
INSPECTION TECHNICAL PROCEDURE

I-107

AUTHORIZATION BASIS MANAGEMENT ASSESSMENT

August 15, 2003
Revision 2

Approved: Patrick C. Carier
Verification and Confirmation Official

Date: 8/27/03

Concur: Robert C. Barr

Date: 12/11/03

Table of Contents

1.0	PURPOSE	1
2.0	OBJECTIVES	1
3.0	DEFINITIONS.....	1
3.1	Authorization Basis.....	1
3.2	Authorization Basis Management.....	2
3.3	Changes.....	2
3.4	Unreviewed Safety Question	2
4.0	INSPECTION REQUIREMENTS	3
4.1	Authorization Basis Management Program.....	3
4.1.1	Contractor Review and Approval Processes.....	3
4.1.2	Safety Evaluation Process.....	4
4.1.3	Amendment Process.....	4
4.1.4	Authorization Basis Document Control.....	5
4.2	Authorization Basis Management Implementation	6
4.2.1	Contractor Review and Approval Processes for Changes	6
4.2.2	Safety Evaluations	6
4.2.3	Authorization Basis Document Control.....	6
4.2.4	Personnel Training and Qualifications.....	6
4.2.5	Management and Independent Oversight	7
5.0	INSPECTION GUIDANCE	7
5.1	Authorization Basis Management Program.....	7
5.2	Authorization Basis Management Implementation	8
6.0	REFERENCES	10
7.0	GLOSSARY	10

INSPECTION TECHNICAL PROCEDURE I-107, REV. 2

AUTHORIZATION BASIS MANAGEMENT ASSESSMENT

1.0 PURPOSE

This procedure provides WTP Safety Regulation Division (OSR) guidance to ensure the River Protection Project Waste Treatment and Immobilization Plant (WTP) Contractor is adequately implementing an authorization basis management process consistent with relevant requirements and Contractor commitments.

2.0 OBJECTIVES

This procedure verifies the following:

- The adequacy of the Contractor's procedures related to maintenance of the authorization basis
- The adequacy of the Contractor's integration of the authorization basis maintenance process with the approval process for changes to the WTP facility design and with project programs and procedures
- The safety evaluation process is being conducted consistent with the relevant Quality Assurance Manual (QAM) requirements
- The adequacy of the Contractor's authorization basis process implementation by reviewing Contractor records of design, procedure, and program document approvals to:
 - Determine the adequacy of records related to document approvals and changes
 - Determine the adequacy of Contractor assessments regarding the regulatory and safety significance of proposed changes
 - Verify individuals performing and reviewing safety evaluations are appropriately qualified
 - Verify that the authorization basis is being maintained current with respect to the approved WTP facility design and approved programs and procedures.

3.0 DEFINITIONS

3.1 Authorization Basis

The composite of information provided by a Contractor in response to radiological, nuclear, and process safety requirements that is the basis on which the DOE grants permission to perform

regulated activities. Details regarding the content of the authorization basis are provided in the authorization agreement for the particular phase of the project. For example, during limited construction, the authorization basis is specified in the Limited Construction Authorization Agreement.

3.2 Authorization Basis Management

As used in this inspection procedure, authorization basis management refers to all Contractor activities and processes used to control the authorization basis, including:

- Ensuring consistency is maintained between the facility design documents and procedures and the description of these items contained in the authorization basis
- Performing safety evaluations of proposed changes to the authorization basis, and when required, preparing authorization basis amendment requests for regulatory approval of proposed changes
- Managing authorization basis documents such that Contractor personnel have access to the latest controlled authorization basis information
- Preparing and submitting updates of authorization basis documents to the OSR for approval, or for information, in accordance with regulatory requirements.

3.3 Changes

Changes to the facility and administrative controls that are described in the authorization basis or relied upon by the Contractor to ensure conformance to the authorization basis.

As used above, "facility" refers to the physical facility, the hazards and safety analysis of the facility, and the work at the facility that is enveloped by the analyses. The facility is described in the authorization basis by the information such as: the site description, design information, hazard analysis information, safety information, and descriptions of facility operations, tests, and experiments.

As used above, "administrative controls" refers broadly to the management and administrative processes associated with managing, designing, building, or operating the facility. Administrative controls are described in the authorization basis by information such as the descriptions of procedures, programs, plans, and management processes.

3.4 Unreviewed Safety Question

An unreviewed safety question (USQ) is a safety question where any of the following conditions are satisfied: (1) the probability of occurrence or the radiological consequences of an accident or malfunction of equipment important to safety, previously evaluated in the facility safety analyses or other related safety analysis and evaluations not yet included in the updated facility analysis,

may be increased; (2) a possibility for an accident or equipment malfunction of a different type than any evaluated previously in the facility safety analyses or other related safety analysis and evaluations not yet included in the updated facility safety analysis, may be created; or (3) any margin of safety is reduced.

4.0 INSPECTION REQUIREMENTS

This inspection procedure provides guidance for verifying implementation of Contractor commitments relevant to authorization basis management. The requirements for authorization basis management stem from the Contract,¹ regulations, and Contractor commitments approved by the OSR. Standard 7, Section (e)(2)(ii)(D) of the Contract requires adherence to DOE/RL-96-0006, *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP Waste Treatment Plant Contractor*, Principal 4.1.3, and Section (e)(2)(iii) of the Contract requires that the ISMP conform with RL/REG-97-13, *Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*. Quality assurance requirements in 10 CFR 830, and Radiation Protection Programs requirements in 10 CFR 835 are also applicable to processing changes in the authorization basis.

The Inspection Requirements section is organized into two main subsections. The Authorization Basis Management Program (subsection 4.1) addresses verification that the Contractor has implemented procedural processes that adequately address authorization basis management. The Authorization Basis Management Implementation (subsection 4.2) addresses an assessment of adequacy of the Contractor's implementation of these procedures.

4.1 Authorization Basis Management Program

The QAM, 10 CFR 830.122(e)(1), and Section 3.1.b of RL/REG-97-13 establish requirements and Contractor commitments that specify important to safety activities such as authorization basis management that are to be conducted in accordance with approved procedures.

4.1.1 Contractor Review and Approval Processes

The inspector should verify the Contractor's procedures for approving design documents and procedures include measures that ensure consistency between facility design documents and procedures, and the description of the facility design and Contractor activities contained in the authorization basis, including the following:

- A process for determining if proposed new or modified design documents or procedures are consistent with the authorization basis. (RL/REG-97-13, Section 3.2)

¹ Contract No. DE-AC27-01RV14136 between the U.S. Department of Energy and Bechtel National, Inc., dated December 11, 2000.

A requirement that proposed new or modified design documents or procedures are consistent with the authorization basis prior to approval for implementation. (RL/REG-97-13, Section 3.2.b)

4.1.2 Safety Evaluation Process

Section 3.5 of RL/REG-97-13 specifies that the Contractor may revise the authorization basis (with the exception of the QAM and RPP) without prior OSR approval, if a safety evaluation is performed which demonstrates that the revision:

Does not involve the deletion or modification of a standard previously identified or established in the approved SRD

- Does not result in a reduction in the effectiveness of any program, procedure, or plan described in the authorization basis
- Does not involve the modification of an approved technical safety requirement (TSR) or does not result in a USQ. (These provisions only apply during facility operations.)

The inspector should verify the Contractor has established procedures for performing safety evaluations. These procedures should address the following:

- Guidance for performing safety evaluations and making determinations associated with the evaluation criteria described above. (RL/REG-97-13, Section 3.5)
- Appropriate review and approval of safety evaluations. (RL/REG-97-13, Section 3.1.c)
- Appropriate documentation of safety evaluations. (RL/REG-97-13, Section 3.5.b)
- Retention of safety evaluation records. (RL/REG-97-13, Section 3.5.b(2))

4.1.3 Amendment Process

Changes to the authorization basis that do not meet the safety evaluation criteria cited in Section 4.1.2 must be submitted as an amendment request to the OSR for approval prior to implementing the change. The following Inspection Requirements are related to the amendment process.

4.1.3.1 Amendments to Authorization Basis Documents

Section 3.6 of RL/REG-97-13 establishes requirements related to processing amendments to the authorization basis. The inspector should verify that the Contractor's applicable configuration control and authorization basis management procedures:

- Preclude the implementation of changes to the facility or administrative controls in the authorization basis until approval of an authorization basis amendment request is

received. (RL/REG-97-13, Section 3.6)

- Provide guidance for preparing amendment requests consistent with RL/REG-97-13, Section 3.6
- Require appropriate documentation of amendment requests and records retention. The inspector should also verify the procedures require changes in approved design inputs and quality standards, including that the reasons for the change are identified, approved, documented, and controlled. (RL/REG-97-13, Section 3.6, and QAM, Policy Q-03.1, Section 3.2.3)

4.1.3.2 Revisions to Authorization Basis Documents

Section 3.5 of RL/REG-97-13 establishes requirements related to handling revisions of authorization basis requirements. Section 3.3.3 of the ISMP provides the Contractor's commitments for this process. The inspector should verify that procedures are in place and used.

4.1.3.3 Amendments to the QAM

The inspector should verify the adequacy of the Contractor's procedures for making changes to the QAM have been implemented, including the submittal of changes that reduce the commitments in the program description previously accepted by the DOE, to the OSR prior to implementation. Implementation will be after approval by the OSR or 90 days after submittal, whichever comes first. (RL/REG-97-13, Section 3.3, 10 CFR 830.121(b)(1); and QAM, Policy Q-02.1, Section 1.6)

4.1.3.4 Amendments to the RPP

The inspector should verify the Contractor's procedures for making changes to the RPP have been implemented, including the submittal of changes that are outside the scope of the existing RPP to the OSR prior to implementation. (RL/REG-97-13, Section 3.4, and 10 CFR 835.101)

4.1.4 Authorization Basis Document Control

The inspector should verify that procedures are developed to address authorization basis documentation, including ensuring approved revisions and amendments are available to perform important-to-safety work activities at prescribed locations. (10 CFR 830.122(d)(1))

4.2 Authorization Basis Management Implementation

4.2.1 Contractor Review and Approval Processes for Changes

The inspector should:

4.2.1.1 Verify the Contractor is evaluating design documents and facility and administrative control documents for consistency with the authorization basis and appropriately identifying when a safety evaluation is required prior to approving the document or change. (RL/REG-97-13, Section 3.2)

4.2.1.2 Verify all authorization basis documents included in the authorization basis are included in the Contractor's process for evaluating changes to facility or administrative controls.

4.2.1.3 Verify the process for evaluating and implementing changes to the facility or administrative controls is accomplished in accordance with the Quality Assurance Program. (RL/REG-97-13, Section 3.1.c)

4.2.2 Safety Evaluations

The inspector should verify that the Contractor is performing adequate safety evaluations of proposed changes to authorization basis including:

- Accurately assessing the significance of proposed changes and making appropriate determinations regarding whether or not an approved amendment request is required prior to proceeding with the proposed changes to the authorization basis. (RL/REG-97-13, Section 3.5)
- Maintaining safety evaluation documentation of sufficient quality, scope, and depth to fully support safety evaluation conclusions. (RL/REG-97-13, Section 3.5.b(3))

4.2.3 Authorization Basis Document Control

Requirements and commitments related to the Contractor document control are described in Section 4.1.4 of this procedure. The inspector should verify that authorization basis documents used to conduct important-to-safety activities are current and include all approved changes and amendments.

4.2.4 Personnel Training and Qualifications

The inspector should verify Contractor personnel performing authorization basis management activities (e.g., reviewing procedures for conformance to the authorization basis and performing or reviewing safety evaluations) are trained and qualified in a manner consistent with applicable commitments. (QAM, Policy Q-02.2, Sections 3.1.1 and 3.2.2)

4.2.5 Management and Independent Oversight

The inspector should verify the Contractor is assessing the adequacy of authorization basis management activities through independent audits and inspections. (10 CFR 830.122(j)(1); QAM, Policies Q-18.1 and Q-18.3)

5.0 INSPECTION GUIDANCE

5.1 Authorization Basis Management Program

The inspector should verify that the Contractor has approved procedures that include guidance for performing the authorization basis management activities (as described in Section 3.2 of this procedure). These processes may not be contained within a single procedure, or set of procedures, specific to authorization basis management. Consequently, the inspector should become familiar with the Contractor's administrative processes and procedures associated with preparing, reviewing, and approving documents as well as procedures specific to authorization basis management (e.g., performing safety evaluations). (After the initial review of these procedures, subsequent inspections need only focus on changes that have occurred since the prior inspection.)

5.1.1 To satisfy the requirements of Section 4.1.1 of this inspection procedure, the Contractor's procedures associated with the following activities should be reviewed during the inspection:

- Preparation of new or revised procedures
- Preparation of new or revised design documents (e.g., design specifications, design change packages, drawings, purchase specifications, etc.)
- Implementation of temporary modifications [operations phase]
- Developing, reviewing, and approving special operations, tests, or experiments (operational and testing activities not currently described in the authorization basis) [operations phase].

In addressing the requirement that proposed new or modified design documents or procedures are consistent with the authorization basis prior to approval for implementation, it is generally understood that "prior to approval for implementation" has the following meaning:

- For facility changes, prior to release for procurement and construction purposes
- For procedure changes, prior to issuance for use by project personnel.

5.1.2 To satisfy the inspection requirements of Section 4.1.2 of this procedure, the Contractor's procedures associated with the safety evaluation process should be reviewed. The

inspector should verify that the procedures provide guidance regarding the application of the safety evaluation criteria described in Section 4.1.2. The inspector should determine if the guidance provided in the Contractor's procedures meets the basic intent of the evaluation criteria as follows:

- Prohibit changes to the standards described in the SRD or TSRs (operations phase only) without prior regulatory review and approval
- Ensure that the facility design and its operations are bound by the facility safety basis described in the authorization basis
- Ensure that Contractor safety management processes are consistent with commitments made in the authorization basis.

5.1.3 No additional inspection guidance provided.

5.1.4 Recognizing that there are several stages that occur in the design process (sketches, preliminary drawings, final drawings), the inspector should ensure that procedures clearly define a stage of the process where all required evaluations and approvals occur (or are sufficiently identified and tracked), such that the authorization basis matches approved facility design and approved programs and procedures.

5.2 Authorization Basis Management Implementation

The focus of the implementation portion of the inspection should be on the overall performance of the authorization basis management process. Specifically the emphasis should be on ensuring (1) facility design documents, procedures, and the authorization basis are being maintained such that there are no significant discrepancies; and (2) safety evaluations effectively identify and address safety and regulatory issues associated with changes to the authorization basis. Less effort should be directed towards identifying discrepancies that are administrative in nature.

5.2.1 To satisfy the inspection requirement in Section 4.2.1 of this procedure, the inspector should:

- Review the documentation associated with procedure approvals and design document approvals performed since the last inspection. The selection should represent document changes as well as new documents issued. The documents should represent a wide variety of different responsibility areas and disciplines
- Verify that the evaluation process is documented. The documentation should include explanations of how conclusions were reached. The explanations may be brief if the determination did not involve a complex situation; however, a simple checklist should not be considered acceptable documentation
- Record the names of individuals performing and checking the screening evaluation for comparison with training records (refer to Section 5.2.4 of this procedure).

5.2.2 To satisfy the inspection requirements in Section 4.2.2 of this procedure, the inspector should:

- Review the documentation associated with safety evaluations to determine the impact of new or revised drawings, program, or procedures on the authorization basis, performed since the last inspection. The selection should represent a sample of safety evaluations performed in connection with: (1) design changes, (2) new design documents, (3) procedure changes, (4) new procedures, (5) temporary modifications, and (6) evaluations of special tests or experiments, to the extent that such approvals have occurred throughout the inspection period. The documents should represent a wide variety of different responsibility areas and technical disciplines
- Verify that safety evaluations are documented in accordance with the Contractor's procedures. The evaluation documentation should be sufficiently clear, detailed, and logical so the independent review is possible without extensive consultation with the preparers. The documentation should describe the scope of what was evaluated (i.e., which specific documents and information), any assumptions, engineering analysis performed, and judgements made
- To the extent practical, assess the adequacy of the evaluation conclusions
- Record the names of individuals performing and reviewing the safety evaluation for comparison with training records (refer to Section 5.2.4 of this procedure).

5.2.3 To satisfy the inspection requirements in Section 4.2.3 of this procedure, the inspector should interview personnel involved in preparing design documents and procedures and check documentation being used to ensure that the most current versions are being used. Contractor personnel should be aware of how to obtain access to the latest authorization basis information, including any changes.

5.2.4 To satisfy the inspection requirements in Section 4.2.4 of this procedure, the inspector should:

- Interview the Contractor personnel responsible for training in the areas relevant to authorization basis management for general information regarding relevant training and available training materials. Determine if there is a feedback process for identifying training weaknesses (particularly with regard to the evaluation processes)
- Obtain and review relevant training materials. Verify that training program materials are consistent with the Contractor's procedures for performing authorization basis management activities
- Verify that persons performing screening activities as reviewed in Sections 5.2.1 and 5.2.2 of this procedure have been trained by comparing names appearing on documentation with training records.

5.2.5 To satisfy the inspection requirements in Section 4.2.5 of this procedure, the inspector should verify that the Contractor is implementing management and independent assessments of activities associated with authorization basis management (e.g., procedure and design approval process, safety evaluation process, etc.). For weaknesses or deficiencies identified during these assessments, the inspector should verify, on a sample basis, the following.

- Appropriate corrective actions have been identified to correct the problem
- Causes for the problem and corrective actions to prevent recurrence have been identified
- The Contractor's implementation of corrective actions is timely with regard to the significance of the problems and their causes.

6.0 REFERENCES

10 CFR 830 Subpart A, "Quality Assurance Requirements" *Code of Federal Regulations*, as amended.

10 CFR 835, "Occupational Radiation Protection," *Code of Federal Regulations*, as amended.

DOE/RL-96-0003, *DOE Process for Radiological, Nuclear, And Process Safety Regulation of the RPP Waste Treatment Plant Contractor*, Rev. 2, U.S. Department of Energy, Office of River Protection, 2001.

Quality Assurance Manual, 24590-WTP-QAM-QA-01-001, Rev. 4, Bechtel National, Inc., 2003.

Radiation Protection Program for Design and Construction, BNFL-TWP-SER-003, Rev. 8, Bechtel National, Inc., 2000.

RL/REG-97-13, *Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*, Rev. 7, U.S. Department of Energy, Richland Operations Office, 2000.

Safety Requirements Document, BNFL-5193-SRD-01-02, Revision 3, Bechtel National, Inc., 2000.

DOE/RL-96-0006, *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP Waste Treatment Plant Contractor*, Rev. 2, U.S. Department of Energy, Office of River Protection, 2001.

7.0 GLOSSARY

ISAR	Initial Safety Analyses Report
ISMP	Integrated Safety Management Plan

OSR	WTP Safety Regulation Division
QAM	Quality Assurance Manual
RPP	Radiation Protection Program
SRD	Safety Requirements Document
TSR	technical safety requirement
USQ	Unreviewed Safety Question
WTP	Waste Treatment and Immobilization Plant