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# TWRS Authorization Basis Configuration Control Summary

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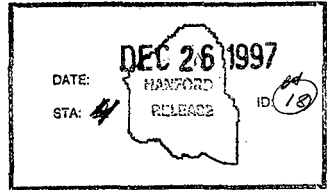
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Abstract: This document was developed to define the Authorization Basis management functional requirements for configuration control, to evaluate the management control systems currently in place, and identify any additional controls that may be required until the TWRS Configuration Management system is fully in place.

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**TWRS AUTHORIZATION BASIS  
CONFIGURATION CONTROL SUMMARY**

## EXECUTIVE SUMMARY

The U. S. Department of Energy, Richland Operations Office (RL) has identified in a management assessment the need to clarify the controls used for the configuration management of the Tank Waste Remediation System (TWRS) Authorization Basis. This document specifically addresses Finding 18a of the RL management assessment.

Configuration Management of the Authorization Basis (AB) and its approved changes is required to maintain the AB baseline. This document was developed to define the Authorization Basis Configuration Management functional requirements, to identify the management control systems currently in place, and identify any additional controls that may be required until the TWRS Configuration Management Plan is strengthened.

Evaluation of the existing process used for the management of the authorization basis concluded that the applicable elements of configuration management are in place for the effective management of the TWRS Authorization Basis.

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## LIST OF TERMS

AB	Authorization Basis
ARMI	Authorization Basis Requirements Management Interface
BIO	Basis for Interim Operation
CM	Configuration Management
CMIP	Configuration Management Implementation Plan
CMP	Configuration Management Plan
DID	Defense-In-Depth
ECN	Engineering Change Notice
FDH	Fluor Daniel Hanford
ISMS	Integrated Safety Management System
JCO	Justification for Continued Operation
MA	Management Assessment
MOU	Memorandum of Understanding
NS&L	Nuclear Safety & Licensing
PIAB	Potential Inadequacy in the Authorization Basis
PHMC	Project Hanford Management Contractor
PRC	Plant Review Committee
RA	Readiness Assessment
RL	U. S. Department of Energy, Richland Operations Office
SSC	Structure, System, and Component
TIMS	Training Information Management System
TSR	Technical Safety Requirement
TWRS	Tank Waste Remediation System
USQ	Unreviewed Safety Question

## 1.0 INTRODUCTION

Documents describing aspects of the facility design basis and operational requirements relied upon by the U. S. Department of Energy, Richland Operations Office (RL), to authorize operations are designated as the Authorization Basis (AB) documents. These descriptions (equipment, requirements, assumptions, etc.) in the AB are essential to the safety of facility operations. Maintaining the AB documents under Configuration Management is one element of the TWRS integrated safety management system (ISMS) which ensures the consistency, formality, and rigor essential to safety management.

The Tank Waste Remediation System (TWRS) has an established, RL approved list of AB documents and controls (Wagoner 1997), which includes the TWRS Basis for Interim Operation (BIO), and its associated Technical Safety Requirements (TSRs). This complete set of documents comprising the TWRS AB defines the safety envelope (i.e., the risk) that RL has determined to be acceptable for TWRS operation. The TWRS AB baseline is made up of this set of documents plus or minus any approved changes. It is essential that the AB baseline be maintained under a Configuration Management Program.

The Hanford Site Configuration Management System (CM) as described in HNF-MP-013, *Configuration Management Plan*, was used as the reference for the development of this document. The TWRS AB configuration management activities and implementation will integrate with the TWRS Configuration Management Plan (CMP) and the TWRS Configuration Management Implementation Plan (CMIP) when revised. This document follows the general outline of HNF-MP-013 with emphasis on requirements for CM of the TWRS AB.

### 1.1 Purpose

The purpose of this document is to identify the configuration management process required to maintain the TWRS AB documents and to identify the existing procedures and controls that implement this process. Identification of the CM process will improve the degree of confidence in the management of the TWRS AB and its data, and improve the availability of the AB data and information.

This document specifically addresses Finding 18a identified by the DOE/RL TWRS Management Assessment (MA), documented in U.S. Department of Energy, Richland Operations Office, Tank Waste Remediation System Management Assessment - Volume 1, *Determination of Readiness to Implement Tank Waste Remediation Basis for Interim Operations*, DOE/RL-97-72, Rev. 0. This finding specifically stated, "Configuration Management was the most prevalent issue raised during the MA and Readiness Assessment (RA) reviews. The MA is in agreement with the statement in the RA report that the change control process does not assure timely plant management review of modifications to the implementation of defense-in-depth features, or other similar requirements in the BIO. The current change control processes do not ensure that changes to plant processes or controls which affect defense-in-depth features, assumptions or commitments in the BIO will receive an appropriate level of review and approval within the operating contractor or within the integrating contractor."

## 1.2 Scope

Finding 18a identified by the DOE/RL TWRS MA referenced defense-in-depth (DID) features which are existing engineered features or administrative programs or procedures that may further reduce the risk of an accident, but are not essential requirements like safety structures, systems, and components and TSR controls. Chapter 4.0 of the BIO specifically identifies the following disciplines to be DID systems and components: existing configuration management processes, approved work authorization and work control processes, management oversight and assessment programs, quality assurance processes and procedures, and training on approved written procedures.

This document addresses the CM implementation activities associated with the management and maintenance of the TWRS AB baseline (including quality assurance, training, procedures, etc.) to assure that changes are controlled, tracked, archived, completed, and implemented. Only the control of AB information and data is addressed by this document.

Configuration Management of TWRS hardware and equipment items (both safety SSCs and DID SSCs) are documented in HNF-SD-WM-SEL-040, *TWRS Facility Safety Equipment List*, and will be outlined in the TWRS CMP and the CMIP and addressed by those organizations that operate and maintain these items. They are therefore excluded from the scope of this document.

## 2.0 RESPONSIBILITIES

This section identifies the roles and responsibilities specific to TWRS AB CM process. Roles and responsibilities specific to the processes described in this document are outlined in the respective implementing procedures identified in Table 1.

### 2.1 U. S. Department of Energy

RL has the sole responsibility for evaluating and approving the AB. RL has committed to developing and establishing the requirements and appropriate implementing procedures that address the creation and maintenance of an AB docket system. This system will be used to prioritize and schedule RL Tier II and Tier III reviews of proposed AB changes.

### 2.2 Fluor Daniel Hanford

Fluor Daniel Hanford (FDH) is responsible for developing and establishing overall requirements and implementing procedures that address CM management responsibilities and methodologies. FDH is also responsible for the direct interface between RL (letters of direction, etc.) and TWRS subcontractors.

### 2.3 TWRS Engineering & Nuclear Safety

TWRS Engineering & Nuclear Safety is responsible for directing tasks relative to the development and maintenance of the TWRS Configuration Management Plan which provides the framework for system level CM of the AB.



## 2.4 TWRS Configuration Management Program

The TWRS Configuration Management Program manager has the overall responsibility for the development, management, and implementation of the TWRS Configuration Management Program. Responsibilities also include responding to configuration management related assessments and evaluation findings, and assuring integration with FDH configuration management requirements.

## 2.5 Nuclear Safety & Licensing

TWRS Nuclear Safety & Licensing (NS&L) has the overall responsibility for maintaining and implementing the TWRS AB Configuration Management process. This includes the following responsibilities:

- Develops, delivers, and maintains the authorization basis documents for TWRS facilities including supporting safety analyses and attendant Technical Safety Requirements.
- Develops, implements, and maintains a system for managing safety documentation.
- Maintains an Unreviewed Safety Question (USQ) process.

In addition, the NS&L manager has the responsibility to assure that all proposed changes to the AB are formally communicated to RL for inclusion on the RL docket.

## 2.6 Plant Review Committee

The Plant Review Committee (PRC) is composed of personnel appointed by the Vice President, Tank Waste Operations. The PRC has ultimate contractor authority and responsibility for the management of the TWRS AB. Specific responsibilities include:

- Evaluation against the TWRS AB of any issues submitted to the Plant Review Committee.
- Evaluation of issues concerning the identification and resolution of unreviewed safety questions, justifications for continued operation, and other matters relating to Tank Waste Operations.
- Interpretation of the intent of technical safety requirements and transitional requirements (Operational Safety Requirements and Interim Operational Safety Requirements) and other matters relating to the safe operation of the TWRS facilities.

## 3.0 CONFIGURATION MANAGEMENT SYSTEM REQUIREMENTS

HNF-MP-013, Configuration Management Plan, was reviewed as part of the development process for this document. The applicable elements defined in HNF-MP-013 that apply to the CM of the TWRS AB are CM item identification, configuration status accounting, change control, and configuration management program assessments.

The TWRS AB CM process is shown in Figure 1, *TWRS AB Configuration Management Processes*. This figure identifies the sub-processes required to manage the AB baseline, and identifies the boundaries of responsibility for A3 configuration management, the interfaces with other processes, and related sub-processes. Also shown in Figure 1 are the process flows, and the process input/outputs.

### 3.1 CM Item Identification

CM item identification is required in order to establish a baseline that will be managed under CM. This requires identification of the information and the responsibilities for the control of AB portion of the technical baseline. The AB baseline consists of the current RL approved AB documents, plus any approved changes to the AB. AB baseline management functions include the identification of change initiators, implementation of a change control process, and establishing implementation interfaces.

### 3.2 Configuration Status Accounting

Configuration Status Accounting is the processing and recording of changes to the approved AB baseline to maintain a continuous record of the TWRS AB. This includes for each of the documents that make up the AB the revision level, current status, document owner, and information regarding changes (change traceability) and other data necessary for control and tracking, such as storage locations.

### 3.3 Change Control

A fundamental principle of configuration management is that all changes must be accomplished by a systematic and measurable change process. The change control process assures that all potential changes are identified, evaluated, and controlled for the purposes of maintaining the TWRS AB baseline. Applicable elements and functional requirements of change control include the following:

- Evaluation of Changes - All proposals for temporary or permanent changes must be identified and evaluated to determine if an activity is within the existing TWRS AB. Changes will be classified (e.g., within AB, outside AB, or categorically excluded) to determine review and approval levels.
- Process Change as Amendment - Changes determined to be outside the existing TWRS AB will be processed as an amendment to the existing TWRS AB. Amendments include additions, deletions, modifications to AB documents such as the B10 and TSRs, or the development of new Justifications for Continued Operations (JCOs) or other stand alone AB documents.
- Amendment Change Approval - Those changes determined to be outside the existing TWRS AB will require RL review and approval. Processes will be established for the notification and scheduling of RL reviews.

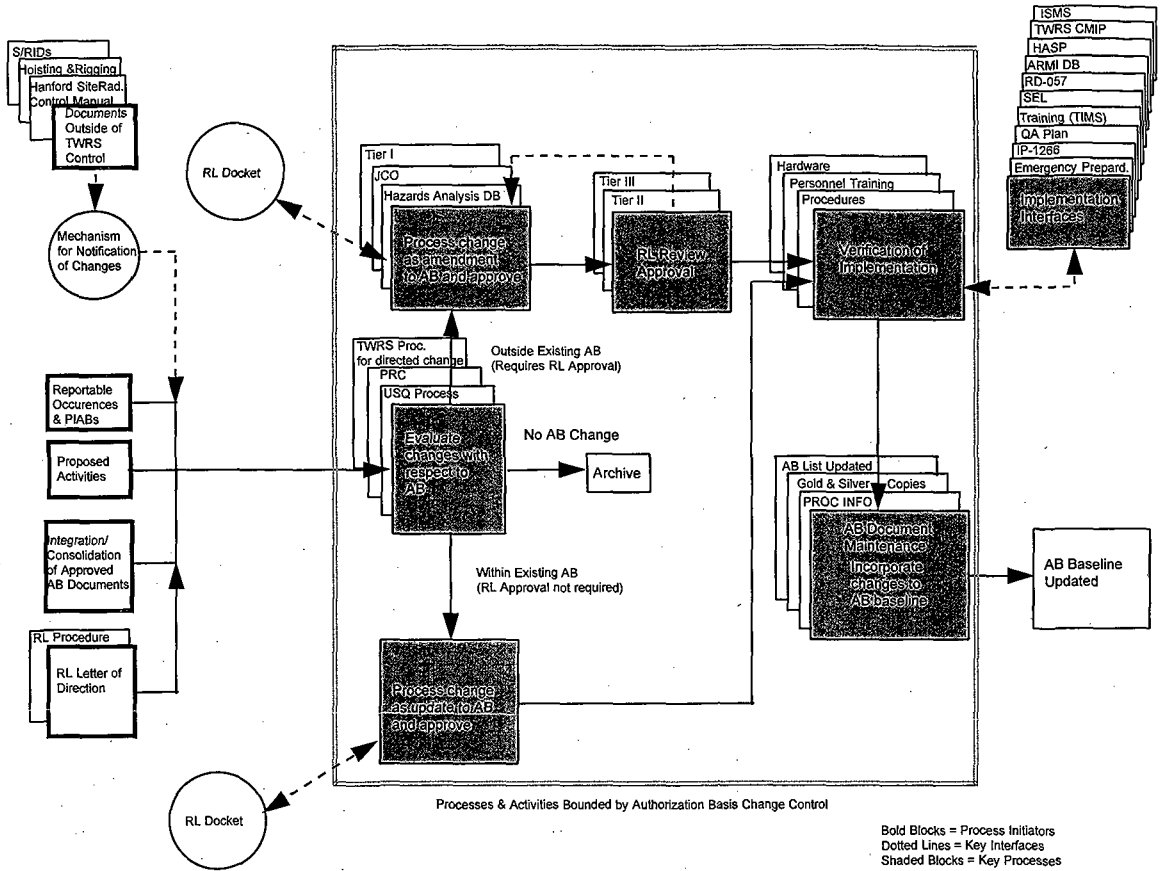


Figure 1 TWRS Authorization Basis Configuration Management Process

- Implementation and Verification - Implementation plans establishing key interfaces for training, procedures, etc., may be developed for approved amendments depending on the complexity of the change. These implementation plans will be used as a map for the initial implementation of the change and will be integrated into a compliance matrix to be used to demonstrate compliance during normal operations and to maintain integrity of the TWRS AB. Verification of implementation will also be performed, including readiness reviews and physical verifications when needed.
- Periodic Updates - The TWRS AB must be maintained consistent with certain documents and the physical attributes of the facility. Periodic updates will provide for the improvement of the TWRS AB through the incorporation of information not requiring RL approval. The update process includes the contractor review and approval process as well as a flowdown into the implementation process for incorporation of the change(s) consistent with that described for AB amendments.
- Document Maintenance - Information will be made available to users by controlled means to assure that the information (paper and electronic copies) is current and available. TWRS AB documents will be updated to reflect RL approved changes.

### 3.4 Configuration Management Program Assessment

Configuration Management requires periodic assessments to evaluate the adequacy, effectiveness and efficiency of the CM Program. Implementation of the assessment requirements are addressed in Section 4.5.

## 4.0 EXISTING CONTROLS AND PROCEDURES

HNF-PRO-430, *Safety Analysis Program* is the integrating contractor procedure that outlines the requirements for the management of the AB. It establishes and interprets the safety analysis requirements and processes for the development and maintenance of the safety basis documentation for Project Hanford facilities based on applicable DOE Orders, Standards, and Policies as well as Hanford specific requirements.

The following sections describe the existing procedures and methods used to implement TWRS AB configuration management. This description follows the logic shown in Figure 1.

### 4.1 CM Item Identification (Baseline Identification)

The TWRS AB includes the Basis for Interim Operation (BIO), its associated Technical Safety Requirements (TSRs), along with those additional RL approved documents and controls (Wagoner 1997) defined at the time the BIO was implemented. The approval of BIO, the TSRs, and other TWRS AB documents and their subsequent implementation (September 29, 1997) represents the establishment of the current TWRS AB baseline.

The current listing of the documents that make up the TWRS AB list are documented and maintained in HNF-IP-0842, Volume IV, Section 5.4, *Unreviewed Safety Question*, Attachment A. Changes to this listing are based on RL direction and implemented by HNF-IP-0842, Volume I, Section 2.1, *Procedure Development and Maintenance*. Changes to the AB baseline content are incorporated via Engineering Change Notices (ECNs) per WHC-IP-0842, Volume IV, Section 3.5, *Engineering Documents*.

#### 4.2 Configuration Status Accounting

The configuration status accounting is achieved through Document Maintenance described in Section 4.3.5.

#### 4.3 Change Control

The TWRS technical baseline change control process is currently under development and will be implemented via the TWRS CMIP when issued. This process will identify the CM requirements for the TWRS technical baseline.

This following section describes the existing controls and procedures used to implement change control for the TWRS AB.

##### 4.3.1 Evaluation of Change to AB

Work process activities are screened for compliance to the TWRS AB by the USQ procedure, HNF-IP-0842, Volume IV, Section 5.4, *Unreviewed Safety Questions*. The USQ Process is used to screen potential change initiators and provides a graded, consistent, uniform review with respect to the AB. Per the USQ procedure, work activities that are evaluated and found to have a potential for being outside the existing AB boundaries, require detailed evaluations to be performed, including reviews by the Plant Review Committee (PRC) when necessary. Changes to the AB may be triggered when a proposed activity is determined to be outside of the existing AB. Change initiators include work process activities, revisions to procedures, design changes, modifications, reportable occurrences, Potential Inadequacies in the Authorization Basis (PIABs), tests and experiments, new requirements, lessons learned, RL directed changes, and the revisions to documents outside the control of TWRS that may be relied on to implement safety basis requirements. Documents outside the control of TWRS include the Hanford Site Hoisting & Rigging Manual and the Hanford Site Radiological Control Manual, as examples.

One outcome of the USQ Process is the conclusion that the activity, item, or situation is outside the existing AB and requires an RL approved AB amendment to proceed with the activity. The USQ process may also determine that the activity, item, or situation is within the existing AB; but an update to the AB is required (e.g., editorials, items determined not to be a USQ and require a description change in TWRS AB). This type of change would be processed via a periodic update to the AB. These processes are discussed in the sections below.

#### 4.3.2 Authorization Basis Amendment and Approval

The procedure for development, review, approval, and implementation of amendments is summarized below.

HNF-IP-0842, Volume IV, Section 5.10, *Authorization Basis Amendments and Annual Updates* is the procedure used to process changes to the TWRS AB baseline. The roles and responsibilities for generation, review, approval, and implementation of TWRS authorization basis amendments and periodic updates are contained in this procedure. Review designations for FDH are contained in HNF-PRO-233, *Review and Approval of Documents*.

An AB Amendment Package is the vehicle by which the TWRS AB baseline is modified to encompass projects and activities determined to be outside the existing AB baseline. The preparation of this package may include AB Amendment task planning, non-waste hazardous materials inventory/tank waste inventory updates, safety analysis preparation, safety analysis review, an Amendment Implementation Plan, AB document ECNs, and interfaces for contractor and RL review and approval. This package may also include approved JCOs for incorporation into the TWRS AB.

#### 4.3.3 Verification of Implementation

Facility compliance is defined in six program elements which include: a procedure compliance matrix for recording and tracking procedure compliance, an equipment matrix to record safety class and safety significant components, a training matrix to record safety related training for facility personnel, a quality assurance plan, the Unreviewed Safety Questions (USQ) process, and an AB configuration management process.

Implementation of the TWRS AB requirements and commitments and maintenance of facility compliance to the TWRS AB is accomplished through the use of the procedure compliance matrix, the equipment matrix, and the training matrix, that identify safety basis requirements that are incorporated and implement Authorization Basis, compensatory measures (if any), and any approved amendments or revisions to the Authorization Basis documents as identified in Appendix A of the USQ procedure.

Facility compliance is evidenced within TWRS by the following:

- Authorization Basis Requirements Management Interface (ARMI) database which provides the traceability from AB requirements to implementing procedures for specific facilities
- *Safety Equipment List*, HNF-WM-SD-SEL-040; and *Tank Waste Remediation System Safety Structures, Systems, and Components: Requirements and Characteristics*, WHC-SD-WM-RD-057, provide equipment and systems identification and documentation
- Quality Assurance Plan
- Training Information Management System (TIMS)
- Unreviewed Safety Question process outlined in HNF-IP-0842, Volume IV, Section 5.4

These Administrative programs collectively ensure that the safety controls in the TWRS Authorization Basis documentation are implemented in TWRS.

#### 4.3.4 AB Update and Approval

As referenced in Section 4.3.2, HNF-IP-0842, Volume IV, Section 5.10, *Authorization Basis Amendments and Annual Updates* is the procedure used to process changes to the TWRS AB baseline, and details specific requirements for development, review, and approval of periodic updates.

The AB Update process provides the means for incorporating approved changes and editorial improvements into the AB documentation. Updates to the TWRS AB occur periodically, at least annually. It is not a process for "upgrading" the AB. Approved changes include approved AB Amendments and Justifications for Continued Operation that have gone through the amendment process. The AB Update process includes the collection of, physical updates, verifications, other editorial changes, and consolidation/integration of previously approved AB documents (e.g., Operation Safety Requirements and other obsolete AB documents).

#### 4.3.5 Document Maintenance

Document maintenance ensures that the TWRS AB documents are correct and available. Document maintenance encompasses how RL approved AB Amendments and Update changes will be incorporated into the AB documents, how the electronic copies of the TWRS AB documents are to be updated and maintained, and controls the transmittal of information across organizational interfaces within the entire process.

Changes to the TWRS AB documents are incorporated via the Engineering Change Notice (ECN) process outlined by WHC-IP-0842, Volume IV, Section 3.5, *Engineering Documents*, and tracked by the site level Document Control System.

The BIO and TSRS are the primary AB documents defining the controls for the TWRS Facilities. These AB documents are kept under controlled distribution. Changes generated via the ECN process for these documents are distributed in accordance with, HNF-PRO-225, *Distributing Copy-Controlled Unclassified Documents*. The remaining AB documents (e.g., RL letters, Safety Evaluation Reports, etc.) are maintained as Non-Copy-Controlled Documents. These documents are distributed in accordance with HNF-PRO-228, *Central Files and Distribution of Non-Copy-Controlled Documents*.

TWRS NS&L maintains individual sets of the AB as record documents under direct custodial control. Field copies under direct custodial control are maintained in the following areas:

- 200 East Area Shift Office, TWRS Operations - Double Shell Tanks
- 200 West Area Shift Office, TWRS Operations - Single Shell Tanks
- TWRS Nuclear Safety & Licensing Office
- TWRS Operations - Characterization Project Operations
- RL TWRS Safety & Characterization Division Office

These field copies are designated as "Silver" copies. An additional set located in the Lockheed Martin Hanford Company Tank Characterization & Safety Resource Library is the "Gold" copy and which is the master field copy. Bi-monthly quality control checks are performed on these documents per desk instructions to ensure latest changes have been incorporated. Latest changes are verified by review of the site level Document Control System.

Electronic versions of the BIO and TSR documents are available for use via Procedure Information (PROC INFO). PROC INFO provides the link to the shared drive area where the controlled electronic files of the BIO/TSRs are maintained. Changes to the electronic version are coordinated through the TWRS NS&L organization. The shared area is a "password-protected write area" and any updates to the electronic files are completed after ECN approval and issuance.

Databases and electronic information management system requirements for the control, maintenance, data verification, record, and archive will be addressed by the TWRS CMP and therefore are outside the scope of this document.

#### 4.4 Supporting Activities and Interfaces

Also identified during this evaluation were other activities that interface with the management and administration of the AB. These activities and items support the maintenance of the TWRS AB but are not directly a part of the TWRS AB CM process, and therefore are not described in this document. Figure 1 identifies where these interfaces occur with respect to the TWRS AB process. These interfaces include:

- Emergency Preparedness
- Training Information Management Systems
- Quality Assurance Plan
- Safety Equipment List
- TWRS Health & Safety Plan
- Operations Administrative Control Manual (HNF-IP-1266)
- WHC-SD-WM-RD-057, TWRS Safety SSCs: Requirements & Characteristics
- ARMI Database
- TWRS CMIP
- Integrated Safety Management System (ISMS)

These interfaces will ultimately be defined and managed via the TWRS CMP and ISMS. Changes to TWRS-owned procedures (HNF-IP-0842) that are relied upon by the TWRS AB are required to go through the USQ process per HNF-IP-0842, Volume I, Section 2.1, Procedure Development and Maintenance. A listing of the HNF-IP-0842 procedures relied upon by the TWRS AB is provided in PROC INFO. Interim measures have been established to ensure that changes to documents outside TWRS control that are relied upon by the TWRS AB are reviewed by NS&L for impacts to the TWRS AB. This includes a revision to HNF-IP-0842, Volume IV, Section 5.6, Authorization Basis Facility Compliance Matrix, to provide a controlled list of documents outside of TWRS control (e.g., Hanford site-level procedures, DOE/RL Hoisting & Rigging Manual, Hanford Site Radiological Control Manual, etc.). The responsibility for evaluating changes to these documents for potential impacts to the AB and updating the controlled list for approved revisions non-TWRS documents is also included in the revision to HNF-IP-0842, Volume IV, Section 5.6.



#### 4.5 Configuration Management Program Assessments

Assessments supporting configuration management are performed at several levels within TWRS, including both independent and internal assessments. The TWRS CMP will address and incorporate those existing (e.g., Facilities Evaluation Board, Management Observation Program) internal and external independent assessment systems and the specifics on protocols, schedules, plans, and corrective actions, etc. No additional independent assessments specific to the TWRS AB are necessary.

#### 4.6 Management of Defense-in-Depth Features

Defense-in-depth (DID) features include structures, systems, and components (SSCs) administrative and operations controls beyond those required by the TSRs. The DID structures, systems, components were not credited in the BIO accident analysis with prevention or mitigation of the accidents. Since credit was not taken in the analysis, they are not controlled at the same level as safety class/safety significant SSCs or TSRs. DID changes are made by ECNs that are approved by the contractor via standard engineering practices. The ECN process requires a USQ screen, therefore any changes will be reviewed against the TWRS AB. The changes are incorporated into the AB as required during the periodic updates.

The *TWRS Facility Safety Equipment List*, HNF-SD-WM-SEL-040, is being updated to include a listing of the DID SSCs. Changes to this document will be via the ECN process.

#### 5.0 CONCLUSION AND RECOMMENDATIONS

This document was developed to identify the current AB configuration management functional requirements, configuration control systems currently in place, and any additional measures that may be required to ensure maintenance of the TWRS AB baseline.

This review concluded that the existing procedures and controls used for the management of the authorization basis are adequate and implemented and that the applicable elements of configuration management are in place for the effective management of the TWRS Authorization Basis.

In order to further assure this process is maintained the following recommendations are provided.

1. TWRS Configuration Management Plan is currently in revision. The TWRS CMP, once issued, should be reviewed to ensure the CM requirements with respect to the TWRS AB are met and that the TWRS AB CM process is transitioned under the overall TWRS CM Plan.

Recommendation 1: Reconcile the TWRS AB CM process identified in this document with respect to the TWRS CMP. Ensure that the interface requirements and controls are established in the TWRS CMP for the following:

- Electronic databases
- Configuration Management Assessments

2. RL directed changes are one mechanism that initiates change to the TWRS AB documentation. The process used to evaluate and implement the directed change is not formally defined.

Recommendation 2: Formally define the RL Directed Change Process to:

- Determine interface with FDH on the RL directed changes (HNF-PRO-107)
- Determine how RL direction with respect to changes to the TWRS AB is received and how it is integrated into the TWRS AB CM process
- Establish a mechanism to track all RL directed changes to the TWRS AB

3. Some of the procedures listed in Table 1 are relied upon by TWRS NS&L to implement portions of the TWRS AB Configuration Management process. Many of these procedures are not owned by TWRS NS&L.

Recommendation 3: Interface agreements/mechanisms must be formalized with the owners of these documents to ensure that proposed changes to these documents are evaluated with respect to the TWRS AB. It is intended that this will be included in the TWRS technical baseline change control process when finalized.

4. Some documents relied upon by the TWRS AB (e.g., Hanford site-level procedures, Hoisting & Rigging Manual, Hanford Site Radiological Control Manual, etc.) are outside of TWRS control.

Recommendation 4: Interface agreements/mechanisms must be formalized with the owners of these documents to ensure that proposed changes to these documents are evaluated (USQ Process) with respect to the TWRS AB. These interfaces will ultimately be defined and managed via the TWRS CMP and ISMS.

5. Procedures directly owned by TWRS NS&L which implement the TWRS AB CM processes are listed below:

- Plant Review Committee, HNF-IP-0842, Vol IV, Section 5.1
- Unreviewed Safety Question, HNF-IP-0842, Vol IV, Section 5.4
- Facility Compliance Matrix, HNF-IP-0842, Vol IV, Section 5.6
- Authorization Basis Amendments and Annual Updates, HNF-IP-0842, Vol IV, Section 5.10

Recommendation 5: Procedures listed above directly owned by TWRS NS&L will be addressed for process improvement and updated to reflect current organizational structures and more clearly present the requirements for TWRS AB configuration management.

6. Training on the TWRS AB CM process that has been identified by this document is needed to ensure personnel (e.g., engineering and operations) are made aware of this process and the implementing procedures.

Recommendation 6: Identify personnel and establish methods (e.g., shift meetings, PRC, etc.) for training personnel with respect to the TWRS AB CM process and the procedures and controls that implement the process.

Table 1 - Topical Section References & Implementing Procedures

Section	Subject	Procedure Document Number	Title of Procedure
1.0	Authorization Basis (AB)	HNF-SD-WM-BIO-001, Rev 0	TWRS Basis for Interim Operation (BIO)
	Technical Safety Reqmts. (TSR)	HNF-SD-WM-TSR-006, Rev 0	TWRS Technical Safety Requirements
	Configuration Management Plan	HNF-SD-WM-CM-013	TWRS Configuration Management Plan
	Config. Mgmt. Imp. Plan (CHIP)	HNF-SD-WM-CM-014	TWRS CM Implementation Plan
	Configuration Management	HNF-MP-013	Configuration Management Plan
1.1	DOE/RL Mgmt. Assessment	DOE/RL-97-72, Rev 0, Mgmt Assessment	Readiness to Implement TWRS Basis for Interim Operations
2.0	Configuration Management	HNF-MP-013	Configuration Management Plan
		HNF-SD-WM-CM-014	TWRS CM Program Implementation Plan
2.1	RL Docket	TWRS- XXX (draft in development)	Management of the TWRS Authorization Basis
2.3	Organizational Charter	HNF-IP-0842, Vol I, Section 3.30	TWRS Engineering and Nuclear Safety Charter
2.4	Organizational Charter	HNF-IP-0842, Vol I, Section 3.30	TWRS Engineering and Nuclear Safety Charter
2.5	Plant Review Committee	HNF-IP-0842, Vol IV, Section 5.1	Plant Review Committee
3.0	Configuration Management	HNF-MP-013	Configuration Management Plan
	Safety Basis	HNF-PRO-430	Safety Analysis Program
4.1	Baseline Management	HNF-PRO-430	Safety Analysis Program
	Baseline Documentation	HNF-IP-0842 Vol IV, Section 5.4	Unreviewed Safety Question, Attachment A
	Document Change	HNF-IP-0842, Vol I, Section 2.1	Procedure Development and Maintenance
	Eng. Change Notice	HNF-PRO-440	Engineering Document Change Control Process
		WHC-IP-0842, Vol IV, Section 3.5	Engineering Documents
4.3.1	Change Identification	HNF-IP-0842, Vol IV, Section 5.4	Unreviewed Safety Question
	AB Amendment & Update	HNF-IP-0842, Vol IV, Section 5.10	Authorization Basis Amendments and Annual Updates
4.3.2	AB Amendment & Update	HNF-IP-0842, Vol IV, Section 5.10	Authorization Basis Amendments and Annual Updates
	Amendment Imp. Plan	HNF-IP-0842, Vol IV, Section 5.10	Authorization Basis Amendments and Annual Updates
		HNF-PRO-233	Review and Approval of Documents
4.3.3	Eng. Change Notice	HNF-PRO-440	Engineering Document Change Control Process

Section	Subject	Procedure Document Number	Title of Procedure
		HNF-IP-0842, Vol IV, Section 3.5	Engineering Documents
	Controlled Distribution	HNF-PRO-225	Distributing Copy-Controlled Unclassified Documents
		HNF-PRO-228	Central Files and Distribution of Non-Copy Controlled Docs.
	AB Amendment & Update	HNF-IP-0842, Vol IV, Section 5.10	Authorization Basis Amendments and Annual Updates
	Safety Equipment Listing	HNF-WM-SD-SEL-040	Safety Equipment List
		HNF-IP-0842, Vol I, Section 2.1	Procedure Development & Maintenance
4.3.4	AB Update and Approval	HNF-IP-0842, Vol IV, Section 5.10	Authorization Basis Amendments and Annual Updates
4.3.5	Document Maintenance	WHC-IP-0842, Vol IV, Section 3.5	Engineering Documents
		HNF-PRO-225	Distributing Copy-Controlled Unclassified Documents
		HNF-PRO-228	Central Files and Distribution of Non-Copy Controlled Docs.
4.4	Supporting Activities & Interfaces	HNF-IP-0842, Vol IV, Section 5.6	Authorization Basis Facility Compliance Matrix
		HNF-PRO-225	Distributing Copy-Controlled Unclassified Documents
		HNF-PRO-228	Central Files and Distribution of Non-Copy Controlled Docs.
		HNF-PRO-653	Deficiency Tracking System
		HNF-IP-0842, Vol IV, Section 5.10	Authorization Basis Amendments and Annual Updates
		HNF-IP-0842, Vol IV, Section 5.4	Unreviewed Safety Question
		HNF-IP-0842, Vol IV, Section 3.4	Functional Requirements and Technical Criteria
		HNF-IP-0842, Vol IV, Section 5.1	Plant Review Committee
		HNF-IP-0842, Vol IV, Section 5.9	Identification of Safety Structures, Systems and Components
		HNF-IP-0842, Volume IV, Section 5.2	Safety Equipment Lists
4.5	Configuration Mgmt Program Assessments	HNF-IP-0842, Vol I, Section 2.10	Management Assessment Program
		HNF-IP-0842, Vol IV, Section 5.1	Plant Review Committee
4.6	Defense-in-Depth Changes	HNF-IP-0842, Volume IV, Section 3.5	Engineering Documents

## 6.0 REFERENCES

### DOE Documents:

DOE/RL-97-72, Rev. 0, U.S. Department of Energy, Richland Operations Office, Tank Waste Remediation System Management Assessment - Volume I, *Determination of Readiness to Implement Tank Waste Remediation Basis for Interim Operations*

DOE-STD-1073-93, *Guide for Operational Configuration Management*

Letter, J. D. Wagoner, RL, to H. J. Hatch, FDH, *Contract Number DE-AC06-96RL13200 - Approval of Tank Waste Remediation System (TWRS) Basis for Interim Operation (BIO) Readiness and Revised Authorization Basis, 97-SCD-024, dated September 12, 1997*

### Fluor Daniel Hanford Documents:

HNF-MP-013, *Configuration Management Plan*

HNF-PRO-107, *Responding to RL Direction*

HNF-PRO-225, *Distributing Copy-Controlled Unclassified Documents*

HNF-PRO-228, *Central Files and Distribution of Non-Copy-Controlled Documents*

HNF-PRO-233, *Review and Approval of Documents*

HNF-PRO-430, *Safety Analysis Program*

HNF-PRO-440, *Engineering Document Change Control Requirements*

HNF-PRO-653, *Deficiency Tracking System*

HNF-PRO-705, *Safety Basis Planning, Documentation, Review and Approval*

### TWRS Documents:

HNF-SD-WM-CM-013, *TWRS CM Program Plan*

HNF-SD-WM-CM-014, *TWRS CM Program Implementation Plan (CMIP)*

HNF-IP-0842, Volume I, Section 2.1, *Procedure Development and Maintenance*

HNF-IP-0842, Volume I, Section 2.10, *Management Assessment Program*

HNF-IP-0842, Volume I, Section 3.30, *TWRS Engineering & Nuclear Safety Charter*

WHC-IP-0842, Volume IV, Section 3.4, *Functional Requirements and Technical Criteria*

WHC-IP-0842, Volume IV, Section 3.5, *Engineering Documents*

HNF-IP-0842, Volume IV, Section 5.1, *Plant Review Committee*

- WHC-IP-0842, Volume IV, Section 5.2, *Safety Equipment Lists*
- HNF-IP-0842, Volume IV, Section 5.4, *Unreviewed Safety Questions*
- HNF-IP-0842, Volume IV, Section 5.6, *Authorization Basis Facility Compliance Matrix*
- WHC-IP-0842, Volume IV, Section 5.9, *Identification of Safety Structures, Systems, and Components*
- WHC-IP-0842, Vol IV, Section 5.10, *Authorization Basis Amendments and Annual Updates*
- HNF-SD-WM-SEL-040, Rev. 0, *TWRS Facility Safety Equipment List*
- HNF-SD-WM-BIO-001, Rev. 0D, *Tank Waste Remediation System Basis for Interim Operation*
- HNF-SD-WM-TSR-006, Rev. 0E, *Tank Waste Remediation System Technical Safety Requirements*
- WHC-SD-WM-RD-057, Rev. 0B, *Tank Waste Remediation System Safety Structures, Systems, and Components: Requirements and Characteristics*

## 7.0 DEFINITIONS

The following terms are used in this document. The definitions and sources are:

**Authorization Basis (AB)** - Documents describing aspects of the facility design basis and operational requirements relied upon by DOE to authorize operation. These aspects are considered to be important to the safety of facility operations. The authorization basis is described in documents such as the facility safety analysis report and other safety analyses, hazard classification documents, the technical safety requirements, DOE-issued safety evaluation reports, and facility-specific commitments made to comply with DOE orders or policies. (HNF-IP-0842, Vol IV, Section 5.8 *Development and control of TWRS Safety Bases.*)

(Characteristics of authorization basis documents are: 1) they are that portion of the safety basis approved by DOE as authorization basis documents; or 2) they are DOE prepared documents, either documents identified by DOE to be in the authorization basis or a DOE safety evaluation report (HNF-IP-0842, Volume IV, Section 2.3).)

**Baseline** - The original plan (for a project, a work package, or an activity), plus or minus approved changes. Usually used with a modifier, e.g., cost baseline, schedule baseline, performance measurement baseline, etc.) (*Configuration Management Plan*, HNF-MP-013)

**Configuration Control** - The process of controlling changes to a configuration and of stating that configuration. (HNF-MP-013, PHMC Configuration Management Plan)

**Configuration Management (CM)** - An integrated management program used to establish consistency among requirements, basis, functional configuration, and documentation, and maintains this consistency throughout the life of the product as the changes occur. (*Configuration Management Requirements Source Document* HNF-SD-WM-CM-016)

"The systematic evaluation, coordination, approval (or disapproval), documentation, implementation, and audit of all approved changes in the configuration of a product after formal establishment of its configuration identification" (DOE 5480.23, *Nuclear Safety Analysis Reports*)

**Configuration Management Controls** - The management controls and systems put in place to implement a configuration management program.

**Defense-In-Depth (DID)** - Engineered features and administrative programs and procedures that act to further prevent or mitigate accident risk beyond the safety structures, systems, and components and Technical Safety Requirement controls are identified as defense-in-depth controls. Defense-in-depth controls that provide for significant risk reduction were elevated to safety structures, systems, and components or Technical Safety Requirement controls. Although defense-in-depth items are not controlled as safety structures, systems, and components or Technical Safety Requirement controls, they add to overall safety and are governed

by configuration control procedures. Identification in the defense-in-depth controls increases the awareness of the contribution these features make to safety. (HNF-SD-WM-BIO-001 - *TWRS Basis for Interim Operation*)

**Plant Review Committee (PRC)** - A committee made up of senior managers trained in the Unreviewed Safety Question process who assist the Vice President, Tank Waste Operations, in making decisions concerning identification and resolution of unreviewed safety questions (USQs) and other matters relating to the safe operation of the tank farm facility. (*Plant Review Committee*, HNF-IP-0842, Volume IV, Section 5.1)

**Technical Safety Requirements (TSR)** - Those requirements that define the conditions, safe boundaries, and the management or administrative controls necessary to ensure the safe operation of a facility and to reduce the potential risk to the public and facility workers from uncontrolled releases of nonradioactive material, radioactive materials, or from radiation exposures due to inadvertent criticality. Technical safety requirements consist of safety limits, operating limits, surveillance requirements, administrative controls, use and application instructions, and the basis thereof. Technical safety requirements were formerly known as operational safety requirements for non-reactor nuclear facilities and technical specifications for reactor facilities (DOE 5480.22).

**Unreviewed Safety Question (USQ)** - An unreviewed safety question exists if any of the following circumstances hold:

- a. If the frequency of occurrence or the consequence of an accident or malfunction of equipment important to safety previously evaluated in the authorization basis could be significantly increased.
- b. If the possibility for an accident or malfunction of equipment of a difference type than any evaluated previously in the authorization basis could be created.
- c. If any margin of safety, as defined in the bases for any transitional requirements (Operation Safety Requirements, Interim Operational Safety Requirements) and Technical Safety Requirement (TSR) could be reduced.

(HNF-IP-0842, Volume IV, Section 5.4 *Unreviewed Safety Question*)

**USQ Process** (as used in this document) - The overall process used to determine if an unreviewed safety question exists and to obtain DOE authorization for continued operation. This process includes the screening of potential USQ initiating documents, USQ determinations, notifications to DOE, revision to the authorization basis by amendment, implementation plans, and the DOE approval/authorization.



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