

Office of Safety Regulation Position on RPP-WTP Authorization Basis Transition



January 25, 2001

U.S. Department of Energy
Office of River Protection
P.O. Box 450, H6-60
Richland, Washington 99352

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Approved: _____
Safety Regulation Official

Date: _____

Preface

As directed by Congress in Section 3139 of the *Strom Thurmond National Defense Authorization Act for Fiscal Year 1999*, The U.S. Department of Energy (DOE) established the Office of River Protection (ORP) at the Hanford Site to manage the River Protection Project (RPP), formerly known as the Tank Waste Remediation System. ORP is responsible for the safe storage, retrieval, treatment, and disposal of the high level nuclear waste stored in the 177 underground tanks at Hanford.

The initial concept for treatment and disposal of the high level wastes at Hanford was to use private industry to design, construct, and operate a Waste Treatment Plant (WTP) to process the waste. The concept was for DOE to enter into a fixed-price contract for the contractor to build and operate a facility to treat the waste according to DOE specifications. In 1996, DOE selected two contractors to begin design of a WTP to accomplish this mission. In 1998, one of the contractors was eliminated, and design of the WTP was continued. However, in May 2000, DOE chose to terminate the privatization contract and seek new bidders under a different contract strategy. In December 2000, a team led by Bechtel National, Inc. was selected to continue design of the WTP and to subsequently build and commission the WTP.

A key element of the River Protection Project Waste Treatment Plant (RPP-WTP) is DOE regulation of safety through a specifically chartered, dedicated Office of Safety Regulation (OSR). The OSR reports directly to the ORP Manager. The regulation by the OSR is authorized by the document entitled *Policy for Radiological, Nuclear, and Process Safety Regulation of the River Protection Project Waste Treatment Plant Contractor* (DOE/RL-96-25) (Policy) and implemented through the document entitled *Memorandum of Agreement for the Execution of Radiological, Nuclear, Process Safety Regulation of the RPP-WTP Contractor* (DOE/RL-96-26) (referred to as the MOA). These two documents provide the basis for the safety regulation of the RPP-WTP Project at Hanford.

The foundation of both the Policy and the MOA is that the mission of removal and immobilization of the existing large quantities of tank waste by the RPP-WTP Contractor must be accomplished safely, effectively, and efficiently.

The Policy maintains the essential elements of the regulatory program established by DOE in 1996 for the privatization contracts. The MOA clarifies the DOE organizational relationships and responsibilities for safety regulation of the RPP-WTP project. The MOA provides a basis for key DOE officials to commit to teamwork in implementing the policy and achieve adequate safety of RPP-WTP activities.

The Policy, the MOA, the RPP-WTP Contract and the four documents incorporated in the Contract define the essential elements of the regulatory program being executed by the OSR. The four documents incorporated into the Contract (and also in the MOA) are:

Concept of the DOE Process for Radiological, Nuclear, and Process Safety of the RPP Waste Treatment Plant Contractor, DOE-96-0005,

DOE Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor, DOE/RL-96-0003,

Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP Waste Treatment Plant Contractor, DOE/RL-96-0006, and

Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards and Requirements for the RPP Waste Treatment Plant Contractor, DOE/RL-96-0004.

DOE patterned its safety regulation of the RPP-WTP contractor to be consistent with the concepts and principles of good regulation (stability, clarity, openness, efficiency, and independence) used by the Nuclear Regulatory Commission (NRC). In addition, the DOE principles of integrated safety management were built into the regulatory program for design, construction, operation, and deactivation of the facility. The regulatory program for nuclear safety permits waste treatment services to occur on a timely, predictable and stable basis, with attention to safety consistent with that which would occur from safety regulation by an external agency. DOE established OSR as a dedicated regulatory organization to be a single point of DOE contact for nuclear safety oversight and approvals for the WTP Contractor. The OSR performs nuclear safety review, approval, inspection, and verification activities for ORP using the NRC principles of good regulation while defining how the contractor shall implement the principles of standards-based integrated safety management.

A key feature of this regulatory process is its definition of how the standards-based integrated safety management principles are implemented to develop a necessary and sufficient set of standards and requirements for the design, construction, operation, and deactivation of the RPP-WTP facility. This process closely parallels the DOE necessary and sufficient closure process (subsequently renamed Work Smart Standards process) in DOE Policy 450.3, *Authority for the Use of the Necessary and Sufficient Process for Standards-based Environment, Safety and Health Management*, 1-25-96, and is intended to be a DOE approved process under DOE Acquisition Regulations, DEAR 970.5204-78, *Laws, Regulations and DOE Orders*, section (c). DOE approval of the contractor-derived standards is assigned to the OSR.

The RPP-WTP Contractor has direct responsibility for WTP safety. DOE requires the Contractor to integrate safety into work planning and execution. This Integrated Safety Management (ISM) process emphasizes that the Contractor's direct responsibility for ensuring safety is an integral part of mission accomplishment. DOE, through its safety regulation and management program, verifies that the Contractor achieves adequate safety by complying with approved safety requirements.

All documents issued by the Office of Safety Regulation are available to the public through the DOE Public Reading Room at the Consolidated Information Center, Washington State University, Room 101L, Richland, Washington. Copies may be purchased for a duplication fee.

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1.0 INTRODUCTION

In 1996, the U.S. Department of Energy (DOE), Richland Operations Office (RL) initiated a program to use private contractors to design, build, and operate a waste treatment and immobilization facility for tank waste at the Hanford Site. Following the competitive phase of the project, BNFL Inc. (BNFL) was selected as the contractor to pursue this Tank Waste Remediation System Privatization (TWRS-P). Under the TWRS-P Contract,¹ BNFL developed an initial design for the waste treatment facility. This design work was performed under radiological, nuclear, and process safety requirements and the regulatory process specified by the TWRS-P Contract. The execution of the TWRS-P regulatory process during the initial design phase resulted in the development of an authorization basis for the facility. The authorization basis is the composite of information submitted to, and accepted by, DOE that responds to radiological, nuclear, and process safety requirements.

In 1999, as a result of congressional action, the TWRS-P facility was renamed the River Protection Project Waste Treatment Plant (RPP-WTP). In May 2000, DOE terminated the privatization contract with BNFL. A new contractor and a new contracting strategy were developed to complete the design and construction of the RPP-WTP. CH2M Hill Hanford Group, Inc. (CHG) was assigned to continue with facility design work under an interim design phase and was authorized to make changes to the RPP-WTP authorization basis based on an evaluation, RL/REG-2000-26, *Evaluation of CH2M Hill Hanford Group (CHG) Capability to Safely Change the RPP-WTP Authorization Basis*, by the Office of River Protection (ORP), Office of Safety Regulation (OSR) that was completed on November 16, 2000.

In December 2000, DOE selected Bechtel National, Inc. (BNI) to complete the design and construction of the RPP-WTP.² Accordingly, organizational responsibility for authorization basis maintenance will be transferred from CHG to BNI. This position paper describes a process for revising the authorization basis to reflect this transition.

¹ Contract No. DE-AC06-96RL13308 between DOE and BNFL Inc., dated August 28, 1996.

² Contract No. DE-AC27-01RV14136, between DOE and BNI, dated December 11, 2000.

2.0 DEFINITIONS

2.1 Authorization Basis

The authorization basis³ consists of the following documents with all approved revisions and amendments at the time of the transition:

- Safety Requirements Document (SRD)
- Integrated Safety Management Plan (ISMP)⁴
- Quality Assurance Program (QAP)
- Radiation Protection Program (RPP)
- Employee Concerns Program (ECP)
- Initial Safety Analysis Report (ISAR)⁵
- Hazards Analysis Report (HAR).⁶

3.0 POSITION

The process for BNI to make changes to the RPP-WTP authorization basis is as follows.

3.1 The Contractor should first review the authorization basis. Following this review, the Contractor should prepare draft revised authorization basis documents to (1) replace all references to CHG and CHG-specific organizations, and (2) accept the Contractor's responsibilities described in the authorization basis applicable to the RPP-WTP design and construction period. Revisions to authorization basis documents should be exclusively related to meeting this objective.⁷

3.2 The Contractor should then prepare and submit the following:

3.2.1 Redline/strikeout and "clean" versions of the proposed revised authorization basis documents.

3.3.2 A proposed schedule for

- completing the Contractor's preparations for implementing its responsibilities as described in the draft authorization basis documents.

³ The regulatory definition associated with the term "authorization basis" is incorporated in the regulatory governing documents referenced in the Contract. Additional description of the term is provided in RL/REG-97-13, *Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*. The list in this document is based on the authorization basis documentation that is described in Section 3.3.1 of the ISMP and that was submitted to the Regulatory Unit and subsequently approved.

⁴ Includes elements of ISAR incorporated by reference in the ISMP.

⁵ As described in Section 3.3.1.3 of the ISMP, only those portions of the ISAR that relate to fundamental aspects of design are considered part of the authorization basis.

⁶ As described in Section 3.3.1.8 of the ISMP, only those portions of the HAR that constitute bounding or significant hazards are considered part of the authorization basis.

⁷ All other revisions to the authorization basis shall be in accordance with RL/REG-97-13 and the ISMP.

- completing an OSR evaluation of the Contractor (as described in Sections 3.3 and 3.4 below) including the resolution of any issues raised during the evaluation.

3.3 Following submittal of the special authorization basis revision, the OSR will promptly conduct an evaluation of CHG's capability to make subsequent changes to the authorization basis in conformance with contractual requirements.⁸ The following items pertain to the evaluation:

- The evaluation will consist of a review of the proposed revised authorization basis documents and a field review of the Contractor's programs, processes, procedures, staffing, and qualifications, as necessary to evaluate the capability of the Contractor to make further changes to the authorization basis.
- Before the evaluation, the Contractor and DOE will agree on an evaluation plan and the logistics for performing the evaluation.
- The DOE may request information from the Contractor to clarify or supplement the draft revised authorization basis documents.

3.4 Following completion of the review, the DOE will issue an evaluation report documenting its conclusions. The report will identify any issues that must be resolved by the Contractor prior to the Contractor making subsequent changes to the authorization basis. Following completion of any such actions, BNI may make changes to the authorization basis consistent with contract requirements.

4.0 LIST OF TERMS

BNFL	BNFL Inc.
BNI	Bechtel National, Inc.
CHG	CH2M Hill Hanford Group, Inc.
DOE	U.S. Department of Energy
ECP	Employee Concerns Program
HAR	Hazards Analysis Report
ISAR	Initial Safety Analysis Report
ISMP	Integrated Safety Management Plan
ORP	Office of River Protection
OSR	Office of Safety Regulation
QAP	Quality Assurance Program
RL	Richland Operations Office
RPP	Radiation Protection Program
RPP-WTP	River Protection Project-Waste Treatment Plant
RU	Regulatory Unit
SRD	Safety Requirements Document

⁸ Contract No. DE-AC27-99RL14047, between DOE and CHG dated January 17, 2001.

TWRS-P

Tank Waste Remediation System Privatization

5.0 REFERENCES

Employee Concerns Program (ECP), BNFL-5193-ECP-01, Rev. 4, CH2M Hill Hanford Group, Inc., Richland, Washington, 2000.

Initial Safety Analysis Report (ISAR), BNFL-5193-ISAR-01, Rev. 1, CH2M Hill Hanford Group, Inc., Richland, Washington, 2000.

Integrated Safety Management Plan (ISMP), BNFL-5193-ISP-01, Rev. 5, CH2M Hill Hanford Group, Inc., Richland, Washington, 2000.

Quality Assurance Program (QAP), BNFL-5193-QAP-01, Rev. 7, CH2M Hill Hanford Group, Inc., Richland, Washington, 2000.

Radiation Protection Program for Design (RPP), BNFL-TWP-SER-003, Rev. 5, CH2M Hill Hanford Group, Inc., Richland, Washington, 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.

RL/REG-2000-26, *Evaluation of CH2M Hill Hanford Group (CHG) Capability to Safely Change the RPP-WTP Authorization Basis*, Rev. 0, U.S. Department of Energy, Richland Operations Office, 2000.

Safety Requirements Document (SRD), BNFL-5193-SRD-01, Volumes I and II, Rev. 2 & 3, CH2M Hill Hanford Group, Inc., Richland, Washington, 2000.