptions, processes, safety analysis reports, operation and maintenance procedures or manuals, as-built drawings, equipment or component lists, analysis and calculation reports, systems engineering documents, and vendor information.

1. K Basins Cognizant Engineering organization determines the types of documents that will be included in the configuration management program based upon criteria in this plan.
2. A graded approach (see Appendix B) identifies the document types and the specific documents that are required for each SSC that is controlled by the configuration management program.
3. Each type of technical document will identify the cognizant engineer.
4. Document owners will verify the technical content of assigned documents.
5. Each document is identified in accordance with WHC-CM-6-1, EP-1.1. All technical documents have unique identification numbers that facilitate document retrieval, statusing, change development, and linkages to other documents and SSCs.

5.1.2 System Design Descriptions

SDDs provide K Basins systems design functions, requirements, and purpose and discuss how these requirements are satisfied by the design. In general, the SDD contains sufficient information to: (1) describe each system and their major components, including system and component arrangements, (2) define system and component functions, (3) document the design basis and requirements for each system and their major components, and (4) provide supplementary information such as maintenance, testing, and inspection requirements; casualty events and responses; drawing lists; operating and maintenance procedure lists; and vendor information lists.

SDDs are developed during the design reconstitution program (see paragraph 9.0 of this plan) to capture all relevant information that describes a system, its design basis and requirements, and its operating and maintenance requirements and to identify the weaknesses in the required information which requires reconstituting. The minimum contents of the SDD are identified in Appendix C of WHC-SD-SNF-DRP-001.

5.1.3 Documentation of Requirements

Requirements are reflected in the five major categories of engineering documents as defined in WHC-CM-6-1, EP-1.1: drawings, specifications, vendor information, supporting documents, and selected types of environmental engineering documentation. All technical documents have unique identification numbers to facilitate document retrieval, statusing, change development, and linkages to other documents and SSCs.

1. Drawings. All K Basins drawings are prepared and released in accordance with Hanford Plant Standards, SDC-1.3.
2. Specifications. Single-use and multi-use specifications are prepared and documented in accordance with WHC-CM-6-1, EP-1.2.
3. Vendor Information. Vendor information documents are identified and controlled in accordance with WHC-CM-6-1, EP-3.3.
4. Supporting documents. Supporting documents are prepared and documented in accordance with WHC-CM-6-1, EP-1.12.
5. Environmental Engineering Documentation. Environmental engineering documents are prepared and documented in accordance with WHC-CM-3-6, Uniform Publications System.

5.2 STORAGE

Responsibility for document archival storage, permanent storage for one-of-a-kind records, and access control is established, and original or master copies of configuration management documents are stored and protected.

1. Document archival storage, permanent storage for one-of-a-kind records, access control, and microfilming of record documents are assigned to BCSR and documented in WHC-CM-3-5, Document Control and Records Management Manual.
2. Originals and copies of identified documents (including approved changes) are stored, protected, and readily available to creators and users of the document at the point of application. The locations for storage are identified in Appendix C of this plan.
3. Retention times are established to meet the needs of the document owners and users (see WHC-CM-3-5, Section 4). All documents are retained until turnover to decontamination and decommissioning (D&D) as part of the deactivation turnover package. After turnover, retention requirements are specified by the D&D organizations performing the appropriate subsequent activities.

5.3 CONTROL AND TRACKING

The ERSDB is the master document control and release system database for statusing of documents and related changes to controlled documents. The status of each released engineering change notice (ECN) is maintained.

1. A Configuration Documentation Work Station (CDWS) is used to release engineering documents and track and status related changes, required to control the accurate representation of K Basins configuration.
2. Only the current version of a document and related outstanding ECNs of identified documents are used.
3. Documents listed in the ERSDB can identify documents related to: (1) particular SSCs, (2) types of SSCs, (3) technical topics, and (4) other relational information as may be necessary.

5.4 RETRIEVAL

Technical documents are retrievable, upon request, from a CDWS or BCSR. When a copy of a document is issued, the document includes the identification of outstanding changes and the references to detailed information regarding such changes.

6.0 CHANGE CONTROL

Change control is the systematic evaluation and coordination process that ensures proposed changes are identified, evaluated, approved, documented, implemented, and tracked.

6.1 IDENTIFICATION OF CHANGES

All permanent and temporary technical changes to the requirements, physical configuration, or documentation within the K Basins are identified and documented. The initiator of a change provides sufficient information with the change to permit the approval authorities to adequately review the change proposal. This information generally includes, but is not limited to the following:

1. A complete, clear, and accurate description of the change.
2. A clear and accurate justification of why the change is required.
3. Constraints (if there any limits to what can be done during change implementation).
4. A description of the impact.
5. Source material that requires or requests a change is identified or included as part of the change package. Types of source material may include nonconformance reports; software problem reports; and procurement, maintenance, and operations correspondence.
6. Results of analysis or calculations to support the change.

6.2 CHANGE PROCESS PROCEDURES

Two change categories presently exist for WHC to address: (1) programmatic changes and (2) change control of ECNs.

6.2.1 Programmatic Changes

A programmatic change is a change to the established technical, cost, and schedule baselines. These changes are processed in accordance with the management control system established in WHC-CM-2-5, Section 2.3 and Section 4.1.

6.2.2 ECN Change Control

Technical changes are proposed, justified, evaluated, dispositioned, and authorized for implementation by the following processes. Changes to computer software are made in accordance with paragraph 8.0 of this plan.

1. Changes to technical documents are authorized through the ECN process prepared in accordance with WHC-CM-6-1, EP-2.2.
2. If a change involves an Unreviewed Safety Question (USQ) or potential USQ, the USQ is processed in accordance with WHC-CM-6-1, EP-2.2; and WHC-CM-1-3, Management Requirements and Procedures, MRP 5.12; and facility-specific USQ implementation procedures.

6.3 TECHNICAL CHANGE REVIEWS

All ECNs are evaluated in accordance with WHC-CM-6-1, EP-2.2, and typically include the following:

1. Determine the technical validity of the change.
2. Identify all affected SSCs and associated documentation.
3. Determine the appropriate acceptance testing criteria (post-implementation).
4. Identify the impact to other projects or services not associated with the original change proposal.
5. Determine the impact on the technical, cost, and schedule baselines and other documents within the K Basins' scope.
6. Ensure that mission objectives will be met or that the change will not interfere with the accomplishment of the mission.

6.4 MANAGEMENT CHANGE REVIEWS

Management reviews changes in accordance with WHC-CM-6-1, EP-2.2 (including those that involve a change to cost and schedule baselines), to verify that the technical reviews have been

performed adequately, that the change package is complete and ready for implementation, and that any external approvals are obtained before implementation.

6.5 IMPLEMENTATION OF CHANGES

Approved changes may be administrative and only affect documents or may be physical and affect the SSCs and their associated documents.

1. Administrative.

Changes to drawings are incorporated in accordance with WHC-CM-6-1, EP-1.3.

Changes to supporting documents are incorporated in accordance with WHC-CM-6-1, EP-2.2.

2. Physical.

Implementation of an approved change to an SSC is authorized by an ECN and accomplished by a work request in accordance with the job control system established in WHC-CM-1-8, Work Management. All completed work requests will be reviewed, inspected, and tested (if required) in accordance with paragraph 7.4 of this plan to determine if the change meets its post-implementation acceptance criteria. Documentation of the change is performed in accordance with the administrative details described above.

6.6 DOCUMENTATION OF CHANGES

Change documentation is an evolving process throughout the life cycle of the change, from identification of the proposed change through design analysis, reviews, approval, and eventual closeout. The closeout aspect of the change includes updating all the affected documents (e.g., as-built drawings, acceptance test procedures/reports, operating and maintenance procedures). These evolving steps are traceable to the ECN and tracked by the ERSDB. The ECN is identified in the job control system work request for modification and provides the traceability to the physical SSC and operating documents affected by the ECN.

NOTE: It is very important that traceability between the actual work performed (completed work requests) and the authorizing change document (ECN) be developed and maintained. This linkage is a critical part of the change control process since this information is used to establish the actual physical configuration.

6.7 CHANGE CONTROL BOARDS

Change control boards are optional and may be established if determined to be necessary by K Basins management. Two types of change control boards have been effective for the disposition and control of changes. They are defined as follows.

- 1. Programmatic Change Control Boards.** A programmatic change control board dispositions all proposed "Change Request" programmatic changes. The programmatic change control board details are presented in WHC-CM-2-5.

2. **Technical Change Control Boards**. A technical change control board conducts reviews of proposed engineering changes that are within the SSC scope of K Basins. A model of a change control board charter is described in Appendix D.

6.8 CHANGE CONTROL TRACKING

The current status of released technical changes (i.e., ECN) against any technical document is tracked via the ERSDB and available from the CDWS. Each ECN will reference other affected technical documents and references to those documents will be included in the ERSDB.

7.0 ASSESSMENTS

The assessments element measures the configuration management program effectiveness in establishing and maintaining the basic configuration management relationships. Assessments assist in defining the needs of the configuration management program and evaluating the accuracy of the design requirements, physical configuration, and documentation. Assessments test and ensure the accuracy is maintained consistent among the design requirements, the physical configuration, and documentation.

7.1 PROGRAMMATIC ASSESSMENTS

Programmatic assessments evaluate the adequacy of the K Basins configuration management program and implementing procedures. Discrepancies within the program are captured in WHC-SD-SNF-CMD-001, which identifies the deficiency and tracks the resolution. In addition, this compliance matrix identifies areas within the configuration management program that, although not considered weaknesses, are being reviewed for potential enhancements within the configuration management program.

7.1.1 Initial Assessments

During the planning for the development of the K Basins configuration management program, initial assessments are conducted to determine the strengths and weaknesses of existing programs and procedures to determine where upgrade actions and resource expenditures are necessary. Existing assessments generated by audits, safety concerns, evaluations, and oversight reviews are listed in WHC-SD-SNF-CMD-001.

7.1.2 Post-implementation Assessments

Assessments are performed for each configuration management element and function of this plan to determine if the upgraded programs and procedures address identified weaknesses, are effective in accomplishing the functions of configuration management, and are workable. After each system design basis document is developed by the design reconstitution program, a field validation is performed to ensure consistency among the requirements, physical configuration, and documentation.

7.1.3 On-going Assessments

Following implementation of the configuration management program, assessments are performed periodically to measure the overall configuration management program effectiveness and to

determine if the degree of control is adequate and appropriate. The results of these assessments establish the basis for improvements or corrective action to the configuration management program.

7.2 PHYSICAL CONFIGURATION ASSESSMENTS

Compliance with technical requirements specified in this plan are verified through assessment of the technical baseline documents. Physical verifications are performed through the as-building process (see paragraph 3.5 of the plan) to ensure that any discrepancies identified between technical documents and "as-found" configurations are documented and dispositioned.

1. Physical walkthroughs are part of the initial and on-going assessments in accordance with WHC-SD-SNF-FVP-001. During walkthroughs, SSC (equipment) identification checks are made to establish the existence and accuracy of nameplates and nameplate data.
2. If discrepancies are discovered, appropriate corrective actions are developed and implemented to establish agreement between the physical configuration and the documentation.
 - a. The corrective actions include additional walkthroughs to characterize the problem and to determine the extent of the problem.
 - b. The corrective actions include evaluations to determine whether the physical configuration or the documentation should be changed.

7.3 PERIODIC EQUIPMENT PERFORMANCE MONITORING

SSCs that require the monitoring of performance will be tested and evaluated periodically, in accordance with WHC-CM-6-1, EP-4.2, to determine if the equipment still meets its design requirements.

1. Monitoring addresses surveillance actions, periodic inspections and tests, and other monitoring of SSCs to ensure safe and reliable operation of the SSC.
2. Monitoring includes measurements to collect and trend data to actual aging degradation of equipment, as determined by the material condition and aging management program, if imposed by K Basins management. See paragraph 10.0 of this plan.

7.4 POST-INSTALLATION TESTING

After installation, the testing of SSCs is planned, conducted, and documented in accordance with WHC-CM-6-1, EP-4.2, to determine if the equipment meets its design requirements before being turned over for service through the work management process.

8.0 SOFTWARE CONFIGURATION MANAGEMENT

Software configuration management applies to K Basins computer software and associated documentation used, as a minimum, for scientific analysis, engineering design (computer-aided

design) and analysis, and hardware operational applications. Administrative or office computer software used for non-engineering, non-scientific, or non-operational applications is not controlled by this document.

The process of acquiring, developing, and maintaining software to support the analysis, design, and operation of program SSCs are controlled using appropriate software engineering and quality assurance procedures. These procedures verify that required documentation is provided for each stage of the software development and operational life and describe the methods to be used for the qualification of existing and acquired software. Procedures identify and describe software verification and validation requirements and software configuration management controls. Computer software is identified, developed, documented, changed, and controlled (including access control, backup/recovery, and supplier control) in accordance with WHC-CM-3-10, Software Practices, and K Basins specific instructions.

9.0 DESIGN RECONSTITUTION

The adjunct program of design reconstitution is a one-time effort of identifying, retrieving, evaluating, verifying, and regenerating missing critical design requirements and design bases. Where design information for existing SSCs is found to be inadequate, the design reconstitution program is used to establish, organize, and document design information for systems and technical topics. The adequacy of existing design information is technically evaluated to determine the extent and priority of the design reconstitution needed. The design reconstitution program is defined and established in WHC-SD-SNF-DRP-001.

10.0 MATERIAL CONDITION AND AGING MANAGEMENT

The adjunct program of material condition and aging (MCA) management program assesses the material condition of potentially life-limiting components of a facility, estimates the remaining life of components, develops techniques that will extend the life of components, and develops analytical and periodic testing procedures to measure aging degradation trends. The objective of the MCA program is to prevent the failure of facility life-limiting components from aging degradation and the associated impact on facility operations. Aging degradation can so impair the performance capability of equipment that it no longer meets its design requirements, which can compromise the integrity of the basic technical relationship.

If K Basins management determines an MCA program is warranted, a program plan and appropriate implementing procedures will be prepared. The program plan is based on implementation considerations and initial assessments, and will address the same topics identified in the configuration management plan. Although the MCA is an adjunct program of configuration management, the MCA program plan will be prepared separately and issued as a stand-alone supporting document.

11.0 REFERENCES

DOE-STD-1073-93, "Guide for Operational Configuration Management Program."

Hanford Plant Standards, Standard Design Criteria, SDC-1.3, "Preparation and Control of Engineering and Fabrication Drawings."

WHC-CM-1-3, Management Requirements and Procedures.

- MRP 5.12, "Identifying and Resolving Unreviewed Safety Questions."
- MRP 5.46, "Safety Classification of Systems, Components, and Structures."

WHC-CM-1-8, Work Management.

WHC-CM-2-5, Management Control System.

**WHC-CM-3-5, Document Control and Records Management Manual, Section 12.7,
"Approval of Environmental, Safety, and Quality Documents."**

WHC-CM-3-10, Software Practices.

WHC-CM-5-13, K Basins Policy Manual.

- Section 2.0, "Conduct of Operations Policy."
- Section 3.0, "K Basins Maintenance Policy."

WHC-CM-6-1, Standard Engineering Practices.

- EP-1.1, "Engineering Document Identification Requirements."
- EP-1.2, "Engineering Specifications Requirements."
- EP-1.3, "Engineering Drawing Requirements."
- EP-1.5, "Interface Control Requirements."
- EP-1.6, "Engineering Data Transmittal Requirements."
- EP-1.7, "Engineering Document Approval and Release Requirements."
- EP-1.12, "Supporting Document Requirements."
- EP-2.2, "Engineering Document Change Control Requirements."
- EP-3.3, "Vendor Information Requirements."
- EP-4.1, "Design Verification Requirements."
- EP-4.2, "Testing Requirements."

WHC-CM-8-8, Job Control System, JCS-2, "Automatic Data Processing."

WHC-IP-1026, Engineering Practice Guidelines.

- EPG-1.0, "Engineering Process."
- EPG-5.2, "Typical Cognizant Engineer Responsibilities."

WHC-SD-SNF-CM-001, "Spent Nuclear Fuel Project Configuration Management Plan."

WHC-SD-SNF-CMD-001, "Configuration Management Compliance Matrix."

WHC-SD-SNF-FVP-001, "Field Verification Program for K Basins."

WHC-SD-SNF-DRP-001, "Design Reconstitution Program Plan and Procedures for K Basins."

12.0 BIBLIOGRAPHY

DOE 4330.4B, "Maintenance Management Program."

DOE 4700.1, "Project Management System."

DOE N 4700.5, "Project Control System Guidelines."

DOE N 4700.6, "Project Control System Guidelines."

DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities"

DOE 5700.6C, "Quality Assurance."

RLID 5000.12, "Hanford Site Management System."

RLIP 4700.1A, "Project Management System."

WHC-CM-1, Company Policies and Charters.

WHC-CM-2-1, Procurement Manual and Procedures.

WHC-CM-3-4, Information Release Administration.

WHC-CM-3-6, Uniform Publications System.

WHC-CM-4-2, Quality Assurance Manual.

WHC-CM-4-3, Industrial Safety Manual.

WHC-CM-4-29, Nuclear Criticality Safety Manual.

WHC-CM-4-46, Nonreactor Facility Safety Analysis Manual.

WHC-CM-7-5, Environmental Compliance.

WHC-SD-GN-DGS-30011, "Radiological Design Guide."

WHC-SD-NR-SEL-001, "Safety Equipment List for K Area."

APPENDIX A

K BASINS SYSTEMS AND SUBSYSTEMS IDENTIFICATION

- Radiation Protection - Installed detectors, PIOPS, portal monitors, portable monitoring equipment, 183 Lab, annunciators, and security system interface.
- Environmental Protection/Waste Handling - Effluent stream monitoring, air monitoring, process ventilation, basin exhausters, drains/outfalls, instrumentation, annunciators, waste pads, and burial boxes.
- Fire Protection - Life Safety - Emergency lighting.
- Basin Water - Chillers, ion exchange modules, ion exchange columns, recirculation pumps, skimmer pumps, sand filters, canister filters, and instrumentation.
- Structures - Building structures, roofs, roof drains, cranes, and hoists.
- Water Supply and Distribution - River pumps and motors, raw water, filtered water, potable water, demineralized water, instrumentation, pumps, and annunciators.
- Basin Instrumentation - Level, ph, temperature, C/D sumps, basin water sampling, annunciation, telephone, LAN, PAX, sirens, and CCTV.
- Infrastructure - Heating, ventilation, air conditioning, boilers, sanitary drains, septic, trailers, parking lots, and compressed air.
- Water Treatment - Chemical systems, chlorine system, alum system, separan system, chlorine detection, 183 water sampling, instrumentation, and annunciators.
- Fuel Handling - Encapsulation equipment, sludge removal equipment, canisters, casks, fuel racks, railcar controls, and chute doors.
- Electrical - AC and DC.

APPENDIX B**CONFIGURATION MANAGEMENT GRADED APPROACH**

The graded approach provides guidance on the process that will be used with the configuration management program, including the adjunct programs of design reconstitution and material condition and aging management, to the specific conditions and needs of K Basins. This approach determines the level of detail required for documentation to adequately identify and control SSCs.

This graded approach for K Basins is not being used to determine the selection of SSCs that are within the scope of the configuration management program. The graded approach presented here determines the extent to which appropriate resources are applied to adequately document the SSC.

The graded approach does not eliminate or circumvent any of the elements or functions in the K Basins configuration management program. This approach does provide the process that identifies and integrates the existing methodologies of safety classification and operational requirements for classifying the relative importance of SSCs and the necessary documentation to support SSC classification. The following grading criteria serve as guidance to determine the amount of documentation necessary to control and maintain the configuration.

1.0 CRITERIA**1.1 SAFETY CLASSIFICATION**

Safety classifications (1 & 2, 3, and non-safety class 4) consider the potential consequences and impacts to the environment, public, and K Basins personnel in the event of a release of radiological and/or toxicological material. SSCs are classified according to their ability to prevent or mitigate the consequences of hazards and design requirement accidents in accordance with the criteria established in WHC-CM-1-3, MRP 5.46.

1.2 SAFEGUARDS AND SECURITY

Protection measures that will prevent damage or destruction arising from deliberate acts of arson, civil disorder, riot, sabotage, terrorism, or vandalism; prevent unauthorized access; and deter and prevent theft of government property are considered.

1.3 DRAWING CATEGORY

SSCs are selected, categorized, and ranked based on their importance for safe operation and are depicted on the appropriate drawing category (essential, support, general, or construction) specified in WHC-CM-6-1, EP-1.3. Drawings that are identified as essential shall be re-evaluated if the SSC is used in limited operations in support of a reduced K Basins mission. If an SSC was identified as essential to support a K Basins limited operation and considered essential to support a reduced mission or deactivation, the drawing will remain essential.

APPENDIX B**CONFIGURATION MANAGEMENT GRADED APPROACH (continued)****1.4 SSC STATUS**

SSCs are categorized and ranked based on their planned or scheduled physical disposition. The physical statuses are:

- Operational.
 - Full - SSCs that are required to support day-to-day operation of K Basins and are operated at normal capacity.
 - Limited - SSCs that are operated on an as-needed basis or are operated at a reduced capacity.
- Non-Operational.
 - Operational capability is maintained.
 - Operational capability is not maintained.

1.5 DOCUMENTATION LEVELS

1. Full Documentation - The set of documentation (e.g., design basis and requirements, drawings, specifications, operating and maintenance procedures) that specifies the function or performance of SSCs or depicts the physical arrangement of or environment within which the SSC performs its intended purpose.
2. Partial Documentation - The set of design basis and requirements documentation that defines an SSC that is necessary to support the safe operation and maintenance of K Basins.
3. Minimal Documentation - The set of design basis and/or requirements documentation that defines a specific SSC that is necessary to support operations and maintenance of K Basins.

APPENDIX B

CONFIGURATION MANAGEMENT GRADED APPROACH (continued)

2.0 APPLICATION

The graded approach identifies the level of documentation that is required to define an SSC based on its importance to the K Basins. Table B-1 summarizes the criteria that is used to determine the types and amount of documentation that is required to define and support each SSC that is in the configuration management program.

Table B-1. Graded Approach Criteria.

Level of Documentation	Safety Classification			Safeguards and Security		Drawing Classification				SSC Status					
				SNF	Other	Essential	Support	General	Construction	Normal	Limited	Operational		Non Operational	
	1 & 2	3	4									Operational Capability is Maintained	Normal	Limited	Operational Capability is not Maintained
Full	R	OP	O P	R	OP	R	OP	OP	R	R	OP	R	OP	OP	
Partial		R	O P		OP		R	OP			R		R	OP	
Minimal			R		R			R						R	

R = Required

OP = Optional

Figure B-1 is used by starting with safety classification category and working down the flow path to determine what the highest level of documentation is required for the SSC under consideration.

3.0 DOCUMENTATION LEVEL RANKING

Once the SSCs have been generally categorized, situations may occur where more than one SSC requires the same level of documentation and these SSCs appear to be of equal importance. A second set of criteria may be required to rank SSCs within the same documentation level (full, partial, or minimum). The following ranking guidance is provided to assist in this grading for appropriate documentation.

APPENDIX B

CONFIGURATION MANAGEMENT GRADED APPROACH (continued)

First Ranking

SSC STATUS

Note: Order of importance of this priority is independent of safety classification.

- 1st Essential drawing
- 2nd SSC is for safeguards and security of spent nuclear fuel
- 3rd SSC is operational
- 4th SSC is non-operational: maintaining normal operational capability
- 5th SSC is operating on a limited basis
- 6th Support drawing
- 7th General drawing
- 8th SSC is non operational: not maintaining normal operational capability

Second Ranking

DOCUMENTATION CONDITION

- 1st Documentation is missing
- 2nd Documentation is incomplete and available information is inaccurate
- 3rd Documentation is complete and available information is inaccurate
- 4th Documentation is incomplete and available information is accurate
- 5th Documentation is complete and accurate

Third Ranking

SSC REMAINING LIFE

- 1st Greater than 10 years
- 2nd Between 5 and 10 years
- 3rd Between 2 and 5 years
- 4th Less than 2 years

APPENDIX B

CONFIGURATION MANAGEMENT GRADED APPROACH (continued)

Table B-2. Recommended Minimum SSC Design Basis Documentation According to Level.

DESIGN BASIS DOCUMENT	LEVEL		
	FULL	PARTIAL	MINIMAL
CALCULATION AND ANALYSIS	•	•	
COMPUTER SOFTWARE REQUIREMENTS	•		
FUNCTIONAL DESIGN CRITERIA	•		
FUNCTIONS AND REQUIREMENTS DOCUMENT	•	•	
SAFETY ANALYSIS REPORT (Preliminary/Final)	•		

Table B-3. Recommended Minimum SSC Requirements Documentation According to Level.

REQUIREMENT DOCUMENT	LEVEL		
	FULL	PARTIAL	MINIMAL
ACCEPTANCE TESTING	•		
COMPUTER SOFTWARE DOCUMENTATION	•		
DETAILED ENGINEERING DRAWINGS	•	•	•
EQUIPMENT LISTS	•	•	
FINAL SAFETY ANALYSIS	•	•	
FLOW DIAGRAMS (IEFDs AND P&IDs)	•	•	
OPERATIONS AND MAINTENANCE PROCEDURES	•	•	•
SPECIFICATIONS	•		
SYSTEM DESIGN DESCRIPTION	•	•	•
TECHNICAL SAFETY REQUIREMENTS	•		
VENDOR INFORMATION	•	•	

APPENDIX C

DOCUMENT SOURCE/LOCATION

DOCUMENT SOURCE	LOCATION	TYPE
Configuration Documentation Work Station (CDWS)	See HLAN, Hanford Information for CDWS locations	Release and control of engineering documents (drawings, ECNs, specifications, and supporting documents), with search capabilities by document number, revision, building, project number, keyword, etc.
CDWS Microfilm History File	MO-047/200E/131 (no phone calls)	Microfilm history file of engineering documentation (working file)
Construction Project Files	2750E/200E/D-176 373-3834	Active construction project documentation files
Records Vault Services	3707D/300/6 376-6411	Active and history vendor information, specification originals, and record copies (microfilm) of engineering documents
Document Support Services	Federal Building/383/700 Area 376-9535	Drawing originals and microfilm services.
Central Files	3706/300/210 376-5421	Active and history supporting documents (SDs), external publications (EPs), internal publications (IPs), speech articles (SPs), and miscellaneous reports (MRs) originals
Records Holding Area	712 Swift Street 376-0238	Records Holding Building for record copies of history documentation

APPENDIX D**CHANGE CONTROL BOARD CHARTER****1.0 INTRODUCTION**

A Change Control Board (CCB) ensures that the principles of configuration management are maintained through the establishment of adequate technical, cost, and schedule baselines and the necessary controls required for a disciplined change process to these established baselines.

1.1 PURPOSE

The optional facility CCB can serve as the forum for establishing and preserving the technical relationships presented in the configuration management program. The CCB: (1) evaluates change impacts within the facility or across facility boundaries, (2) dispositions proposed changes (programmatic changes that are recommended for approval, are processed in accordance with WHC-CM-2-5), (3) evaluates alternatives for changes, and (4) approves the configuration management program and subsequent changes.

1.2 SCOPE

This charter establishes the facility CCB, identifies the CCB membership and their associated responsibilities and primary functions, and establishes board policies and procedures that will be followed to control and manage changes made within the facility.

2.0 MEMBERSHIP

The CCB is comprised of members that have the knowledge of their respective organization to evaluate the proposed changes. The CCB membership composition is balanced to achieve fair representation of organizations in technical and programmatic areas. The CCB members (primary and authorized alternates) will be identified and formally documented, and such documentation will remain on file with the Change Control Administrator (CCA) or equivalent.

3.0 MAJOR RESPONSIBILITIES**3.1 CCB CHAIRPERSON**

The CCB Chairperson, appointed by K Basins management, will:

1. Preside over CCB meetings.
2. Ensure the necessary resources are available to adequately review and disposition proposed changes.

APPENDIX D**CHANGE CONTROL BOARD CHARTER (continued)****3.2 CHANGE CONTROL ADMINISTRATOR**

The change control administrator, identified by K Basins management, will:

1. Assign change identification numbers.
2. Maintain a central file for copies of change requests, ECNs, and status sheets.
3. Track the change and maintain status.

3.3 CCB MEMBERS

CCB members will:

1. Review and evaluate the proposed changes for technical, cost, and schedule impacts.
2. Recommend final change disposition.

4.0 RECORDS

Name (Filing Unit Title of Description)	Record Type*	Retention Period	Disposal Authority**	Cut-Off and Retirement Instructions
Records relating to establishment, organization, membership, and policy of the board.	R	Destroy two years after termination of committee.	GRS 16.8.a	Committee secretary retains. If the board disbands, send to permanent records storage facility.
Board records:	R	Destroy when three years old or when no longer needed for reference, whichever is sooner.	GRS 16.8.b	Destroy in office after retention period is complete. If the board is disbanded, send any remaining records to permanent records storage facility.
(1) Agenda, minutes, final reports, and related records documenting the accomplishments.				
(2) All other committee records.				

*R - Record Material

**GRS - General Records Schedules

GLOSSARY

Aging Degradation - Aging effects that could impair the ability of structures, systems, and components to meet their design requirements.

As-Built Drawing - An engineering drawing that has been validated through field inspection to reflect the actual (as-constructed/as-installed) configuration of an SSC and verified to be consistent with the design requirements.

As-Found - Information, often in the form of marked-up documents, that reflects the actual physical configuration and identifies any discrepancies with currently-approved facility documentation.

Baseline - A set of documented decisions that constitute an established reference position for control, status accounting, reviews, assessments, and changes. These decisions are delineated in selected technical and programmatic documents that are identified and controlled. Baselines are continually changing via an orderly control of changes as required by DOE-HQ, RL, and the configuration management programs, especially during the development phase. Therefore, the current baseline is always the previously approved baseline with all approved changes.

Change - Any alteration or addition, temporary or permanent, to the physical configuration, computer software, configuration management documentation, or design requirements. Changes not within current design requirements involve design changes. Identical replacements are not changes.

Change Classification - A system of classifying changes for WHC programs and projects, based on the threshold criteria and approval requirements identified in this plan.

Change Control - A process that ensures all changes are properly identified, reviewed, approved, implemented, tested, and documented.

Change Control Administrator - The person responsible for processing proposed changes and maintaining the Change Request database.

Change Boards - A board composed of technical and administrative representatives who review, approve, disapprove, or defer changes to an approved cost, schedule, or technical baseline. These boards may be established by the WHC program, contractors, or individual projects.

Change Control Board (Programmatic) - A board composed of technical and administrative representatives from WHC and RL who review, approve, disapprove, or defer programmatic changes to an approved cost, schedule, or technical baseline. In addition, other site contractors, that support the WHC, may have their own change boards with well defined procedures and/or charters.

Change Control Board (Facility) - An optional board composed of technical and administrative representatives of the WHC program and project functional areas who evaluate and approve, disapprove, or defer proposed changes to an approved baseline configuration item. This board becomes mandatory when a proposed change from one project has an impact on another project or outside services.

GLOSSARY (continued)

Change Identification Number - The number assigned to each programmatic change request for tracking and reporting purposes.

Change Request - The document used to initiate changes to approved program cost, schedule, and technical baselines and uniquely identified by a change identification number. The change request is used to document change proposals that require dispositions by RL.

Computer Software - A set of computer source codes and/or commercial software, with the procedures, rules, and associated documentation and data pertaining to the operation of computer systems and includes user-provided instructions and data that implement pre-programmed algorithm control systems; computer codes and data that will reside in firmware; and, when specified by the cognizant manager, user-provided instructions and data used by commercial computer software such as spreadsheet and database packages.

Configuration - The functional and/or physical characteristics of hardware, firmware, or software as delineated in technical documentation and achieved in a product (form, fit, and function).

Configuration Management - An integrated management program that establishes consistency among design requirements, physical configuration, and facility documentation, and maintains this consistency throughout the life of the facility as changes occur. The configuration management program consists of configuration management functions associated with the following program elements: program management, design requirements, document control, change control, and assessments. The configuration management program also includes design reconstitution and material condition and aging management as adjunct programs.

Configuration Management Authority - An individual within the WHC program or project organization that is responsible with overseeing that organizations implement configuration management program. This responsibility includes, but is not limited to, developing and/or maintaining appropriate configuration management plans and procedures.

Design Authority - The organization responsible for establishing the design requirements and ensuring the design output documents appropriately and accurately reflect the design basis. The design authority is responsible for design control and ultimate technical adequacy of the engineering design process.

Design Basis - Consists of the design inputs, the design constraints, and the design analysis and calculations. It includes topical areas such as seismic qualification, fire protection, and safe shutdown. The design basis encompasses consideration of factors such as facility availability, facility efficiency, costs, and maintainability, and that subset that relates to safety and the authorization basis. The design basis explains why a design requirement has been specified in a particular manner or as a particular value.

GLOSSARY (continued)

Design Reconstitution - An adjunct program to the configuration management program that accomplishes the one-time effort of identifying, retrieving, extracting, evaluating, verifying, validating, and regenerating missing critical design requirements and basis. Design reconstitution encompasses the following functions: developing associated program plans and procedures; identifying and retrieving design information from identified source documents; evaluating, verifying, and validating the design information; resolving discrepancies; regenerating missing critical design information; and preparing and issuing Design Information Summaries.

Design Requirements - Those engineering requirements reflected in design output documents (such as drawings and specifications) that define the functions, capabilities, capacities, physical sizes and dimensions, limits and setpoints, etc., specified by design engineering for a structure, system, or component. The design requirements provide the results of the design process.

Design Review - An evaluation of structure, system, and component designs to ensure that requirements and considerations (both normal and emergency) of electrical, mechanical, thermal, hydraulic, safety, producibility, reliability, maintainability, quality, inspectability, interfaces, engineering standards, design, and fabrication practices are met for the intended application.

Document Control - A process that stores and controls, tracks status (especially during revisions), and retrieves documents.

Engineering Change Notice - A form used to document, approve, and control changes to engineering documents.

Engineering Document - Any text-type or pictorial information that describes, defines, specifies, reports, or certifies activities, requirements, procedures, or results of engineering activities and contains engineering and technical information that communicates concepts, plans, descriptions, criteria, requirements, standards, and instructions.

Engineering Drawing - A document that depicts by means of graphics, pictorial, and/or textual presentations the form, fit, and function requirements of item(s).

Facility Documents - Those documents that support facility operations, such as-built configuration information (such as drawings, valve lists, etc.), the facility procedures for activities (such as operations, maintenance, and testing), and facility operational records (such as completed tests, work requests, and radiation survey maps).

Field Validation - For the design reconstitution program, the process of providing reasonable assurance that design requirements are properly reflected in the physical configuration and in the associated facility documentation. Field validation tests the strength of the basic configuration management relationships among the design requirements, physical configuration, and facility documentation.

Formal Design Review - Design verification performed by a systematic overall critical review and evaluation of a design by a committee representing various disciplines.

GLOSSARY (continued)

Functional Design Criteria - A formal document, normally prepared for DOE-controlled projects, that provides a summary description of new or modified structure, system, or component.

NOTE: Functional Design Criteria completely documents minimum concepts and requirements to form a basis and to provide limitations governing design for a complete, safe, and operable facility adequate for its intended use.

Graded Approach - A process by which the level of analysis, documentation, and actions necessary to comply with a requirement are made commensurate with many considerations, including the relative importance to safety, safeguards, and security; the magnitude of any hazard involved; the life cycle stage of a facility; the programmatic mission of a facility; the particular characteristics of a facility; and any other relevant factor.

Life Extension - Actions specifically designed to reduce aging stresses or reduce the effects of aging stresses for facility potentially life-limiting components, as might be necessary to achieve the desired lifetime.

Material Condition & Aging Management - An adjunct program to the configuration management program that encompasses the functions of: developing associated program plans and procedures; screening components to determine those that are potentially life-limiting for the facility; evaluating, aging degradation mechanisms; estimating the facility remaining lifetime; evaluating feasibility of continued operations and extended operations; performing detailed material condition and aging analysis; and developing necessary life extension techniques to achieve the facility desired lifetime defined by DOE.

Mission Essential SSC - Any SSC that is required to accomplish the K Basins mission.

Physical Configuration - The actual physical location, arrangement, and material condition of structures, systems, and components within a facility.

Project Review - A review of engineering design documents by WHC to ensure that the design meets the criteria established in the technical baseline documents.

Release - An activity that certifies by a stamp that the engineering document is the controlled version, approved for the intended use, entered in a database, and retrievable.

Structure, System, or Component Grade - A measure of the importance of structures, systems, and components (SSCs) within the facility, based on the most important design requirements applicable to the SSC, that can be used to determine priorities and proper levels of attention and resource allocations. Examples of SSC grades and associated priorities are: (1) safety, (2) environmental, (3) mission, and (4) others.

GLOSSARY (continued)

Supporting Documents. An engineering text document that describes, defines, reports, or certifies activities, requirements, procedures, or results of engineering activities that support the WHC onsite missions.

NOTE: Other technical work may use the SD system of identification, review, release, and change control.

Systems Engineering - The systematic approach used by management and engineering to transform technical goals into an optimized, integrated, operational, and physical system that achieves the mission. The iterative technical and management process applied throughout the system life cycle that produces and maintains a well-defined and documented system technical baseline.

Technical Baseline - The defined and approved physical/functional configuration (requirements and design description) of an SSC or computer software that is used as a reference for program planning purposes and as a point of departure for change control. The technical baseline plus approved changes, waivers, and deviations constitutes the current configuration.

Turnover Requirements - Facility physical conditions that will be met and documentation that is provided before a facility is turned over.

Vendor Information - Any type of technical documentation/information submitted by a vendor as part of a procurement.

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