U.S. Department of Energy
Office of River Protection
Contract Management Division
Mr. Michael K. Barrett
Contracting Officer
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

CCN: 035802

Dear Mr. Barrett:

CONTRACT NO. DE-AC27-01RV14136 – TRANSMITTAL FOR APPROVAL: AUTHORIZATION BASIS CHANGE NOTICE 24590-WTP-ABCN-ESH-01-007, REVISION 2, "SELECTION OF IMPLEMENTING STANDARD FOR MANAGEMENT AND ORGANIZATION" AND 24590-WTP-ABCN-ESH-01-021, REVISION 2, "SELECTION OF IMPLEMENTING STANDARD FOR DOCUMENTATION AND SUBMITTALS"

References:

1) CCN 034614, Letter, R. C. Barr, OSR, to R. F. Naventi, BNI, "Acceptance of Closeout Comments Associated with the Standards Approval Package Submittal," 02-OSR-0230, dated May 29, 2002.

2) CCN 033563, Letter, A. R. Veirup, BNI, to M. K. Barrett, ORP, "Closeout Comments on Low Activity Waste and High Level Construction Authorization Requests," dated May 23, 2002.

3) CCN 030540, Letter, R. C. Barr, OSR, to R. F. Naventi, BNI, "Office of Safety Regulation (OSR) Questions on Low Activity Waste Construction Authorization Request and Related Submittals," 02-OSR-0109, dated, March 14, 2002.

4) CCN 026385, Letter, A. R. Veirup, BNI, to M. K. Barrett, ORP, "Transmitted for Approval: Contract Deliverable 'Revised Standards Approval Package' and Associated Authorization Basis Change Notices in Support of the 'SRD Standards Approval Package Submittal,'" dated January 15, 2002.

Bechtel National, Inc. (BNI) is submitting the Authorization Basis Change Notices (ABCNs), 24560-WTP-ABCN-ESH-01-007, Revision 2, and 24590-WTP-ABCN-ESH-01-021, Revision 2 (Attachments 1 and 2), to the U.S. Department of Energy, Office of River Protection, and the Office of Safety Regulation (OSR) for review and approval. These ABCNs incorporate the OSR-approved BNI responses to the OSR review questions as noted in Reference 1.

CCN: 035802

Approval of this ABCN is requested by August 9, 2002.

Electronic copies of the ABCNs are provided for the OSR's information and use.

If you have any questions or comments, please contact Mr. Bill Spezialetti at (509) 371-4654.

Very truly yours,

A. R. Veirup
Prime Contract Manager

TR/slr

Attachments:
(1) Authorization Basis Change Notice 24590-WTP-ABCN-ESH-01-007, Revision 2, plus attachments
(2) Authorization Basis Change Notice 24590-WTP-ABCN-ESH-01-021, Revision 2, plus attachments

Attachment 1

Authorization Basis Change Notice
24590-WTP-ABCN-ESH-02-007, Revision 2

Authorization Basis Change Notice

ABCN Number 24590-WTP-ABCN-ESH-01-007 Revision ~~1~~2

ABCN Title Selection of Implementing Standard for Management and Organization

I. ABCN Review and Approval Signatures

A. ABCN Preparation

Preparer:	Ken Gibson		
	Print/Type Name	*Signature*	*Date*
Reviewer:	Rodger Dickey		
	Print/Type Name	*Signature*	*Date*

B. Required Reviewers

Review Required? *For each person checked Yes, that signature block must be completed.*

☒	ES&H Manager	Fred Beranek		
		Print/Type Name	*Signature*	*Date*
☒	QA Manager	George Shell		
		Print/Type Name	*Signature*	*Date*
☒	PSC Chair	Bill Poulson		
		Print/Type Name	*Signature*	*Date*
☐	Operations Manager			
		Print/Type Name	*Signature*	*Date*
☐	Engineering Manager			
		Print/Type Name	*Signature*	*Date*
☐	Pretreatment APM			
		Print/Type Name	*Signature*	*Date*
☐	LAW APM			
		Print/Type Name	*Signature*	*Date*
☐	HLW APM			
		Print/Type Name	*Signature*	*Date*
☐	BOF APM			
		Print/Type Name	*Signature*	*Date*
☐	Construction Manager			
		Print/Type Name	*Signature*	*Date*
☐	Business/Project Controls Manager			
		Print/Type Name	*Signature*	*Date*
☐	ALARA PSC Subcommittee Chair			
		Print/Type Name	*Signature*	*Date*
☒	PMT Chair	Dennis Klein		
		Print/Type Name	*Signature*	*Date*

Authorization Basis Change Notice

ABCN Number 24590-WTP-ABCN-ESH-01-007 Revision ~~1~~2

ABCN Title Selection of Implementing Standard for Management and Organization

C. ABCN Approval

WTP Project Manager Ron Naventi

Print/Type Name *Signature* *Date*

II. Description of the Proposed Change to the Authorization Basis

D. Affected AB Documents:

Title	Document Number	Revision
Safety Requirements Document Volume II	24590-WTP-SRD-ESH-01-001-02	~~0~~1

Decision to Deviate ☐ Yes ☒ No

If yes, DTD Number _____ Deficiency Report Number _____

Initiating Document Number Contract No. DE-AC27-01RV14136 Revision _____

E. Describe the proposed changes to the Authorization Basis Documents:

1. For SRD Safety Criterion 1.0-9 replace the implementing standard (of ISMP 1.0, *Project Safety Approach*, ISMP 11.1, *Design and Construction Phase*, and ISMP 11.2, *Operations Phase*) with SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach*~~ASME-NQA-1-1989, Section 1 *Organization* (including associated supplements)~~. This change is on SRD Volume II, page 1-~~5~~4, ~~all~~ revision ~~0~~1.

2. For SRD Safety Criterion 7.0-4 replace the implementing standard (of ISMP 3.2, *Safety Responsibilities* and ISMP 6.1.2, *Lines of Authority and Responsibility*) with SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach*~~ASME-NQA-1-1989, Section 1 *Organization* (including associated supplements)~~. This change is on SRD Volume II, page 7.0-1~~2~~, ~~all~~ revision ~~0~~1.

3. Delete SRD Safety Criterion 7.1-1. This change is on SRD Volume II, page 7.1-1, revision 1.

~~3.~~4. For SRD Safety Criteria 7.1-2~~1~~ and ~~through~~ 7.1-3 replace the implementing standard (of ISMP 1.3.13, *Procedures*, ISMP 3.16, *Internal Safety Oversight*, ISMP 5.2, *Control of Subcontractors* and ISMP 10.0, *Assessments*) with SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach*~~ASME-NQA-1-1989, Section 1 *Organization* (including associated supplements) (SRD SC 7.1-1 & 7.1-3) and ASME-NQA-1-1989, Section 7 *Control of Purchased Items and Services* (including associated supplements)(SRD SC 7.1-2)~~. These changes are on SRD Volume II, pages 7.1-1~~3~~ and 7.1-2~~4~~, both~~all~~ revision ~~0~~1.

5. For SRD Safety Criteria 7.3-1, 7.3-8 and 7.3-10 replace the implementing standard (of ISMP 1.3.11, *Quality Levels*, ISMP 5.4, *Compliance Audits*, ISMP 8.0, *Document Control and Maintenance* and ISMP 10.0, *Assessments*) with 24590-WTP-QAM-QA-01-001, Quality Assurance Manual, Section 1.3 - Graded Approach (SRD SC 7.3-1), Policy 18.3 – Management Assessment (SRD SC 7.3-8) and Policy 18.1 – Internal Assessment(Audit) (SRD SC 7.3-10). Additionally for SRD Safety Criterion 7.3-1, 7.3-3, 7.3-4, 7.3-5, 7.3-6, 7.3-7, 7.3-8, 7.3-9, 7.3-10 and 7.3-11 correct Regulatory Basis to "10 CFR 830 Subpart A". These changes are on SRD Volume II, pages 7.3-.1~~9.~~ through 7.3-4~~11 and 7-12~~, all revision ~~0~~1.

6. For SRD Safety Criteria 7.3-2 change "Quality Assurance Program (QAP)" to "Quality Assurance Manual (QAM)" and correct Regulatory Basis to "10 CFR 830 Subpart A". These changes are on SRD Volume II, page 7.3-1, revision 1.

~~5.~~7. For SRD Safety Criterion 9.0-2 replace the implementing standard (of ISMP 9.2, *Scheduling of Events for Regulatory Submittals*) with SRD Volume II, Appendix G~~*~~- *Ad Hoc Implementing Standard for Safety Analysis Reports* and 24590-WTP-QAM-QA-01-001, Quality Assurance Manual, Policy 18.1 – Independent Assessment (Audit) . This change is on SRD Volume II, page 9-1, ~~all~~ revision ~~0~~1.

Authorization Basis Change Notice

ABCN Number 24590-WTP-ABCN-ESH-01-007 Revision ~~1~~2

ABCN Title Selection of Implementing Standard for Management and Organization

E. Describe the proposed changes to the Authorization Basis Documents:

Implementation of this ABCN does not cause an impact to project design or programs.

F. List associated ABCNs and AB documents, if any:

ISMP (24590-WTP-ISMP-ESH-01-001). Even though the ISAR, Section 3.6, *Audit and Assessments* and 3.9, *Procedures*, is identified in the ISMP Sections 5.4 and 1.3.13 respectively, it is~~,~~ identified for guidance.

ABCN-24590-01-0004, *Identification of Safety Analysis Reports Format and Content* identifies SRD Volume II, Appendix G~~*~~- *Ad Hoc Implementing Standard for Safety Analysis Reports* as the implementing standard for SARs.

ABCN 24590-WTP-ABCN-ESH-01-021, Revision 2, *Selection of Implementing Standard for Documentation and Submittals*

G. Explain why the change is needed:

1, 2 & ~~3~~ 4 - Contract No. DE-AC27-01RV14136 Section C4(a) specifically requires the WTP Contractor to be "responsible for protecting human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional, construction, industrial and occupational hazards. The Contractor shall also provide safe and healthful working conditions for employees, subcontractors and all other personnel under the Contractor's control who work in the general vicinity of the Contractor site and facilities." Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor Quality Assurance (QA) Program be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Standard 7(e)(3)(ii)(B), ASME-NQA-1-1989 is identified. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. BNI proposes to use new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach*, which has been developed to capture the salient requirements from the previously referenced sections of the Integrated Safety Management Plan. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for SC 1.0-9, 7.0-4, 7.1-1, 7.7-2 and 7.1-3 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ The new proposed ad hoc standard contains specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work and additionally the control of subcontractors.

3 – This change is necessary to be consistent with the deletion of SRD Volume II, Section 9.3. The deletion of the Risk Management section of the SRD was approved by DOE evaluation letter 01-OSR-0311 dated 17 Sept 2001.

~~4~~ 5 - Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the Contractor QA Program be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further, in Standard 7(e)(3)(iii) & (iv), ASME-NQA-1-1989 and DOE O 414.1A are identified. BNI has chosen the associated policy sections of the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001, as the implementing standard for the application of the graded approach, management assessment and~~or~~ compliance audits. Use of these policy sections 1.3, 18.3 and 18.1, respectively from the QAM as the implementing standard for SC 7.3-1, 7.3-8 and 7.3-10 is appropriate. Incorporates editorial change to update to 10 CFR 830 Subpart A

6 – The change is necessary to be consistent with the previous change to the SRD for the project to use the Quality Assurance Manaual (QAM) instead of the referring to a Quality Assurance Program. The use of the QAM was approved by DOE evaluation letter 01-OSR-0285 dated 2 August 2001.

~~5~~ 7 – ABCN 24590-01-00004, Revision 2 has identified a new SRD Volume II, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Report* for the WTP, that requires the Preliminary Safety Analysis Report to state that all major safety issues have been resolved prior to construction approval and to identify and provide a schedule for resolution of other safety issues. Development of the PSAR using this new ad hoc implementing standard, coupled with the use of the QAM Policy 18.1, *Independent Assessment(Audit)* for developing internal assessments will ensure that the Contractor will comply with ~~s~~Safety ~~c~~Criterion 9.0-2.

ABCN Number 24590-WTP-ABCN-ESH-01-007 Revision ~~1~~2

ABCN Title Selection of Implementing Standard for Management and Organization

H. List the implementation activities and the projected completion dates:

Activity	Date
Inform DOE that AB has been revised and provide updated hard copy and electronic version of AB	30 days or less after DOE approval
Distribute controlled copy revised pages	30 days after DOE approval

Revise the following implementing documents:

Documents	Describe extent of revisions	Date
1 NA		

Describe other activities:	Date
1 NA	

III. Evaluation of the Proposed Change

I. Is DOE prior approval required?

1 Does the revision involve the deletion or modification of a standard previously identified or established in the SRD? **Yes** ☒ **No** ☐

Explain

This change will delete Safety Criterion 7.1-1 and replaces the implementing standard selected for Safety Criteria 1.0-9, 7.0-4, ~~7.1-1,~~ 7.1-2, 7.1-3, 7.3-1, 7.3-8, 7.3-10, and 9.0-2 in the SRD.

2 Does the revision result in the reduction in commitment currently described in the AB? **Yes** ☒ **No** ~~☒~~ ☐

Explain

The selected implementing standards for safety criteria 1.0-9, 7.0-4, ~~7.1-1,~~ 7.1-2, 7.1-3(new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach)* , 7.3-1, 7.3-8, 7.3-10 (24590-WTP-QAM-QA-01-001, Quality Assurance Manual) , and 9.0-2~~, ASME NQA-1-1989,~~(24590-WTP-QAM-QA-01-001, Quality Assurance Manual and the SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Safety Analysis Reports)*, complies with top-level principles, applicable laws and regulations, and the contract, and provides adequate safety. No changes are proposed for AB commitments. As such, the new implementing standards identified will not result in a reduction in commitment. While deletion of Safety Criterion 7.1-1 is a reduction in commitment however the necessity for a risk management plan was evaluated and determined to not be required on the WTP Project. See DOE evaluation letter 01-OSR-0311, dated 17 September 2001.

3 Does the revision result in a reduction in the effectiveness of any procedure, program, plan, or management process described in the AB? **Yes** ☐ **No** ☒

Explain

The change in the selected implementing standard brings the WTP ~~p~~Project in line with the programmatic requirements ~~as~~ detailed in ~~s~~Safety ~~c~~Criteria 1.0-9, 7.0-4~~, 7.1-1~~, 7.1-2, 7.1-3, 7.3-1, 7.3-8, 7.3-10, and 9.0-2 and defined in the contract, however does not remove programmatic requirements contained in the ~~a~~Authorization ~~b~~Basis. The current SRD and ISMP requirements are unchanged and remain. See Attachment 3, *SRD Proposed Changes Summary/Safety Evaluation and* Attachment 4, ISMP versus

Proposed Ad Hoc Standard. . –The requirements for programmatic processes are not deleted and retain the current level of effectiveness.

J. Complete the safety evaluation by describing how the revision to the AB:

1 will continue to comply with all applicable laws and regulations, conform to top-level safety standards, and provide adequate safety

See Attachment 2, *Identification of Implementing Standards for WTP Management and Organization*.

2 will continue to conform to the original submittal requirements associated with the AB documents being revised

See Attachment 2, *Identification of Implementing Standards for WTP Management and Organization*.

3 will not result in inconsistencies with other commitments and descriptions contained in the AB or an authorization agreement

See Attachment 2, *Identification of Implementing Standards for WTP Management and Organization*~~.~~.

Authorization Basis Change Notice

ABCN Number 24590-WTP-ABCN-ESH-01-007 Revision ~~1~~2

ABCN Title Selection of Implementing Standard for Management and Organization

K. Justification of the Proposed Change

Provide a justification that demonstrates that the proposed change is safe

The regulatory bases for the subject Safety Criteria are listed in DOE/RL-96-0006, Sections 4.1.2.1, 4.1.2.2, 4.1.4.1, 4.1.6.1, 4.1.6.2, 4.3.1.1, 4.3.1.5, 4.4.1, 4.4.2, 4.4.3, 5.1.3, 5.2.5 and 5.2.12. Attachment 2 contains a discussion of these Safety Principles and a summary of the justification that new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach* ~~ASME-NQA-1-1989~~, 24590-WTP-QAM-QA-01-001, Quality Assurance Manual, and the SRD Volume II, Appendix ~~*~~ G - *Ad Hoc Implementing Standard for Safety Analysis Reports* do not adversely impact the environment, continue project conformance to applicable laws, regulations, the Contract, ~~the~~and Top-Level Standards, and do not conflict with other parts of the ~~a~~Authorization ~~b~~Basi~~e~~s. Attachment 3 provides the basis/rationale for replacing the associated SRD ~~s~~Safety ~~c~~Criteria implementing codes and standards citations of ISMP sections with the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach* ~~ASME-NQA-1-1989~~, 24590-WTP-QAM-QA-01-001, Quality Assurance Manual, and the SRD Volume II, Appendix ~~*~~ G - *Ad Hoc Implementing Standard for Safety Analysis Reports*.

L. Certification of Continued SRD Adequacy

Based on evaluations from III.I.1 and III.J.1. If question III.I.1 is marked "yes, Project Manager certification is required. The Project Manager's signature certifies that the revised SRD continues to identify a set of standards that provide adequate safety, complies with WTP applicable laws and regulations, and conforms with top-level safety standards and principles. This certification is based on adherence to the DOE/RL-96-0004 standards identification process and successful completion of review and confirmation by the PSC.

WTP Project Manager:	Ron Naventi		
	Print/Type Name	*Signature*	*Date*

M. List of Attachments

1. Safety Requirements Document (SRD), 24590-WTP-SRD-ESH-01-001-02, Proposed Changes
2. Identification of Implementing Standard for WTP Management and Organization
3. SRD Proposed Changes Summary/Safety Evaluation
4. ISMP versus Proposed Ad Hoc Standard.

Safety Design Significant SSCs are those needed to achieve compliance with the radiological or chemical exposure standards for the public and workers during normal operation; and SSCs that can, if they fail or malfunction, place frequent demands on, or adversely affect the function of, Safety Design Class SSCs.

Implementing Codes and Standards

24590-WTP-SRD-ESH-01-001-02, Appendix A, Implementing Standard for Safety Standards and Requirements Identification

24590-WTP-SRD-ESH-01-001-02, Appendix D, Radiological Exposure Standards for the RPP-WTP Project

Regulatory Basis

DOE/RL-96-0006	*3.3.1*	*Public Protection*
DOE/RL-96-0006	*3.3.2*	*Worker Protection*

Safety Criterion: 1.0 - 9

The RPP-WTP Contractor shall accept responsibility for the safety of the RPP-WTP.

Implementing Codes and Standards

24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan
Chapter: 1.0 Project Safety Approach
Section: 11.1 Design and Construction Phase
Section: 11.2 Operations Phase

24590-WTP-SRD-ESH-01-001-02. *Safety Requirements Document Volume II*, Appendix * - "Ad Hoc Implementing Standard for Project Integrated Safety Management Approach

Regulatory Basis

DOE/RL-96-0006	*4.1.2.1*	*Safety Responsibility-Safety Responsibility*
DOE/RL-96-0006	*4.3.1.1*	*Conduct of Operations-Organizational Structure*
DOE/RL-96-0006	*5.1.3*	*Process Safety Responsibility*

Safety Criterion: 1.0 - 10

In addition to the Safety Criteria contained herein, compliance with all requirements of 10 CFR 830.120 and 10 CFR 835 shall be achieved absent the granting of an exemption request to any specific requirement therein.

Regulatory Basis

10 CFR 830.120	*Quality assurance requirements*	*Location*
10 CFR 835	*Occupational Radiation Protection*	*Location: 1*
DE-AC06-96RL13308	*Part I Section C.5 Table S4-1*	

Safety Criterion: 7.0 - 4

The assignment and subdivision of responsibility for safety within the contractor's organization shall be kept well defined throughout the life of the facility.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 3.2 Safety Responsibilities~~
~~Section: 6.1.2 Lines of Authority and Responsibility~~
24590-WTP-SRD-ESH-01-001-02, *Safety Requirements Document Volume II*, Appendix * - "Ad Hoc Implementing Standard for Project Integrated Safety Management Approach

Regulatory Basis

DOE/RL-96-0006	*4.1.2.2*	*Safety Responsibility-Safety Assignments*
DOE/RL-96-0006	*4.3.1.1*	*Conduct of Operations-Organizational Structure*

7.1 Management and Organization/Staffing

Safety Criterion: 7.1 - 1

This safety criterion has been deleted.

~~Safety management shall oversee the implementation of the risk management program elements. A qualified person shall be assigned the overall responsibility for the development, implementation, and integration of the risk management program elements. If responsibility for implementing individual requirements of the risk management program is assigned to other persons, the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.~~

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 6.1 Integration into Work Planning and Performance~~

Regulatory Basis

Safety Criterion: 7.1 - 2

When selecting a subcontractor, information regarding the subcontract employer's safety performance and programs shall be obtained and evaluated. Subcontract employees shall be informed of the known potential fire, explosion, or toxic release hazards related to the subcontractor's work and the process. The applicable provisions of the emergency plan shall be explained to the subcontractors. Safe work practices to control the entrance, presence, and exit of subcontract employers and employees in radioactive or hazardous process areas shall be developed and implemented. The performance of subcontract employers with regard to safety shall be periodically evaluated and a subcontract employee injury and illness log related to the subcontractor's work in process areas shall be maintained.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 5.2 Control of Subcontractors~~
24590-WTP-SRD-ESH-01-001-02, *Safety Requirements Document Volume II*, Appendix * - "Ad Hoc Implementing Standard for Project Integrated Safety Management Approach

Regulatory Basis

DOE/RL-96-0006 *5.2.5* *Subcontractors*

Safety Criterion: 7.1 - 3

A framework shall be established for safety review organizations that are responsible for assuring the safety of the facility. The separation between the responsibilities of the safety review organizations and those of the other organizations shall remain clear so that the safety review organizations retain their independence as safety authorities. Internal safety oversight should be conducted by qualified personnel to ensure that the safety standards are consistently met.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 1.3.13 Procedures~~
~~Section: 3.16 Internal Safety Oversight~~
~~Chapter: 10.0 Assessments~~
24590-WTP-SRD-ESH-01-001-02*. Safety Requirements Document Volume II*, Appendix * - "Ad Hoc Implementing Standard for Project Integrated Safety Management Approach

Regulatory Basis

DOE/RL-96-0006	*4.1.4.1*	*Safety/Quality Culture-Safety/Quality Culture*
DOE/RL-96-0006	*4.3.1.5*	*Conduct of Operations-Internal Surveillance and Audits*
DOE/RL-96-0006	*4.4.1*	*Safety Review Organization*
DOE/RL-96-0006	*4.4.2*	*Qualified Personnel*
DOE/RL-96-0006	*5.1.3*	*Process Safety Responsibility*

Safety Criterion: 7.1 - 4

Commitments from outside organizations to provide data and services required to satisfy safety obligations shall be made prior to the need for the information or services.

Implementing Codes and Standards

24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan
Section: 1.3.18 Emergency Planning
Section: 3.10 Emergency Preparedness

Regulatory Basis

DOE/RL-96-0006	*4.1.2.3*	*Safety Responsibility-Site and Technical Support*

7.3 Quality Assurance Program

Safety Criterion: 7.3 - 1

The following quality assurance elements shall be applied using a graded approach:

(1) Quality Assurance Program
(2) Personnel Training and Qualification
(3) Quality Improvement
(4) Documents and Records
(5) Work Processes
(6) Design
(7) Procurement
(8) Inspection and Acceptance Testing
(9) Management Assessment
(10) Independent Assessment.

Impleme nting Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 1.3.11 Quality Levels~~
24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*
Section 1.3, "Graded Approach"

Regulatory Basis

10 CFR 830.Subpart A~~120~~ Quality assurance requirements Location: 830.122~~(b)(1)~~
DOE/RL-96-0006 4.1.6.1 Quality Assurance-Quality Assurance Application
DOE/RL-96-0006 4.1.6.2 Quality Assurance-Established Techniques and Procedures

Safety Criterion: 7.3 - 2

A written Quality Assurance Manual~~Program~~ (QAM~~P~~) shall be developed, implemented, and maintained. The QAM~~P~~ shall describe the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing, and assessing the work. The QAM~~P~~ shall describe management processes, including planning, scheduling, and resource considerations.

Implementing Codes and Standards

ASME NQA-1-1989
Section 2, "Quality Assurance Program" (including associated supplements)

Regulatory Basis

10 CFR 830.Subpart A~~120~~ Quality assurance requirements Location: 830.121~~(a)(1)~~
~~*10 CFR 830.120 Quality assurance requirements Location: (c)(1)(i)*~~
DOE/RL-96-0006 4.1.1.6 Defense in Depth-Human Aspects
DOE/RL-96-0006 4.1.4.1 Safety/Quality Culture-Safety/Quality Culture
WAC 246-247 Radiation Protection - Air Emissions Location: Part 075 (6)

Safety Criterion: 7.3 - 3

Personnel shall be trained and qualified to ensure they are capable of performing their assigned work. Personnel shall be provided continuing training to ensure that job proficiency is maintained.

Implementing Codes and Standards

24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan
Section: 3.15 Training and Qualification

Regulatory Basis

10 CFR 830.Subpart A~~120~~ Quality assurance requirements Location: 830.122(b)~~(c)(1)(ii)~~

Safety Criterion: 7.3 - 4

Documents shall be prepared, reviewed, approved, issued, used, and revised to prescribe processes, specify requirements, or establish design. Records shall be specified, prepared, reviewed, approved, and maintained.

Implementing Codes and Standards

ASME NQA-1-1989
Section 3S-1, 7, "Documentation and Records" (including associated supplements)
Section 3S-1, 17, "Quality Assurance Records" (including associated supplements)

Regulatory Basis

10 CFR 830.Subpart A~~120~~ Quality assurance requirements Location: 830.122(d)~~(c)(1)(iv)~~

Safety Criterion: 7.3 - 5

Work shall be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means. Items shall be identified and controlled to ensure their proper use. Items shall be maintained to prevent their damage, loss, or deterioration. Equipment used for process monitoring or data collection shall be calibrated and maintained.

Implementing Codes and Standards

ASME NQA-1-1989
Section 3, "Design Control" (including associated supplements)
Section 5, "Instructions, Procedures, and Drawings" (including associated supplements)
Section 8, "Identification and Control of Items" (including associated supplements)
Section 9, "Control of Processes" (including associated supplements)
Section 12, "Control of Measuring and Test Equipment" (including associated supplements)

Regulatory Basis

10 CFR 830.SubpartA~~120~~ Quality assurance requirements Location: 830.122(e)~~(c)(2)(i)~~
DOE/RL-96-0006 4.1.6.3 Quality Assurance-Established Techniques and Procedures

Safety Criterion: 7.3 - 6

Processes to detect and prevent quality problems shall be established and implemented. Items, services, and processes that do not meet established requirements shall be identified, controlled, and corrected. Correction shall include identifying the causes of problems and preventing recurrence. Item characteristics, process implementation, and other quality-related information shall be reviewed and the data analyzed to identify items, services, and processes needing improvement.

Implementing Codes and Standards

ASME NQA-1-1989
- Section 15, "Control of Nonconforming Items" (including associated supplements)
- Section 16, "Corrective Action" (including associated supplements)

Regulatory Basis

10 CFR 830.SubpartA~~120~~ Quality assurance requirements Location: 830.122(f)(g)(h) ~~(c)(1)(iii)~~
DOE/RL-96-0006 4.1.4.1 Safety/Quality Culture-Safety/Quality Culture

Safety Criterion: 7.3 - 7

Inspection and testing of specified items, services, and processes shall be conducted using established acceptance and performance criteria. Equipment used for inspections and tests shall be calibrated and maintained.

Implementing Codes and Standards

ASME NQA-1-1989
- Section 10, "Inspections" (including associated supplements)
- Section 11, "Test Control" (including associated supplements)
- Section 12, "Control of Measuring and Test Equipment" (including associated supplements)

Regulatory Basis

10 CFR 830.Subpart A~~120~~ Quality assurance requirements Location:830.122(h) ~~(c)(2)(iv)~~

Safety Criterion: 7.3 - 8

Managers shall assess their management processes. Problems that hinder the organization from achieving its objectives shall be identified and corrected.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
- ~~Chapter: 10.0 Assessments~~

24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*
- Policy Q-18.3, "Management Assessment"

Regulatory Basis

10 CFR 830.Subpart A~~120~~ Quality assurance requirements Location:830.122(i) ~~(c)(3)(i)~~

Safety Criterion: 7.3 - 9

Independent assessment shall be planned and conducted to measure item and service quality, to measure the adequacy of work performance, and to promote improvement. The group performing independent assessments shall have sufficient authority and freedom from the line to carry out its responsibilities. Persons conducting independent assessments shall be technically qualified and knowledgeable in the areas assessed.

Implementing Codes and Standards

ASME NQA-1-1989

Section 18, "Audits" (including associated supplements)

Regulatory Basis

10 CFR 830.Subpart A~~120~~ Quality assurance requirements Location:830.122(j) ~~(c)(3)(ii)~~

Safety Criterion: 7.3 - 10

Compliance audits shall be performed at least every three years to verify that the procedures and practices developed to ensure nuclear and process safety are adequate and are being followed. The compliance audit shall be conducted by at least one person knowledgeable in the process. A report of the findings of the audit shall be developed. An appropriate response shall be determined and documented for each of the findings of the compliance audit, and it shall be documented when deficiencies have been corrected. Employers shall retain the two most recent compliance audit reports.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~

~~Section: 5.4 Compliance Audits~~

~~Chapter: 8.0 Document Control and Maintenance~~

24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*

Policy Q-18.1, "Independent Assessment (Audit)"

Regulatory Basis

DOE/RL-96-0006 5.2.12 Compliance Audits

Safety Criterion: 7.3 - 11

Procured items and services shall meet established requirements and perform as specified. Prospective suppliers shall be evaluated and selected on the basis of specified criteria. Processes to ensure that approved suppliers continue to provide acceptable items and services shall be established and implemented.

Implementing Codes and Standards

ASME NQA-1-1989

Section 7, "Control of Purchased Items and Services" (including associated supplements)

Regulatory Basis

10 CFR 830.Subpart A~~120~~ Quality assurance requirements Location:830.122(g) ~~(c)(2)(iii)~~

9.0 Documentation and Submittals

Safety Criterion: 9.0 - 1

An annual report shall be prepared and submitted to the Regulator and appropriate local officials. The annual report shall document:

(1) the quantity of each of the principal radionuclides in excess of background released to unrestricted areas in liquid and gaseous effluents during the previous year of operation.

(2) the calculated annual dose to the maximally exposed members of the public, and (3) the calculated collective dose to members of the public from exposures to RPP-WTP radiation sources.

Reports on dose estimates to the public shall include relevant site-specific information, including the locations of members of the public subject to the greatest potential exposures, the population distribution subject to exposures from RPP-WTP activities, and exposure pathways germane to the site. Values of assumed default or site-specific parameters used in calculations shall be discussed and included with the documentation of the calculations.

Implementing Codes and Standards

24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan
Section: 9.2 Scheduling of Events for Regulatory Submittals

Regulatory Basis

40 CFR 61 National Emission Standards for Hazardous Air Pollutants Location: 104
40 CFR 61 National Emission Standards for Hazardous Air Pollutants Location: 94

Safety Criterion: 9.0 - 2

The Contractor should request authorization for construction only after being satisfied by appropriate internal assessments that the main safety issues have been satisfactorily resolved and that the remainder are amenable to solution before operations are scheduled to begin.

Implementing Codes and Standards

24590-WTP-SRD-ESH-01-001-02, *Safety Requirements Document Volume II*, Appendix G, "Ad Hoc Implementing Standard for Safety Analysis Reports"
~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 9.2 Scheduling of Events for Regulatory Submittals~~
24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*
Policy Q-18.1, "Independent Assessment (Audit)"

Regulatory Basis

DOE/RL-96-0006 4.4.3 Recommendation for Initiation of Construction

Appendix *

Ad Hoc Implementing Standard for Project Integrated Safety Management Approach

* Next available appendix letter when incorporated into SRD.

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1.0 Project Integrated Safety Management Approach

The WTP Project Contractor's safety approach is implemented with the recognition that the defined work for processing and immobilizing Hanford tank waste involves inherent radiological and chemical hazards from which hazardous situations may arise. Throughout this implementing standard, safety refers to radiological, nuclear and process safety with the scope of the WTP Project Authorization Basis. The WTP Project Contractor is committed to integrating the development of safety criteria and design requirements, the hazard analysis and accident analysis process, and the facility design to minimize the risk associated with these hazards and hazardous situations. The WTP Project Contractor accepts responsibility for the safety of the WTP and for adequate protection of the health and safety of the public, worker safety, environmental protection, and compliance with applicable laws and regulations.

The safety approach for the WTP Project is based on applying best industry practices and cost-effective processes that come from successful and safe operation in the commercial and DOE nuclear environment and the chemical process industry. The purpose of the safety approach is to achieve the following objectives.

1) Ensure an adequate level of safety at the facility for the workers and the public.
2) Comply with applicable laws and regulations.
3) Conform to top-level safety standards and principles stipulated by the U.S. Department of Energy (DOE/RL-96-0006, Revision 2, *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP Waste Treatment Plant Contractor*).

See SRD Volume II, Appendix A for the detailed description of the ISM process defined by DOE/RL-96-0004, Revision 2, *Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards and Requirements for the RPP Waste Treatment Plant Contractor*.

Procedures are one tool by which compliance with requirements is ensured during the design, construction, commissioning, operation, and deactivation of the project. All activities that may affect safety of the public and workers are performed in accordance with step-by-step instruction provided in procedures. The range of activities covered in procedures includes, but is not limited to:

1) Design control
2) Procurement activities
3) Construction activities
4) Monitoring contractors
5) Identification and resolution of nonconforming conditions
6) Operations and maintenance
7) Emergency plan implementing procedures

2.0 Safety Responsibilities

Safety responsibilities are assigned to and by the WTP Project Manager. The roles assigned to organizations are provided in section 6.0, "Organization Roles, Responsibilities, and Authorities". The overall, general roles, responsibilities, and authorities assigned to WTP Project organization managers are provided in 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual* for the Design, Construction, and Commissioning (DC&C) phase of the Project.

In addition, by these assignments, assurance is provided that the roles identified in the WTP Project Safety Analysis Report (SAR) are carried out.

The WTP facility design is based on the design and operational experience gained at other nuclear and chemical facilities. As such, the potential hazards are well understood and lessons learned from earlier facilities are applied.

3.0 Authorization Basis

In this section, the content, control, and update of the authorization basis are discussed. The authorization basis is the composite of information provided by the WTP Project Contractor in response to radiological, nuclear, and process safety requirements that is the basis on which the DOE grants permission to perform regulated activities related to WTP radiological, nuclear, and process safety.

3.1 Content of the Authorization Basis

The authorization basis for WTP includes the DOE-approved documentation. This documentation includes that information submitted in connection with a request for Standards Approval, a request for Construction Authorization, or a request for Operations Authorization as described in DOE/RL-96-0003, Revision 2, *DOE Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor*, and any other information submitted by the WTP Project Contractor in connection with these requests. Amendments to this information may be in the form of revisions to the previously submitted documents, or new information that supplements previously submitted information. The authorization basis begins at the Standards Approval regulatory action and continues throughout the design, construction, commissioning, operation, and deactivation of the WTP.

Other documents generated by the regulator or the WTP Project Contractor may become part of the authorization basis for the Project. This includes correspondence concerning the safety aspects of the facility design, construction, operation, and plans for deactivation.

3.2 Control of the Authorization Basis

The AB documents for theWTP Project are considered configured items under Configuration Management. Changes to AB documents are managed by the WTP Project configuration management program.

3.3 Changes to the Authorization Basis

Changes to the authorization basis include changes to the facility design and administrative controls (e.g., procedures, programs, plans, or management processes) that are described in the authorization basis or are relied on to ensure conformance to the authorization basis. Changes to the authorization basis are managed by a configuration management program using the Project procedure for AB maintenance. All changes to the authorization basis will be in accordance with *Office of Safety Regulation Position on Contractor-Initiated Changes to the Authorization Basis* (RL/REG-97-13).

4.0 Internal Safety Oversight

Internal safety oversight for the WTP Project involves several oversight functions to ensure safety of the public and workers and to preclude environmental degradation. These internal safety oversight functions include corporate safety assessments, management assessments, independent assessments and audits, safety committees, incident investigations, maintenance of the authorization basis, and, during radiological operations, the USQ process. Assessments of the WTP Project verify that public and worker safety considerations are reflected in the design, procurement, construction, and commissioning of the facility. Assessments are covered in 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*. Several administrative functions provide information on the adequacy of the oversight functions and also provide information used to define the scope of future internal safety oversight functions. This information includes: performance monitoring; performance indicators; lessons learned and industry experience; and feedback and trending.

The following activities are part of internal safety oversight:

1) Conducting performance-based assessments that emphasize work activity in progress
2) Reporting deficient conditions to line management
3) Following up on corrective actions to prevent a recurrence of the deficiency
4) Applying performance trending to determine existence of programmatic issues and plan for future oversight areas
5) Understanding the requirements of the Price Anderson Amendments Act and 10 CFR 820, “Procedural Rules for DOE Nuclear Activities”
6) Assisting line management to establish a positive safety culture
7) Incorporating applicable lessons learned from previous WTP incidents and industry experience at other DOE sites and the commercial power industry relevant to the Project oversight program
8) Maintaining a continuing interaction with the WTP Project Regulator on the status and direction of project oversight activities.

Internal oversight may include participation of staff members external to the WTP Project Contractor. Members are selected based on their experience and qualifications to provide different perspectives or expertise in specific functional areas.

5.0 Integrated Safety Management

This chapter describes how safety management is integrated into work planning and performance. Lines of responsibility and authority for integrated safety management issues are described. Personnel qualification, resource allocation, and hazard assessments, controls, and operating conditions are discussed.

5.1 Integration Into Work Planning and Performance

The Project safety management process protects the public, workers, and the environment through implementing work practices that never compromise safety for the sake of production or expediency. This is achieved by way of the following:

1) Conduct activities in an atmosphere of trust and confidence based on open, honest, and responsible communication
2) Encourage employee feedback
3) Use proven and effective approaches to risk identification and control
4) Conduct business with integrity and mutual respect for employees and interfacing organizations
5) Apply a systematic approach to all activities that affect integrated safety management
6) Establish clear ownership and accountability
7) Define and reach agreement with the employees on the work to be accomplished by the facility operation and the expectation to accomplish the work in a safe manner
8) Promote teamwork through involvement of knowledgeable parties
9) Empower employees to effectively protect themselves, the public, and the environment
10) Allocate appropriate resources to support integrated safety management activities
11) Support continuous improvement of integrated safety management performance
12) Manage and conduct a consistent and project-wide integrated approach to integrated safety management for all activities
13) Encourage and promote sharing integrated safety management information and resources

Application of the above work practices allows the WTP Project team to effectively implement WTP Project Contractor guiding principles for integrating safety management into work planning and performance efforts. These guiding principles include establishing line management responsibility for integrated safety management, establishing and making clear lines of authority, ensuring that personnel have the necessary qualifications to perform the work, providing effective allocation of resources, performing pre-work hazard assessments, establishing appropriate controls for hazards and hazardous situations, and establishing operational requirements.

These work practices and principles are an integral part of the WTP Project team safety culture. They are formalized in WTP Project policies, procedures, and instructions and are incorporated into all activities

described in the following sections. The flowdown of these work practices, and principles to subcontractors is discussed in Section 7.0 "Control of Subcontractors".

5.2 Line Management Responsibility for Integrated Safety Management

Line management responsibility and accountability for safety is one of the key principles of the WTP Contractor approach to safety management integration. To ensure maximum effectiveness in integrated safety management performance, employees are informed of their responsibility and accountability for creating and maintaining a safe and healthy workplace and protecting the environment.

In addition, safety management support individuals do not assume roles that reside with the line organization. This creates an environment where accountability is clearly focused and safety management priorities are never sacrificed to another line mission or objective.

5.3 Lines of Authority and Responsibility

Clear and unambiguous lines of authority and responsibility are established throughout the Project through its design, construction, operation, and deactivation phases. The flowdown of safety management responsibility and accountability starts with the WTP Project Manager and extends through the management and supervisory chain to each worker, irrespective of the type of work being performed. This flowdown is captured in policies and procedures, communicated to the workforce through orientation and training, reinforced by group and individual performance evaluations, and monitored and assessed by independent oversight provided by safety management professionals.

Stop-work authority also flows down from senior management to individual workers who are explicitly empowered to halt any activity in which they are engaged that is unsafe or potentially harmful to the environment.

6.0 Organization Roles, Responsibilities, and Authorities

The responsibility for the design, construction, commissioning, operation, and deactivation of the River Protection Project-Waste Treatment Plant lies with the designated WTP contractors throughout these various life-cycle phases of the WTP facility. These contractors to the Department of Energy, Office of River Protection will include the Design, Construction, and Commissioning (DC&C) contractor, the Operations contractor, and the Deactivation contractor.

These contractor's roles, responsibilities, and authorities include defining and implementing nuclear, radiological, and process safety standards and the related safety bases for protection of the WTP occupational workers and the public. These WTP contractors are responsible for defining and implementing DOE-approved safety standards and communicating those safety standards as requirements to all WTP Project team members and subcontractors who conduct work on the Project.

While the WTP Project team members manage subcontractors, the WTP contractors retain responsibility for oversight of team members and subcontractors performance and for overall project safety. The commitment inherent in this structure is that line management retains the responsibility for development

and implementation of the safety basis. Although some specific roles may be reassigned within the organization, line management's responsibility for safety is invariant.

Overall Project roles, responsibilities, and authorities are provided in 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual.* Project roles, responsibilities, and authorities related to radiological, nuclear, and process safety for the DC&C contractor shall be clearly defined. Envisioned roles, responsibilities, and authorities related to radiological, nuclear, and process safety for the Operations contractor shall be clearly defined.

7.0 Control of Subcontractors

The WTP Contractor is responsible for ensuring that all subcontractors work as safely as the WTP Project employees. The WTP Project Contractor's responsibilities include the following:

1) Informing the subcontractors of known fire, explosion, or toxic hazards relating to the subcontractor's work and the process
2) Explaining to the subcontractor the applicable provisions of the emergency plan
3) Developing and implementing safe work practices to control the entrance, presence, and exit of subcontractor employees, including their presence in areas of the process covered by the PSM standard
4) Periodically evaluating the performance of subcontractors in fulfilling their obligations as stated
5) Maintaining an illness and injury log relating to the subcontractor work in the process areas

Each subcontractor's responsibilities include the following:

1) Ensuring that subcontractor employees are trained in the work practices necessary to safely perform their assignments
2) Ensuring that subcontractor employees are instructed in the known hazards of the process as related to their job assignments, and in the relevant provisions of the emergency management plan
3) Documenting that each subcontractor employee has received and understood the training required to work safely at the WTP
4) Ensuring that each subcontractor employee follow the safety rules of the WTP and the site safe work practices, and advise the contractor of any unique hazards presented or found during the course of the subcontractor's work

Project integrated safety management requirements are imposed on subcontractors in contracting documents. Subcontractors are required to appoint an integrated safety management representative who is the interface with the WTP Project team on all integrated safety management matters.

To ensure that WTP subcontractors are performing their work safely, both formal and informal safety reviews and assessments are performed. Results of these evaluations are transmitted to both Project management and to the affected subcontractors.

IDENTIFICATION OF IMPLEMENTING STANDARDS FOR THE WTP MANAGEMENT AND ORGANIZATION

1 Purpose

The River Protection Project Waste Treatment Plant (WTP) project contract with the Department of Energy (DOE) [Ref. 1] requires that the WTP contractor develop Management and Organization elements in accordance with the requirements of the Safety Requirements Document (SRD) [Ref. 2] safety criteria 1.0-9, 7.0-4, 7.1-1, 7.1-2, 7.1-3, 7.3-1, 7.3-8, 7.3-10, and 9.0-2. The contract also requires compliance with 10 CFR 830 and other laws and regulations. With the transition of the WTP project to the Bechtel National, Inc (BNI) design, construction, and commissioning (DC&C) contract, the standard selected for the implementing standard for these elements of the project management and organization was evaluated to determine if a new standard should be selected. This attachment to 24590-WTP-ABCN-ESH-01-007 documents this evaluation of the selection of a new implementing standard for management and organization.

2 Scope

This attachment documents the results of a specially constituted Integrated Safety Management (ISM) team for re-evaluation and identification of a management and organization implementing standard. It also furnishes a summary of an integrated safety management process for identification of these standards, rationale for the re-evaluation and identification of the standard, and documentation to demonstrate the standard meet the ISM standards selection process acceptance criteria.

To support re-evaluation of the implementing standard for management and organization a “standards selection process”, using the project ISM process, was undertaken in compliance with the DOE/RL-96-0004 [Ref. 5] regulatory process. The project-specific implementing standard for this regulatory process is detailed in Appendix A of the SRD [Ref. 2], “Implementing Standard for Safety Standards and Requirements Identification”.

The identification of implementing codes and standards affecting the management and organization elements was performed in compliance with the procedural requirements specified in project procedure 24590-WTP-GPP-SANA-002 [Ref. 6]. This procedure requires that identification of standards, other than engineering/design, manufacture/fabrication, and construction standards (e.g., standards for quality assurance, conduct of operations, etc.), is performed by specially constituted teams formed by the Process Management Team (PMT).

3 Discussion

Based on the standards identification results of the ISM team and the PMT recommendation of the selected standard to the RPP-WTP Project Safety Committee (PSC) Chair, the PSC Chair requests the PSC confirm the selected set of standards.

3.1 Approach

Upon confirmation of the ISM process-selected implementing standard for management and organization by the PSC and approval by the Project Manager, based on the PSC recommendation, the implementing standard will be proposed for DOE approval of an SRD update, utilizing the project Authorization Basis Maintenance Process.

Following approval of the ABCN by the DOE Office of Safety Regulation (OSR), the results of the standards selection ISM process will be documented in the applicable SRD safety criteria for Management and Organization.

3.1.1 ISM Team Composition

A multi-discipline ISM team reviewed the existing implementing standards for the RPP-WTP Management and Organization elements and provided recommendations for revision. This team[1] consisted of the following individuals:

Name	Title	Department
Karen Vacca, team chairperson	Area Training Manager	Commissioning & Tng
Dilip Patel	Deputy EM - Electrical	Engineering
Gary Grant	Manager, Quality Assurance	Quality Assurance
Ken Gibson	Safety and Licensing Engineer	ES&H/Regulatory Safety

Note 1: The team was confirmed at the PMT meeting held on June 1, 2001

3.1.2 Implementing Standards Selection Criteria

When properly implemented, the set of standards for management and organization will:

1 Provide adequate safety
2 Comply with applicable laws and regulations
3 Conform with the Top-Level Safety Standards and Principles

At a minimum, the assessment team also considered the following contractual [Ref. 1] requirements for the radiological, nuclear, and process safety as excerpted from the contract Statement of Work, Section C6, Standard 7, Item (e)(2):

(i) The Contractor shall develop and implement an integrated standards-based safety management program to ensure that radiological, nuclear, and process safety requirements are defined, implemented, and maintained. Radiological, nuclear, and process safety requirements shall be adapted to the specific hazards associated with the Contractor's WTP activities.

(ii) The Contractor's integrated standards-based safety management program shall be developed to comply with the specific nuclear safety regulations defined in the effective rules of the 10 CFR 800 series of nuclear safety requirements and with the regulatory program established in the following four documents:

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

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

(C) DOE/RL-96-0005, *Concept of the DOE Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor;* and

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

Changes to the four documents will be analyzed under RL/REG-98-14, *Regulatory Unit Position on New Safety Information and Back-fits*, and, if implemented, dispositioned in accordance with the Section I Clause entitled, *Changes*.

The integrated standards-based safety management program shall integrate the appropriate planning and practices elements specified in 29 CFR 1910.119, *Occupational Safety and Health Act of 1970, Process Safety Management of Highly Hazardous Chemicals*, to the extent that highly hazardous chemicals are present in quantities covered by 29 CFR 1910.119.

(iii) (only applicable to the Integrated Safety Management Plan)

(iv) The Contractor shall prepare and submit to DOE for review and approval, the radiological, nuclear, and process safety deliverables defined in Table S7-1, *Radiological, Nuclear, and Process Safety Deliverables.* Each deliverable is structured around the following six activities:

(A) Standards Approval;

(B) Initial Safety Evaluation;

(C) Authorization for Construction and Cold Commissioning;

(D) Authorization for Hot Commissioning;

(E) Oversight Process Determination; and

(F) Deactivation Safety Assessment.

For the QA program, as excerpted from the contract Statement of Work, Section C6, Standard 7, item (e)(3), Quality Assurance:

(3) Quality Assurance:

The Contractor shall develop a QA Program, supported by documentation that describes overall implementation of QA requirements. Documentation shall identify the procedures, instructions, and manuals used to implement the Contractor's QA program within the Contractor's scope of work. Specific requirements for process development, waste form qualification and testing are described in Standards 2 and 6. The Contractor's documentation shall be submitted to DOE for review and approval (Table C.5-1.1, Deliverable 7.2). The Contractor shall utilize a technically defensible graded approach to develop the QA program based upon the requirements of:

(i) QA for radiological, nuclear, and process safety shall be conducted in accordance with 10 CFR 830.120.

(ii) QA for process development, waste form qualification and testing shall be conducted as described in Standards 2 and 6. This portion of the QA program shall be described in a QA Provisions document and be provided to DOE for concurrence within 2 months of Contract award. The quality assurance program description shall address the following requirements:

(A) The Contractor shall implement the Office of Civilian Radioactive Waste Management's, Quality Assurance Requirements and Description Document (QARD), DOE/RW-0333P, Revision 10, for elements of the Contractor's scope that may affect the Immobilized High-Activity Waste (IHLW) product quality, including but not limited to, waste form development, qualification, characterization, production process control, and certification of the IHLW.

(B) The Contractor shall implement the National Consensus Standard AMSE/NQA-1, 1989, Revision (NQA-1) for elements of the Contractor's scope that may affect product quality of the Immobilized Low-Activity Waste (ILAW), entrained solids, and sludge washing, including, but not limited to, waste form development, qualification, characterization, production process control, certification of ILAW, entrained solids, and sludge washing. Furthermore, all research and technology activities (other than IHLW – see (A)) shall be conducted in accordance with NQA-1.

(iii) QA for permitting activities shall be conducted in accordance with all applicable laws and regulations, including RCRA, TSCA (if later directed by DOE), and WAC 173-303 QA requirements.

(iv) QA for facilities, projects, and secondary wastes not subject to the above requirements shall be done in accordance with DOE Order 414.1A.

(v) The Contractor may be required to use additional consensus standards in order to describe and implement a fully functional, systematic QA program for nuclear facility construction or for nuclear safety-related work. The RPP adopted the NQA-1 (1989 Revision) as the primary QA reference document and the Contractor shall utilize this Standard to help achieve the quality objectives of this Contract, as necessary.

(vi) DOE or its designee(s) shall have access to, and the right to conduct assessments, audits, and/or surveillance of the Contractor (and its subcontractors/suppliers, at any level) activities to ensure compliance with the appropriate requirements and the Contractor's QA program, at DOE discretion.

The selection of implementing standards considered that the QA Program is structured to meet the composite requirements of:

1 10 CFR 830 Subpart A~~.120~~ and DOE Order 414.1A,
2 Principles stipulated in *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for TWRS Privatization Contractors*, DOE/RL-96-0006 (DOE-RL 1996b), and
3 Specific contract requirements

The QA Program, as described in requirements of the project Quality Assurance Manual (QAM) [Ref. 7], provides assurance that the design, procurement, construction, testing, inspection, operation, deactivation, waste form qualification, modification, and maintenance activities conducted at the facility conform to regulatory and contractual requirements and reflect best industry practices.

3.2 Results of ISM Team Standards Selection Process

The ISM team reviewed the contract required standards and a candidate set of implementing standards. This set of standards provided acceptable methods for implementing the requirements of 10 CFR 800 series, the contract, and the SRD. A listing of these candidate standards follows:

ASME NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*, and supplements, American Society of Mechanical Engineers, Fairfield, New Jersey.

DOE Order 414.1A, *Quality Assurance*, 29 September 1999.

DOE Order 414.1A, Attachment 1, Contractor Requirements Document (CRD) DOE O 414.1A, *Quality Assurance*, 29 September 1999.

DOE Guide DOE G 414.1-1, *Implementation Guide for Use with Independent and Management Assessment Requirements of 10 CFR 830.120 and DOE Order 5700.6C Quality Assurance*, August 1996.

DOE Guide DOE G 414.1-2, *Quality Assurance Management System Guide for use with 10 CFR 830.120 and DOE Order 414.1*, June 1999.

24590-WTP-QAM-QA-01-001, Revision 0, *Quality Assurance Manual.*

DOE/RW-0333P, *Quality Assurance Requirements Document and Description for the Civilian Radioactive Waste Management Program*, Revision 10, July 2000.

SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Safety Analysis Reports.*

SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach*

Summary of Selected Implementing Standard

The ISM Team determined that, from the set of candidate implementing standards for management and organization, the following implementing standards provide an adequate set of standards for the management and organization safety criteria considered (safety criteria 1.0-9, 7.0-4, 7.1-1, 7.1-2, 7.1-3, 7.3-1, 7.3-8, 7.3-10, and 9.0-2):

~~- *Quality Assurance Requirements for Nuclear Facility Applications*, (ASME NQA-1, 1989) [Ref. 8]~~

- 24590-WTP-QAM-QA-01-001, Quality Assurance Manual,
- SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Safety Analysis Reports*
- SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach*

3.2.1 Adequate Safety

The current set of DOE approved safety criteria requirements for management and organization is furnished in SRD safety criteria 1.0-9, 7.0-4, 7.1-21, ~~through~~ 7.1-3, 7.3-1, 7.3-8, 7.3-10 and 9.0-2. There are no proposed changes to this set of currently approved SRD safety criteria, other than the selection of the new implementing standard. It is proposed to delete safety criterion 7.1-1 based on DOE approval of the removal of the Risk Management Plan, Section 9.3 of the SRD Volume II, approved by DOE evaluation letter 01-OSR-0311 dated 17 September 2001. Use of SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach*~~ASME NQA-1-1989~~, 24590-WTP-QAM-QA-01-001, Quality Assurance Manual , and SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Safety Analysis Reports* as implementing standards for SRD Safety Criteria 1.0-9, 7.0-4, 7.1-21, ~~through~~ 7.1-3, 7.3-1, 7.3-8, 7.3-10 and 9.0-2 was reviewed by the ISM team to confirm that adequate safety is provided by using these standards for management and organization. This review was conducted through assessment of the scope and content of the implementing standard to ensure it provided adequate guidance to meet existing SRD safety criteria for management and organization.

The adequacy of these SRD safety criteria to support adequate safety is supported by prior DOE evaluation of the adequacy of these SRD safety criteria. The RU reviewed the original SRD safety criteria and reported the results of the review in RL/REG-98-01. The conclusions of the review were that the project had established safety criteria (including SRD SC 1.0-9, 7.0-4, 7.1-21~~, through~~ 7.1-3, 7.3-1, 7.3-8, 7.3-10 and 9.0-2.) that provided commitment to full compliance with 10 CFR 800 series of nuclear safety requirements and the top level safety standards of DOE/RL-96-0006. Additionally the RU reviewed Revision 1A of the SRD safety criteria and reported the results in RL.REG-98-20, Revision 1. Specific to Safety Criterion 9.0-2, DOE stated that the cited standard (sections of the ISMP) is not adequate for internal safety assessment, i.e. an appropriate subordinate standard should address the level, rigor, and manner in which this safety assessment would be performed. The requirement for internal assessments is by the use of DOE Guide DOE G 414.1-2, Section 4.10, as the implementing standard. Use of the implementing standard is consistent with SAR related commitments for management and organization in the ISMP.

3.2.2 Compliance with Applicable Laws and Regulations

Selection of SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach*~~NQA-1~~ for safety criteria 1.0-9, 7.0-4, 7.1-21 and ~~through~~ 7.1-3 as the implementing standard is compliant with the current 10 CFR Part 830.120 requirements, as well as a

specific new requirement specified in 10 CFR 830 Subpart A (effective April 10, 2001) in paragraph 830.121, item (c) (3): "The QA Program must use voluntary consensus standards in its development and implementation, where practicable and consistent with contractual and regulatory requirements, and identify the standards used."

As stated in the Forward of 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) , the QAM provides information on principles, requirements, and practices used to establish and implement an effective QA Program in accordance with the requirements of 10 CFR 830, Subpart A, DOE O 414.1A, ASME NQA-1-1989, and DOE/RW-0333P. The selection of 24590-WTP-QAM-QA-01-001, Quality Assurance Manual for safety criteria 7.3-1, 7.3-8, 7.3-10 and 9.0-2 as the implementing standard is compliant with the 10 CFR 800 series of nuclear safety requirements.

3.2.3 Conformance to Top-Level Safety Standards

Top-level safety standards for management and organization are provided in DOE/RL-96-0006 [Ref. 2]. These "0006" standards related to management and organization are identified as follows, along with an assessment of how use of the selected implementing standard ensures conformance to these top-level safety standards.

DOE/RL-96-0006; Item 4.1.2.1 Safety Responsibility – Safety Responsibility

> Ultimate responsibility for the safety of the facility rests with the Contractor. In no way should this responsibility be diluted by the separate activities and responsibilities of designers, suppliers, constructors, the Regulatory Unit, or independent oversight bodies.

Evaluation: This principle is the subject of the requirements contained in SRD SC 1.0-9. Contract No. DE-AC27-01RV14136 Section C4(a) specifically requires the WTP "Contractor to be responsible for protecting human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional, construction, industrial and occupational hazards. The Contractor shall also provide safe and healthful working condition for employees, subcontractors and all other personnel under the Contractor's control who work in the general vicinity of the Contractor site and facilities." Additionally, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. The QA Program identifies ASME-NQA-1-1989 as the implementing standard. The Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001 provides the details of the QA Program. ~~Policy Q-01.1 of the QAM~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* details the WTP contractors' acceptance of the responsibility for safety of the WTP and that assignments of the roles and responsibilities for project management and will be maintained and clearly defined throughout the project life. This requirement will ensure that safety criterion 1.0-9 remains implemented on the project.

DOE/RL-96-0006; Item 4.1.2.2 Safety Responsibility – Safety Assignments

> The assignment and subdivision of responsibility for safety should be kept well defined throughout the life of the facility.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.0-4. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. The QA Program

identifies ASME-NQA-1-1989 as the implementing standard. The QAM, 24590-WTP-QAM-QA-01-001 provides the details of the QA Program. Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~Policy Q-01.1 of the QAM~~ details the assignments of the roles and responsibilities for project management and will be maintained and clearly defined throughout the project life. This requirement will ensure that safety criterion 7.0-4 remains implemented on the project.

DOE/RL-96-0006; Item 4.1.4.1 Safety/Quality Culture – Safety/Quality Culture

A safety/quality program should be established that governs the Contractor's actions and interactions of all personnel and organizations engaged in activities related to the facility and emphasizes excellence in all activities. The Contractor should have safety and quality responsibilities specifically identified in its operations.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.1-3. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. The QA Program identifies ASME-NQA-1-1989 as the implementing standard. The QAM, 24590-WTP-QAM-QA-01-001 provides the details of the QA Program. Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~Policy Q-01.1 of the QAM~~ details the assignments of subdivision for safety responsibility and will be maintained and clearly defined throughout the project life. This requirement will ensure that safety criterion 7.1-3 remains implemented on the project.

DOE/RL-96-0006; Item 4.1.6.1 Quality Assurance – Quality Assurance Application

Quality Assurance and quality control should be applied throughout all phases and to all activities associated with the facility as part of a comprehensive system to ensure with high confidence that all items delivered and services and tasks performed meet required standards.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.3-1. 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) establishes the requirements to ensure the appropriate controls are developed to address this aspect of DOE/RL-96-006, as well as the QA program aspects of 10 CFR Part 830.120. The QAM provides comprehensive guidance for nuclear quality-related project activities. The QARD provides additional QA requirements to meet the high-level waste product aspects of the project and is identified in section 4 of each policy in the QAM.

The QAM requirements and implementation matrix [Ref. 10] provides a cross reference of how these selected implementing standards address the requirements to provide a QA program that will meet this aspect of QA, as well as each of the ten QA program aspects of 10 CFR Part 830, Subpart A, thus providing comprehensive guidance for all quality-related project activities. Selection of 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) for the QA Program and the QAM, Policy Q-02.1, Section 1.3 – Graded Approach maintains conformance with top-level principle 4.1.6.1.

DOE/RL-96-0006; Item 4.1.6.2 Quality Assurance – Established Techniques and Procedures

The Contractor should use well proven and established techniques and procedures supported by quality assurance practices to provide high quality equipment and achieve high quality construction.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.3-1. 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) is the DOE approved manual that establishes the quality assurance requirements for Bechtel National, Inc. at the Waste Treatment Plant (WTP) Project Its selection as an implementing standard for the QA Program maintains conformance with top-level principle 4.1.6.2. The QAM requirements and implementation matrix [Ref. 10] provides a cross reference of how these selected implementing standards address the requirements to provide a QA program that will meet this standard. The QARD provides additional assurance the appropriate QA requirements are met for high-level waste product aspects of the project and is identified in section 4 of each policy in the QAM.

DOE/RL-96-0006; Item 4.3.1.1 Conduct of Operations – Organizational Structure

The Contractor should exert full responsibility for the safe operation of the facility through a strong, unambiguous organizational structure.

Evaluation: This principle is the subject of the requirements contained in SRD SC 1.0-9 and 7.0-4. Contract No. DE-AC27-01RV14136 Section C4(a) specifically requires the WTP "Contractor to be responsible for protecting human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional, construction, industrial and occupational hazards. The Contractor shall also provide safe and healthful working condition for employees, subcontractors and all other personnel under the Contractor's control who work in the general vicinity of the Contractor site and facilities." These requirements encompass safety criterion 1.0-9. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. The QA Program identifies ASME-NQA-1-1989 as the implementing standard. The QAM, 24590-WTP-QAM-QA-01-001 provides the details of the QA Program. Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~Policy Q-01.1 of the QAM~~ details the assignments of the roles and responsibilities for project management and will be maintained and clearly defined throughout the project life. This requirement will ensure that safety criterion 7.0-4 remains implemented on the project.

DOE/RL-96-0006; Item 4.3.1.5 Conduct of Operations – Internal Surveillance and Audits

Internal safety review procedures should be used by the Contractor to provide a continuing surveillance and audit of facility operational safety and to support the facility manager in overall safety responsibilities.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.1-3. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. The QA Program identifies ASME-NQA-1-1989 as the implementing standard. The QAM, 24590-WTP-QAM-QA-01-001 provides the details of the QA Program. Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~Policy Q-01.1 of the QAM~~ details the assignments of subdivision for safety responsibility and will be maintained and clearly defined throughout the project life and Section 4.0~~Policies Q-18.1 and Q-18.2~~ details the requirements for safety assessments, management assessments, independent

assessments (audit) and surveillance ~~respectively~~. This requirement will ensure that safety criterion 7.1-3 remains implemented on the project.

DOE/RL-96-0006; Item 4.4.1 Safety Review Organization

The Contractor should establish a framework for its safety review organizations that are responsible for assuring the safety of the facility. The separation between the responsibilities of the safety review organizations and those of the other organizations should remain clear so that the safety review organizations retain their independence as safety authorities.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.1-3. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. The QA Program identifies ASME-NQA-1-1989 as the implementing standard. The QAM, 24590-WTP-QAM-QA-01-001 provides the details of the QA Program. ~~Policy Q-01.1 of the QAM~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* details the assignments of subdivision for safety responsibility and will be maintained throughout the project life. This requirement will ensure that safety criterion 7.1-3 remains implemented on the project.

DOE/RL-96-0006; Item 4.4.2 Qualified Personnel

Internal safety oversight should be conducted by qualified personnel to ensure that the safety standards are consistently met.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.1-3. This principle is the subject of the requirements contained in SRD SC 7.1-3. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. The QA Program identifies ASME-NQA-1-1989 as the implementing standard. The QAM, 24590-WTP-QAM-QA-01-001 provides the details of the QA Program. ~~Policy Q-01.1 of the QAM~~ Section 4.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* details the assignments of internal safety oversight~~subdivision for safety responsibility and~~ that will be maintained throughout the project life. This requirement will ensure that safety criterion 7.1-3 remains implemented on the project.

DOE/RL-96-0006; Item 4.4.3 Recommendation for Initiation of Construction

The Contractor should request authorization for construction only after being satisfied by appropriate internal assessments that the main safety issues have been satisfactorily resolved and that the remainder are amenable to solution before operations are scheduled to begin.

Evaluation: This principle is the subject of the requirements contained in SRD SC 9.0-2. ABCN 24590-01-00004, Revision 1 has identified a new Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Report* for the WTP that includes the statement that the PSAR should state that all major safety issues were resolve prior to the submittal of the PSAR and it should identify and provide a schedule for resolution of other safety issues scheduled for completion. The requirement coupled with the requirement to complete an assessment in accordance with 24590-WTP-QAM-QA-01-001, Quality Assurance Manual , Policy 18.1 – Independent Assessment (Audit) 4.10 will ensure that safety criterion 9.0-2 is implementing on the project.

DOE/RL-96-0006; Item 5.1.3 Process Safety Responsibility

The ultimate responsibility for process safety rests with the Contractor. In no way should this responsibility be diluted by the separate activities and responsibilities of designers, suppliers, constructors, the Regulatory Unit, or independent oversight bodies.

Evaluation: This principle is the subject of the requirements contained in SRD SC 1.0-9 and 7.1-3. Contract No. DE-AC27-01RV14136 Section C4(a) specifically requires the WTP "Contractor to be responsible for protecting human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional, construction, industrial and occupational hazards. The Contractor shall also provide safe and healthful working condition for employees, subcontractors and all other personnel under the Contractor's control who work in the general vicinity of the Contractor site and facilities." These requirements encompass safety criterion 1.0-9. Additionally, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. The QA Program identifies ASME-NQA-1-1989 as the implementing standard. The QAM, 24590-WTP-QAM-QA-01-001 provides the details of the QA Program. ~~Policy Q-01.1 of the QAM~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* details the assignments of the roles and responsibilities for project management and will be maintained throughout the project life. This requirement will ensure that safety criterion 7.1-3 remains implemented on the project. These principles clearly identify the contractor as the ultimate responsibility for safety and ensure that this responsibility will remain throughout the project.

DOE/RL-96-0006; Item 5.2.5 Subcontractors

The Contractor may engage a subcontractor to perform maintenance, renovations, or specialty work on, or adjacent to, the process. The Contractor should inform the subcontractor of potential hazards related to the subcontractor's work and take appropriate measures to ensure the subcontractors provide their workers with appropriate procedures and training necessary for performing their jobs safely.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.1-2. Contract No. DE-AC27-01RV14136 Standard 4(b)(2) requires that the contractor develop a purchasing system for DOE approval in accordance with section 1 Clause entitled, *Subcontracts* (Table C.5-1.1, Deliverable 4.3). Additionally Contract No. DE-AC27-01RV14136 Section H.22 describes the subcontractor ESQ&H requirements. Section 7.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* details the requirements for the control of subcontractors. This requirement will ensure that safety criterion 7.1-2 remains implemented on the project.

DOE/RL-96-0006; Item 5.2.12 Compliance Audits

The Contractor should conduct a compliance audit periodically to certify that the procedures and practices developed under the process safety management program are adequate and are being followed. The frequency of compliance audits is based on the applicable standards and the nature of the process hazards. The Contractor should promptly determine and document an appropriate response to each finding of the compliance audit. The results of the audits should be available to the Director of the Regulatory Unit in support of regulatory oversight.

Evaluation: This principle is the subject of the requirements contained in SRD SC 7.3-10. Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Standard 7(e)(3)(iii) & (iv), ASME-NQA-1-1989 and DOE O 414.1A are identified. BNI will complete the necessary compliance audits using the guidance provided in 24590-WTP-QAM-QA-01-001, Quality Assurance Manual , Policy Q-18.1 – Independent Assessment (Audit) to comply with this safety criterion.

3.2.4 Evaluation Against Applicable SRD Safety Criteria

The SRD safety criteria for the selected management and organization criteria under consideration are provided in the Safety Criteria in SRD Sections 1.0-9, 7.0-4, 7.1-1 through 7.1-3, 7.3-8, 7.3-10 and 9.0-2. Safety Criteria 1.0-9, 7.0-4, 7.1-1 through 7.1-3, 7.3-8, 7.3-10 and 9.0-2 address management and organization requirements for the facility. The evaluation, as summarized below, demonstrates that a new~~no~~ proposed implementing standard is necessary in meeting these safety criteria.

SRD Safety Criterion: 1.0-9

The RPP-WTP Contractor shall accept responsibility for the safety of the RPP-WTP.

Evaluation: Contract No. DE-AC27-01RV14136 Section C4(a) specifically requires the WTP "Contractor to be responsible for protecting human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional, construction, industrial and occupational hazards. The Contractor shall also provide safe and healthful working condition for employees, subcontractors and all other personnel under the Contractor's control who work in the general vicinity of the Contractor site and facilities." Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Standard 7(e)(3)(ii)(B), ASME-NQA-1-1989 is identified. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for SC 1.0-9 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work.

SRD Safety Criterion: 7.0-4

The assignment and subdivision of responsibility for safety within the contractor's organization shall be kept well defined throughout the life of the facility.

Evaluation: Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. Standard 7(e)(3)(ii)(B) identifies ASME-NQA-1-1989. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for SC 7.0-4 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contain specific requirements for documenting the

organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work. The QAM provides the details of the QA Program. Policy Q-01.1 of the QAM details the assignments of the roles and responsibilities for project management and will be maintained throughout the project life.

SRD Safety Criterion: 7.1-1 [Proposed]

~~Safety management shall oversee the implementation of the risk management program elements. A qualified person shall be assigned the overall responsibility for the development, implementation, and integration of the risk management program elements. If responsibility for implementing individual requirements of the risk management program is assigned to other persons, the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.~~This safety criterion has been deleted.

Evaluation: ~~Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. Standard 7(e)(3)(ii)(B) identifies ASME-NQA-1-1989. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. Hence use of ASME-NQA-1-1989 as the implementing standard for SC 7.1-1 is appropriate. The DOE QA rule and ASME-NQA-1-1989 contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work. The QAM provides the details of the QA Program. Policy Q-01.1 of the QAM details the assignments of the roles and responsibilities for project management and will be maintained throughout the project life. Contract No. DE-AC27-01RV14136 Standard 1(e)(3) requires that the contractor develop WTP Risk Assessments that identify the major risks to achieving the baseline and the Contractor's approach for managing those risks. A core risk team has been assigned to the development of these assessments per section 3.3 of the report. These WTP Risk Assessment Reports are being completed per the Risk Management Plan (RMP) for the WTP. The RMP provides a systematic process for managing technical and programmatic risks and conforms to the recommendations of *DOE Project Management Practice 8*.~~ It is proposed to delete safety criterion 7.1-1 based on DOE approval of the removal of the Risk Management Plan, Section 9.3 of the SRD Volume II, approved by DOE evaluation letter 01-OSR-0311 dated 17 September 2001.

SRD Safety Criterion: 7.1-2

When selecting a subcontractor, information regarding the subcontract employer's safety performance and programs shall be obtained and evaluated. Subcontract employees shall be informed of the known potential fire, explosion, or toxic release hazards related to the subcontractor's work and the process. The applicable provisions of the emergency plan shall be explained to the subcontractors. Safe work practices to control the entrance, presence, and exit of subcontract employers and employees in radioactive or hazardous process areas shall be developed and implemented. The performance of subcontract employers with regard to safety shall be periodically evaluated and a subcontract employee injury and illness log related to the subcontractor's work in process areas shall be maintained.

Evaluation: Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. Standard 7(e)(3)(ii)(B) identifies ASME-NQA-1-1989. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for~~

~~SC 7.1-2 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ Section 7.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contains specific requirements for subcontractor safety performance. Contract No. DE-AC27-01RV14136 Standard 4(b)(2) requires that the contractor develop a purchasing system for DOE approval in accordance with section 1 Clause entitled, *Subcontracts* (Table C.5-1.1, Deliverable 4.3). Additionally Contract No. DE-AC27-01RV14136 Section H.22 describes the subcontractor ESQ&H requirements.

SRD Safety Criterion: 7.1-3

A framework shall be established for safety review organizations that are responsible for assuring the safety of the facility. The separation between the responsibilities of the safety review organizations and those of the other organizations shall remain clear so that the safety review organizations retain their independence as safety authorities. Internal safety oversight should be conducted by qualified personnel to ensure that the safety standards are consistently met.

Evaluation: Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. Standard 7(e)(3)(ii)(B) identifies ASME-NQA-1-1989. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for SC 7.1-3 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work. Policy Q-01.1 of the QAM details the assignments of subdivision for safety responsibility and will be maintained throughout the project life.

SRD Safety Criterion 7.3-1

The following quality assurance elements shall be applied using a graded approach:

(1) Quality Assurance Program

(2) Personnel Training and Qualification,

(3) Quality Improvement,

(4) Documents and Records,

(5) Work Processes,

(6) Design,

(7) Procurement,

(8) Inspection and Acceptance Testing,

(9) Management Assessment, and

(10) Independent Assessment.

Evaluation: Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830 Subpart A~~,120~~). Further in Standard 7(e)(3)(iii) & (iv), ASME-NQA-1-1989 and DOE O 414.1A are identified. BNI has chosen 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) as the implementing standard for the QA Program. Use of the QAM as the implementing standard for SC 7.3-1 is appropriate. The QAM

Policy Q-02-1, Section 1.3 provides the details of the application of the graded approach for the WTP Project.

SRD Safety Criterion: 7.3-8

Managers shall assess their management processes. Problems that hinder the organization from achieving its objectives shall be identified and corrected.

Evaluation: Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830 Subpart A~~,120~~). Further in Standard 7(e)(3)(iii) & (iv), ASME-NQA-1-1989 and DOE O 414.1A are identified. BNI has chosen 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) as the implementing standard for the QA Program. Use of the QAM as the implementing standard for SC 7.3-8 is appropriate. The QAM, Policy Q-18.3, *Management Assessments* provides the necessary guidance to complete management assessments. Policy Q-18.3 details the requirements for management assessments, which will be proceduralized and implemented by the WTP project.

SRD Safety Criterion: 7.3-10

Compliance audits shall be performed at least every three years to verify that the procedures and practices developed to ensure nuclear and process safety are adequate and are being followed. The compliance audit shall be conducted by at least one person knowledgeable in the process. A report of the findings of the audit shall be developed. An appropriate response shall be determined and documented for each of the findings of the compliance audit, and it shall be documented when deficiencies have been corrected. Employers shall retain the two most recent compliance audit reports.

Evaluation: Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830 Subpart A~~,120~~). Further in Standard 7(e)(3)(iii) & (iv), ASME-NQA-1-1989 and DOE O 414.1A are identified. BNI has chosen 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) as the implementing standard for the QA Program. Use of the QAM as the implementing standard for SC 7.3-10 is appropriate. The QAM, Policy Q-18.1 – Independent Assessment (Audit) provides the framework for results-oriented management system that focuses on performing work safely, while allowing the organization to become more efficient through process improvements. The QAM Policy Q-18.1, *Independent Assessment (Audit)* provides the necessary guidance to complete the compliance audit depicted in Safety Criterion 7.3-10.

SRD Safety Criterion: 9.0-2

The Contractor should request authorization for construction only after being satisfied by appropriated internal assessments that the main safety issues have been satisfactorily resolved and that the remainder are amenable to solution before operations are scheduled to begin.

Evaluation: ABCN 24590-01-00004, Revision 2 has identified a new SRD Volume II, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Report* for the WTP, that requires the Preliminary Safety Analysis Report to state that all major safety issues have been resolved prior to submittal and to identify and provide a schedule for resolution of other safety issues. Development of the PSAR using this new ad hoc implementing standard, coupled with the use of 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM), Policy Q-18.1, *Independent Assessments* for developing internal assessments will ensure that the contractor will comply with this safety criterion.

4 Conclusions

The ISM Team determined that the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ASME NQA-1 1989 provides an adequate and appropriate implementing standard for the management and organization safety criteria 1.0-9, 7.0-4, 7.1-21 through and 7.1-3 and that 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) provides an adequate and appropriate implementing standard for safety criteria 7.3-1, 7.3-8, 7.3-10 and 9.0-2 for the WTP. Additionally the ISM Team determined that it was appropriate to delete safety criterion 7.1-1 based on the DOE approval of the removal of the Risk Management Plan, Section 9.3 of the SRD Volume II, approved by DOE evaluation letter 01-OSR-0311 dated 17 September 2001. The ISM Team determined these implementing standards provide adequate safety, complies with applicable laws and regulations, and conforms to the Top-Level Safety Standards and Principles.

5 Recommendations

Using the following implementing standards should be recommended by the Process Management Team to the Project Safety Committee for confirmation:

SRD Volume II, SC 1.0-9, 7.0-4, 7.1-21 and 7.1-3	Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ASME NQA-1 1989
SRD Volume II, SC 7.1-1	Should be deleted from the SRD
SRD Volume II, SC 7.3-1, 7.3-8 & 7.3-10	24590-WTP-QAM-QA-01-001
SRD Volume II, SC 9.0-2	Appendix *, G, Ad Hoc Implementing Standard for SARs and 24590-WTP-QAM-QA-01-001

6 References

1 DOE Contract DE-AC27-01RV14136, December 2000, US Department of Energy, Office of River Protection, Richland, Washington.

2 *Safety Requirements Document*, 24590-WTP-SRD-ESH-01-001-02, Revision 0.

3 10 CFR 830.120 Subpart A, "Quality Assurance Requirements", *Code of Federal Regulations*, as amended.

4 *Top-level Radiological, Nuclear, and Process Safety Standards and Principles for TWRS Privatization Contractors*, DOE/RL-96-0006, Revision 1, July 1998, US Department of Energy, Richland Operations Office, Richland, Washington.

5 *Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards, and Requirements for TWRS Privatization*, DOE/RL-96-0004, Revision 1, July 1998, US Department of Energy, Richland Operations Office, Richland, Washington.

6 24590-WTP-GPP-SANA-002, Revision 0, *Hazard Analysis, Development of Hazard Control Strategies, and Identification of Standards*.

7 24590-WTP-QAM-QA-01-001, Revision 0, *Quality Assurance Manual.*

8 ASME NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*, and supplements, American Society of Mechanical Engineers, Fairfield, New Jersey.

9 DOE Guide DOE G 414.1-2, *Quality Assurance Management System Guide for use with 10 CFR 830.120 and DOE Order 414.1*, June 1999.

10 24590-WTP-QPD-QA-01-001, *Quality Assurance Provisions Document.*

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SRD Safety Criterion	Current Implementing ISMP Section	Proposed Code/Standard	Basis/Rationale
1.0-9 The RPP-WTP Contractor shall accept responsibility for the safety of the RPP-WTP.	1.0 Project Safety Approach The RPP-WTP Contractor's safety approach is implemented with the recognition that the defined work for processing and immobilizing Hanford tank waste involves inherent radiological and chemical hazards from which hazardous situations may arise. The RPP-WTP Contractor is committed to integrating the development of safety criteria and design requirements, the hazard analysis and accident analysis process, and the facility design to minimize the risk associated with these hazards and hazardous situations. The RPP-WTP Contractor accepts responsibility for the safety of the RPP-WTP and for adequate protection of the health and safety of the public, worker safety, environmental protection, and compliance with applicable laws and regulations. This chapter of the Integrated Safety Management Plan (ISMP) provides an overview of the RPP-WTP design, construction, and commissioning (DC&C) Contractor (i.e., Bechtel National, Inc. [BNI]) safety approach developed for the River Protection Project – Waste Treatment Plant (RPP-WTP). The elements of this approach, through their evolutionary implementation in Part A of the project, form the bases for this ISMP. The ISMP is followed and will be further developed during Part B of the Project for detailed design, construction, operation, and deactivation of the facility. The Project safety approach is summarized in Section 1.1, "Introduction". The components of the safety approach are described in greater detail in Section 1.2, "Summary". The elements of the safety approach are described in Section 1.3, "Description of the Integrated Safety Management Plan". 11.1 Design and Construction Phase Safety-related roles, responsibilities, and authorities for the DC&C phase of the operation, as assigned to individuals and organizations within BNI (the DC&C Contractor), are discussed below. Project Manager The Project Manager safety-related roles, responsibilities, and authorities include: 1) Responsibility for RPP-WTP safety 2) Defining safety policy, objectives, and interfaces 3) Assigning roles and responsibilities for safety-related activities 4) Setting performance expectations 5) Developing management assessment policies 6) Signatory on permit applications for construction of the Facility 7) Serving as a member of the Executive Committee 8) Ensuring implementation of the Quality Assurance Program (QAP) Deputy Project Manager The Deputy Project Manager safety-related roles, responsibilities, and authorities include:	SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~ASME NQA-1-1989 Section 1~~ ~~*Organization* (including associated supplements)~~ ~~- The organizational structure, functional responsibilities, levels of authority, and lines of communication for activities affecting quality shall be documented.~~ ~~- Persons or organizations responsible for assuring that an appropriate quality assurance program has been established and verifying that activities affecting quality have been correctly performed shall have sufficient authority, access to work areas, and organizational freedom to:~~ ~~- (1) identify quality problems;~~ ~~- (2) initiate,~~	Safety Criterion 1.0-9 is explicit in the requirement for the contractor to accept responsibility for the safety of the WTP. Contract No. DE-AC27-01RV14136 Section C4(a) specifically requires the WTP "Contractor to be responsible for protecting human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional, construction, industrial and occupational hazards. The Contractor shall also provide safe and healthful working condition for employees, subcontractors and all other personnel under the Contractor's control who work in the general vicinity of the Contractor site and facilities." These requirements encompass safety criterion 1.0-9. Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Standard 7(3)(ii)(B), ASME-NQA-1-1989 is identified. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM),

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	1) Ensuring that the RPP-WTP is designed, constructed, tested, commissioned, operated, and maintained in a safe, reliable, and efficient manner in accordance with policies and all applicable laws, regulations, authorization bases, and technical requirements 2) Integrating nuclear and industrial safety, quality, and environmental protection into all work 3) Managing the design transition, facility and process design, construction, acceptance testing, and commissioning 4) Integrating the Area Project Managers and functional managers 5) Creating an atmosphere in the workplace where reporting and resolution of conditions adverse to quality is encouraged at all levels 6) Stopping activities within his area of responsibility, which are not accomplished in compliance with applicable authorization bases and/or regulatory requirements Area Project Managers The safety-related roles, responsibilities, and authorities of the Area Project Managers, in their respective areas of responsibility, include: 1) Managing design and construction effort, in their respective area of responsibility. 2) Implementing management assessment policies, in their respective area of responsibility. 3) Implementing the contractor requirements of 10 CFR 820, "Procedural Rules for DOE Nuclear Activities", in their respective area of responsibility. 4) Ensuring the development and implementation of the incident reporting program, in their respective area of responsibility. 5) Approving final designs of Safety Design Class and Safety Design Significant features, in their respective area of responsibility. 6) Serving as principal interface with DOE on technical issues, in their respective area of responsibility. 7) Developing and managing the readiness review program to support commissioning, in their respective area of responsibility. Engineering Manager The Engineer Manager oversees the engineering design activities that are assigned to the DC&C contractor. The safety-related roles, responsibilities, and authorities of the Engineering Manager include: 1) Updating the treatment process, civil, architectural, structural, electrical, and mechanical design criteria 2) Completing the civil, structural, support system, and facility designs including the incorporation of regulatory and quality commitments	~~recommend, or provide solutions to quality problems through designated channels;~~ ~~(3) verify implementation of solutions; and~~ ~~(4) assure that further processing, delivery, installation, or use is controlled until proper disposition of a nonconformance, deficiency, or unsatisfactory condition has occurred~~ ~~Such persons or organizations shall have direct access to responsible management at a level where appropriate action can be effected.~~ ~~Such persons or organizations shall report to a management level such that required authority and organizational freedom are provided, including sufficient independence from cost and schedule~~	24590-WTP-QAM-QA-01-001. Hence use of ~~ASME NQA-1-1989 as the implementing standard for SC 1.0-9 is appropriate. The DOE QA rule and ASME NQA-1-1989~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work. The currently referenced sections of the ISMP, while not an implementing standard do contain expansion of the safety approach and roles, responsibilities and authorities for the project and remain project authorization basis requirements. Additionally, the roles and responsibilities for the WTP are found in the QAM, Policy Q-01.1.

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	3) Preparing specifications for procurement of pre-purchased equipment 4) Incorporating regulatory and quality commitments into the design, procurement, fabrication, inspection, and testing of systems and components 5) Designing measures to facilitate performance of Technical Safety Requirement (TSR) surveillances 6) Designing features to implement the design requirements of 10 CFR 835 Occupational Radiation Protection including features for ensuring personnel exposure during operation is as low as reasonably achievable (ALARA) 7) Selecting materials for fabrication and construction; defining methods for corrosion control; and specifying welding procedures, requirements for nondestructive examination, and codes and standards 8) Designing fire prevention, detection, and suppression features in compliance with state and federal requirements 9) Incorporating deactivation and decommissioning features into the facility design 10) Evaluating proposed changes to civil, structural, support system, and facility designs 11) Updating the process design specifications, process descriptions, basis of design documents 12) Completing the process design including the incorporation of regulatory and quality commitments 13) Developing and implementing the configuration management (CM) program to control the safety and design bases 14) Obtaining documentation defining the physical configuration of the facility and forwarding this documentation to the Project Administration and Controls Organization 15) Developing and implementing of CM program database <u>Construction Manager</u> The safety-related roles, responsibilities, and authorities of the Construction Manager include: 1) Implementing procedures and training to enhance construction safety 2) Providing input to the configuration management program including as-built information 3) Supporting the incident reporting system for construction-related incidents 4) Developing procedures for the handling of hazardous material during construction, including packaging, labeling, storage, and shipping practices 5) The packaging and manifesting of dangerous waste arising from construction activities 6) Interfacing with subcontractors on process safety management and ES&H matters 7) Incorporating regulatory and quality commitments of SSCs into the construction	~~considerations.~~	

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SRD Safety Criterion	Current Implementing ISMP Section	Proposed Code/Standard	Basis/Rationale
	8) Implementing the construction testing program to verify that SSCs meet acceptance testing requirements Environment, Safety & Health (ES&H) Manager The safety-related roles, responsibilities, and authorities of the ES&H Manager include: 1) Implementing internal safety and oversight functions 2) Developing safety basis and safety-related performance measures 3) Implementing the process safety management program 4) Developing and implementing the regulatory commitment tracking system, and the incident reporting program 5) Interfacing with regulators, stakeholders, and Hanford Site contractors on ES&H matters 6) Evaluating proposed changes that involve implementation of nuclear, radiological, and process safety and environmental matters 7) Implementing the fire protection program 8) Coordinating cooperative agreements with outside agencies such as fire, police, ambulance, and medical services 9) Developing and managing the ES&H portions of the readiness review program to support commissioning 10) Serving as a member of the Project Safety Committee, supporting independent safety review in the ES&H area of responsibility. 11) Updating the process hazards analysis The ES&H Manager also oversees activities related to radiological, nuclear, and process safety and environment protection. These activities include the following: 1) Identifying and evaluating new laws and regulations that may affect the Project safety programs 2) Preparing the Limited Construction Authorization (LCA) request 3) Interfacing with the regulators during onsite inspections 4) Updating the Hazard Analysis Report (HAR), Safety Requirements Document (SRD), and Integrated Safety Management Plan (ISMP) 5) Preparing the Preliminary Safety Analysis Report (PSAR) and Final Safety Analysis Report (FSAR) 6) Environmental reporting 7) Identifying requirements for worker and public safety, security, and environmental regulatory compliance		

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	8) Preparing the environmental characterization and monitoring plans 9) Preparing permit applications and plans as required for state and federal environmental regulations 10) Monitoring environmental compliance during construction 11) Developing and implementing the Environmental Radiation Protection Program <u>Quality Assurance Manager</u> The safety-related roles, responsibilities, and authorities of the QA Manager the following: 1) Developing the Quality Assurance Program (QAP) 2) Assessing and auditing project activities to verify compliance with the QAP and other requirements and to determine the effectiveness of the QAP 3) Providing support for the development of qualification and training programs to ensure that required capabilities are achieved and maintained by project personnel 4) Reviewing project documents (e.g., design documents, nuclear and process safety deliverables, work plans, and source evaluation plans) to verify inclusion of appropriate QAP requirements 5) Recommending and exercising work stoppage or controls over further processing in response to quality concerns 6) Assessing and auditing vendor and subcontractor activities to verify compliance with the QAP and other requirements and to determine the effectiveness of the QAP 7) Serving as a member of the Project Safety Committee, supporting independent safety review in the QA area of responsibility The QA Manager has the authority and responsibility to stop project work when the work, if allowed to continue, would result in activities or documents being in noncompliance with stated QAP requirements. The QA Manager is responsible for determining when appropriate corrective or preventative actions have been taken and for lifting the stop work order to allow work to proceed. <u>Operations Manager</u> The safety-related roles, responsibilities, and authorities of the Operations Manager include: 1) Developing a program for operations procedure preparation, review, verification, validation, approval, change, deviation, and internal control 2) Writing and maintaining operating procedures including post-deactivation activities 3) Performing administrative responsibilities including maintaining a qualified staff and ensuring effective employee performance 4) Performing radioactive commissioning testing to demonstrate compliance with the acceptance criteria and documenting the results to acceptance criteria.		

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	5) Serving as the chairperson for the Project Safety Committee 6) Developing and managing the readiness review program to support commissioning Research and Technology Manager The safety-related roles, responsibilities, and authorities of the Research and Technology (R&T) Manager include: 1) Serving as a member of the Project Safety Committee, supporting independent safety review in the R&T area of responsibility. Process Technology Manager The safety-related roles, responsibilities, and authorities of the Process Technology Manager include: 1) Ensuring that technologies are developed and demonstrated 2) Evaluating the completed process design and proposed changes to the design 3) Identifying commissioning tests to be performed and their acceptance criteria 4) Incorporating regulatory and quality commitments into procurement, fabrication, inspection, and testing of process components 5) Performing systematic design reviews to determine readiness to authorize fabrication and construction of structures, systems, and components (SSC) 6) Implementing design considerations for deactivation and decommissioning Commissioning Manager The commissioning organization manages the commissioning program. The safety-related roles, responsibilities, and authorities of the Commissioning Manager include: 1) Developing the objectives and scope for the startup program 2) Developing and evaluating proposed changes to the commissioning program 3) Verifying and validating operation and maintenance procedures during performance of testing 4) Providing information from the startup program to the operations, training, and procedures groups, and maintenance for verification and validation of operating administrative controls Business/Projects Control Manager The safety-related roles, responsibilities, and authorities of the Business/Projects Control Manager include: 1) Implementing the Employee Concerns Program 2) Implementing an employee feedback program		

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SRD Safety Criterion	Current Implementing ISMP Section	Proposed Code/Standard	Basis/Rationale
	3) Controlling the facility policy manual (containing the Project Manager safety policy) and all procedures 4) Developing and maintaining the records management program (See Table 8-1) 11.2 Operations Phase The envisioned safety-related roles, responsibilities, and authorities for the Operations phase of the operation, as assigned to individuals and organizations within the Operations Contract, are discussed below. <u>Facility Manager</u> Responsibilities and roles of the Facility Manager include the following: 1) Ensuring the development and implementation of facility controls to protect the health and safety of the public, and workers and to protect the environment from hazardous situations associated with the chemical and radiological hazards of the facility 2) Ensuring that operational activities are properly staffed and controlled 3) Managing operation of the facility to obtain the defined work activity while maintaining the authorization basis for the facility 4) Approving Facility activities, including modifications to Safety Design Class and Safety Design Significant SSCs 5) Ensuring that work is performed in conformance with procedures, policies, and safety requirements 6) Implementing the contractor requirements of 10 CFR 820, “Procedural Rules for DOE Nuclear Activities” 7) Serving as the Emergency Director during events categorized as emergencies 8) Assigning roles and responsibilities for activities related to safety including operations, performance improvements, safety improvements, and deactivation of the facility <u>Operations Manager</u> Roles of the Operations Manager include the following: 1) Developing a program for procedure preparation, review, verification, validation, approval, change, deviation, and internal control 2) Writing and maintaining operating procedures including post-deactivation activities 3) Performing administrative responsibilities including maintaining a qualified staff and ensuring effective employee performance 4) Performing radioactive startup testing to demonstrate compliance with the acceptance criteria and documenting the results to acceptance criteria		

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	5) Managing daily facility operation to obtain the define work activity while maintaining compliance to the TSRs 7) Performing TSR surveillances assigned to operations and supporting those TSR surveillances assigned to the Maintenance Organization 8) Scheduling and managing process system outage activities 9) Initiating and managing deactivation 10) Obtaining an understanding of the features and limitations of the facility SSCs to facilitate radioactive startup testing, facility operation, and the development of procedures and training 11) Developing and implementing the operating staff training program 12) Writing and evaluating proposed changes to administrative procedures related to facility operation 13) Ensuring operation of support systems (e.g., electrical, instrument air, and steam) 14) Performing analysis of feed material, product, and process chemicals 15) Developing procedures for hazardous material handling, packaging, labeling, storage, and shipping practices 16) The packaging and manifesting of dangerous waste 17) Evaluating proposed changes to the radioactive startup program <u>Environment, Safety, & Health Manager</u> The ES&H Manager is a member of the PSC. In addition, for the operating project the ES&H organization has the following roles: 1) Developing the emergency plan and the emergency plan implementing procedures 2) Managing emergency drills and exercises 3) Modifying plans and procedures to address internal safety and oversight functions for the deactivation phase 4) Developing deactivation safety performance measures, modification of plans and procedures, and confirmation the facility meets the safe storage criteria on completion of deactivation 5) Managing occupational health and safety 6) Obtaining monitoring, sampling, and record keeping information on facility discharges 7) Maintaining state and federal environmental permits 8) Maintaining the environmental database 9) Keeping environmental regulators informed on current status, concerns, and new data		

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	10) Identifying critical aspects of facility deactivation that would affect environmental regulatory compliance Developing the USQ identification and evaluation process 11) Developing TSR surveillance testing and evaluation program 12) Monitoring compliance to the authorization basis 13) Updating authorization basis documentation including the FSAR 14) Directing incident investigations including reporting, root cause analyses, identification of corrective actions, and tracking of effectiveness of corrective actions and applying lessons learned from relevant facilities 15) Developing a process for evaluating deficiencies to nuclear safety requirements subject to 10 CFR 820, "Procedural Rules for DOE Nuclear Activities" 16) Preparing a deactivation safety analysis report 17) Developing and implementing the Radiation Protection Program for operations that is compliant with 10 CFR 835, "Occupational Radiation Protection" 18) Performing radiation and contamination surveys and maintaining personnel exposure records 19) Informing management of conditions that could lead to exceeding radiation limits established for radiation areas or exceeding administrative limits for personnel radiological exposure 20) Monitoring deactivation activities to ensure personnel exposure meets as low as reasonably achievable (ALARA) objectives <u>Quality Assurance Manager</u> The QA Manager is a member of the PSC. Roles of the QA Organization include the following: 1) Establishing a Quality Assurance Program for operations 2) Performing independent assessments and program compliance audits 3) Reviewing the project quality procedures and documenting compliance with applicable QAP requirements 4) Modifying and implementing quality assurance plans and procedures for the for deactivation process 5) Verifying implementation of corrective action measures and determining that the solutions for quality problems are effective The QA Manager has the authority and responsibility to stop project work when the work, if allowed to continue, would result in activities or documents being in noncompliance with stated requirements. The QA Manager is responsible for determining when appropriate corrective or preventative actions have been taken and for lifting the stop work order to allow work to proceed.		

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	Engineering Manager The Engineering Manager a member of the PSC. Roles of the Engineering organization include the following: 1) Evaluating startup test results and comparing the results to acceptance criteria 2) Developing and evaluating proposed design improvements and changes to engineered features 3) Supporting resolution of production problems 4) Developing the surveillance and maintenance criteria for facility operations 5) Identifying measures that minimize hazards associated with treating and storing radioactive waste, and for the safe handling of fissionable materials 6) Performing a job hazard analysis and participating with ES&H to update HAR 7) Updating the process hazards analysis (PHA) to support permit and authorization basis updates 8) Preparing and implementing a deactivation management plan that includes: • updating the HAR • defining surveillance and maintenance criteria for deactivation and safe storage • developing facility modifications to facilitate performance of surveillance tests • implementing measures that minimize hazards associated with treating and storing radioactive materials Maintenance Manager The Maintenance Manager oversees the activities of the Maintenance organization. Roles of the Maintenance organization include: 1) Defining and implementing a maintenance program that includes preventive, predictive, and corrective maintenance practices and incorporates vendor-recommended maintenance activities and equipment history 2) Performing TSR surveillances assigned to maintenance and supporting those TSR surveillances assigned to operations 3) Implementing facility modifications 4) Developing and modifying operating and maintenance instructions for post-deactivation operational equipment 5) Writing maintenance procedures		

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SRD Safety Criterion	Current Implementing ISMP Section	Proposed Code/Standard	Basis/Rationale
	6) Collecting and processing baseline data for system and component performance monitoring and maintenance planning Startup Manager The Startup organization manages the startup testing program. Additional roles of the Startup Manager include the following: 1) Evaluating proposed changes to the startup program 2) Verifying and validating operation and maintenance procedures during performance of testing 3) Providing information from the startup program to the operations, training, and procedures groups, and maintenance for verification and validation of operating administrative controls Configuration Management Manager The Configuration Management Manager oversees the activities of the Configuration Management organization. Roles of the Configuration Management organization include the following: 1) Continued implementation of the operational configuration management program 2) Maintaining the facility operating history to facilitate deactivation of the facility Administration and Controls Manager The Administration and Controls Manager continues those activities started by the DC&C contractor Business and Project Controls Organization		
7.0-4 The assignment and subdivision of responsibility for safety within the contractor's organization shall be kept well defined throughout the life of the facility.	3.2 Safety Responsibilities BNI recognizes its corporate responsibility for safety during the design, construction, and commissioning (DC&C) phase of the project. Safety responsibilities are assigned to and by the Project Manager. The DC&C responsibilities are assigned to functional areas as shown in ISMP Tables 9-1 through 9-3. The roles assigned to organizations are provided in ISMP Chapter 11.0, "Organization Roles, Responsibilities, and Authorities". By these assignments, facility safety becomes a facility-wide responsibility with safety responsibilities identified for each functional area. In addition, by these assignments, assurance is provided that the roles identified in the Safety Analysis Reports are carried out. The Facility design is based on the design and operational experience gained at other nuclear and chemical facilities. As such, the potential hazards are well understood and lessons learned from earlier facilities are applied. Part of the preparatory work for hazard identification studies is to review safety and incident reports from similar operating facilities to ensure that credible events are considered at an early stage in the design. For the RPP-WTP, the operating histories of Sellafield's Vitrification Plants, Site Ion Exchange Plant, the Enhanced Actinide Removal Plant, the Savannah River Project, and the Hanford Site plants are reviewed to take account of their operating experience. In this way, lessons learned are incorporated into the	SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~ASME NQA-1-1989 Section 1~~ ~~*Organization* (including associated supplements)~~	Safety Criterion 7.0-4 is explicit in the requirement that the assignment and subdivision of responsibility for safety with the contractor's organization be kept well defined throughout the life of the facility. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. Standard 7(3)(ii)(B) identifies ASME-NQA-1-1989. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in

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	RPP-WTP design and plans for operation. One such example is ion exchange resin stability. An explosion occurred at the Hanford Z-Plant because of contact between an organic ion exchange resin and strong nitric acid (HRC 1976). Because the RPP-WTP uses both organic ion exchange resins and strong nitric acid within its processes, careful consideration is being given to design of ion exchange resin handling and storage for the RPP-WTP. Section 4.4.1, "Comparison to the Hazards Analysis Results of Other Facilities", of the Hazard Analysis Report (HAR) provides a discussion of the application of lessons learned at other facilities to the Facility process hazards analysis (PHA) and design. 6.1.2 Lines of Authority and Responsibility Clear and unambiguous lines of authority and responsibility are established throughout the Project through its design, construction, operation, and deactivation phases. The flowdown of ES&H responsibility and accountability starts with the General Manager/Project Manager during construction and the General Manager/Facility Manager during operation (which includes deactivation) and extends through the management and supervisory chain to each worker, irrespective of the type of work being performed. This flowdown is captured in policies and procedures, communicated to the workforce through orientation and training, reinforced by group and individual performance evaluations, and monitored and assessed by independent oversight provided by ES&H professionals. Stop-work authority also flows down from senior management to individual workers who are explicitly empowered to halt any activity in which they are engaged that is unsafe or potentially harmful to the environment.		the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. Hence use of ~~ASME NQA-1-1989 as the implementing standard for SC 7.0-4 is appropriate. The DOE QA rule and ASME NQA-1-1989~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work. The QAM provides the details of the QA Program. Policy Q-01.1 of the QAM details the assignments of the roles and responsibilities for project management and will be maintained throughout the project life. This requirement will ensure that safety criterion 7.0-4 remains implemented on the project.
7.1-1[Proposed] This safety criterion has been deleted.~~Safety management shall oversee the implementation of the risk management~~	6.1 Integration into Work Planning and Performance The Project safety management process protects the public, workers, and the environment through implementing work practices that never compromise safety for the sake of production or expediency. This is achieved by BNI by way of the following: 1) Conduct activities in an atmosphere of trust and confidence based on open, honest, and responsible communication 2) Encourage employee feedback 3) Use proven and effective approaches to risk identification and control	NA~~ASME NQA-1-1989 Section 1~~ ~~*Organization* (including associated supplements)~~	It is proposed to delete Safety Criterion 7.1-1 based on DOE approval of the removal of the Risk Management Plan, Section 9.3 of the SRD Volume II, approved by DOE evaluation letter 01-OSR-0311 dated 17 September 2001. ~~is explicit in the requirement that safety management oversee the~~

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~~program elements. A qualified person shall be assigned the overall responsibility for the development implementation, and integration of the risk management program elements. If responsibility for implementing individual requirements of the risk management program is assigned to other persons, the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.~~	4) Conduct business with integrity and mutual respect for employees and interfacing organizations 5) Apply a systematic approach to all activities that affect ES&H 6) Establish clear ownership and accountability 7) Define and reach agreement with the employees on the work to be accomplished by the facility operation and the expectation to accomplish the work in a safe manner 8) Promote teamwork through involvement of knowledgeable parties 9) Empower employees to effectively protect themselves, the public, and the environment 10) Allocate appropriate resources to support ES&H activities 11) Support continuous improvement of ES&H performance 12) Manage and conduct a consistent and project-wide integrated approach to ES&H for all activities 13) Encourage and promote sharing ES&H information and resources 14) Assignment of a qualified person for overall responsibility for the development, implementation, and integration of the safety management process. Application of the above work practices allows the BNI team to effectively implement BNI guiding principles for integrating safety management into work planning and performance efforts. These guiding principles include establishing line management responsibility for ES&H, establishing and making clear lines of authority, ensuring that personnel have the necessary qualifications to perform the work, providing effective allocation of resources, performing pre-work hazard assessments, establishing appropriate controls for hazards and hazardous situations, and establishing operational requirements. These work practices and principles are an integral part of the BNI team safety culture. They are formalized in Project policies, procedures, and instructions and are incorporated into all activities described in the following sections. The flowdown of these work practices and principles to subcontractors is discussed in Section 5.2, “Control of Subcontractors”.		~~implementation of the risk management program elements.~~ ~~Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. Standard 7(3)(ii)(B) identifies ASME NQA-1-1989. BNI has chosen ASME NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. Hence use of ASME NQA-1-1989 as the implementing standard for SC 7.1-1 is appropriate. The DOE QA rule and ASME NQA-1-1989 contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work. The QAM provides the details of the QA Program. Policy Q-01.1 of the QAM details the assignments of the roles and responsibilities for project management and will be maintained throughout the project life.~~ ~~Contract No. DE-AC27-01RV14136 Standard 1(c)(3) requires that the contractor develop WTP Risk Assessments that identify the~~

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			~~major risks to achieving the baseline and the Contractor's approach for managing those risks. A core risk team has been assigned to the development of these assessments per section 3.3 of the report. These WTP Risk Assessment Reports are being completed per the Risk Management Plan (RMP) for the WTP. The RMP provides a systematic process for managing technical and programmatic risks and conforms to the recommendations of *DOE Project Management Practice 8*.~~ ~~These requirements will ensure that safety criterion 7.1-1 remains implemented on the project. The currently referenced sections of the ISMP, while not an implementing standard do contain expansion of the integration into work planning and performance and will remain project authorization basis requirements.~~
7.1 -2 When selecting a subcontractor, information regarding the subcontract employer's safety performance and programs shall be obtained and evaluated. Subcontract employees shall be informed of	5.2 Control of Subcontractors BNI is responsible for ensuring that all subcontractors work as safely as the BNI employees. BNI's responsibilities include the following: 1) Informing the subcontractors of known fire, explosion, or toxic hazards relating to the subcontractor's work and the process 2) Explaining to the subcontractor the applicable provisions of the emergency plan 3) Developing and implementing safe work practices to control the entrance, presence, and exit of subcontractor employees, including their presence in areas of the process covered by the PSM standard 4) Periodically evaluating the performance of subcontractors in fulfilling their obligations as stated 5) Maintaining an illness and injury log relating to the subcontractor work in the process areas Each subcontractor's responsibilities include the following:	SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~ASME NQA-1-1989 Section 7~~ ~~*Control of Purchased Items and Services* (including associated supplements). The procurement of items and services shall be controlled to assure~~	Safety Criterion 7.1-2 is explicit in the requirements for control of subcontractors. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. Standard 7(3)(ii)(B) identifies ASME-NQA-1-1989. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual

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the known potential fire, explosion, or toxic release hazards related to the subcontractor's work and the process. The applicable provisions of the emergency plan shall be explained to the subcontractors. Safe work practices to control the entrance, presence, and exit of subcontract employers and employees in radioactive or hazardous process areas shall be developed and implemented. The performance of subcontract employers with regard to safety shall be periodically evaluated and a subcontract employee injury and illness log related to the subcontractor's	1) Ensuring that subcontractor employees are trained in the work practices necessary to safely perform their assignments 2) Ensuring that subcontractor employees are instructed in the known hazards of the process as related to their job assignments, and in the relevant provisions of the emergency management plan 3) Documenting that each subcontractor employee has received and understood the training required to work safely at the RPP-WTP 4) Ensuring that each subcontractor employee follow the safety rules of the RPP-WTP and the site safe work practices, and advise the contractor of any unique hazards presented or found during the course of the subcontractor's work. Project environment, safety, and health (ES&H) requirements are imposed on subcontractors in contracting documents. This includes commitments included in the SRD and ISMP. Subcontractors are required to appoint an ES&H representative who is the interface with the Project team on all ES&H matters. Before starting any work, ES&H personnel meet with the subcontractor's workers to apprise them of the job-specific ES&H requirements. In addition, oversight is provided of all subcontractor safety and compliance activities. The system employed on the Project to track subcontractor work includes procedures with detailed checklists and specific record keeping and reporting requirements. The key elements of this system are subcontractor pre-qualification, worker job-specific training, day-to-day monitoring, and regular reporting to the contractor. These elements are described in the paragraphs that follow. The QAP requires that subcontractors and suppliers providing services and items Important-to-Safety submit their quality plans to Project QA for review and approval. The QAP describes how the procurement of items and services is controlled to ensure conformance with specified requirements. Audits of suppliers and subcontractors are described in the QAP. Controls are established by the Project to ensure that purchased items and services conform to the procurement documents. These controls include provisions for source evaluation and selection, objective evidence of inspection at the subcontractor's source, examination of items or services upon delivery, and assessments. Verifications of subcontractors' and suppliers' activities during fabrication, inspection, testing, and shipment of materials, equipment, and components are planned and performed with the Quality Assurance organization participation to ensure conformance with the purchase order requirements. Subcontractors and suppliers develop procedures for the disposition of items, materials, and services that do not meet procurement requirements to ensure that incorrect or defective items, materials, and services are not used in the RPP-WTP and that reporting requirements are satisfied. BNI validates that approved suppliers can continue to provide acceptable items and services based on a documented evaluation of their past performance. **Pre-qualification**. Subcontracting procedures contain subcontract language to ensure that BNI	~~conformance with specified requirements.~~ ~~Such control shall provide for the following as appropriate: source evaluation and selection, evaluation of objective evidence of quality furnished by the Supplier, source inspection, audit, and examination of items or services upon delivery or completion.~~	(QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME NQA-1-1989 as the implementing standard for SC 7.1-2 is appropriate. The DOE QA rule and ASME NQA-1-1989~~ Section 7.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contains specific requirements for subcontractor safety performance. Contract No. DE-AC27-01RV14136 Standard 4(b)(2) requires that the contractor develop a purchasing system for DOE approval in accordance with section 1 Clause entitled, *Subcontracts* (Table C.5-1.1, Deliverable 4.3). Additionally Contract No. DE-AC27-01RV14136 Section H.22 describes the subcontractor ESQ&H requirements.

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work in process areas shall be maintained.	subcontractors understand their obligation to comply with the Project ES&H programs and procedures and all applicable federal, state, and local requirements. Subcontractors are also required to submit an extensive ES&H history form documenting their capability of meeting these obligations. Subcontractors are also required to submit their safety and health program for Project review. Before work is carried out, subcontractors are required to validate that their workers have current training for the work activities they are to perform. This training must be documented as quality assurance records. **Day-to-day monitoring**. The subcontractor's ES&H performance is measured against their contractual obligations and ES&H performance. This oversight is the responsibility of the project team, which includes ES&H professionals familiar with the subcontractor scope and the specific ES&H project requirements. Instructions for compliance oversight are specified in the BNI subcontracting procedures and policies. These procedures also contain guidance to initiate contract termination if a subcontractor is found to be in default of these contract obligations, including failure to respond to ES&H infractions. **Regular reporting**. Subcontractors maintain their own records of accidents and illnesses and are responsible for notifying BNI immediately of any lost work day injuries/illnesses, occupational fatalities, OSHA-recordable injuries, hazardous material or radiation exposure, or property damage in excess of $500 occurring in areas under BNI control. Subcontractors are also responsible for environmental compliance as defined by applicable procedures, regulations, and laws. These submittals are reviewed by ES&H professionals to give BNI an early warning of performance degradation and to allow BNI to take effective, preventative action when necessary. The above approaches are formalized in Project policies, procedures, and instructions. Appropriate training is also provided at all levels including employees, supervisors, and management. To ensure that BNI subcontractors are performing their work safely, both formal and informal safety reviews and audits are performed. Results of these evaluations are transmitted to both Project management and to the affected subcontractors.		
7.1-3 A framework shall be established for safety review organizations that are responsible for assuring the safety of the facility. The separation between the responsibilities of the safety review	1.3.13 Procedures Procedures are one tool by which compliance with requirements is ensured during the design, construction, operation, and deactivation of the project. All activities that may affect safety of the public and workers are performed in accordance with step-by-step instruction provided in procedures. The range of activities covered in procedures includes, but is not limited to: 1) Design control 2) Procurement activities 3) Monitoring contractors 4) Identification and resolution of nonconforming conditions 5) Operations and maintenance 6) Emergency plan implementing procedures There is a defined hierarchy of procedures commensurate with the philosophy used to developed the	SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~ASME NQA-1-1989 Section 1~~ ~~*Organization* (including associated supplements)~~	Safety Criterion 7.1-3 is explicit in the requirement that the framework be established for safety review organizations that are responsible for assuring the safety of the facility. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3) requires that the contractor develop the QA Program, which describes the approach for managing and controlling the project. Standard 7(3)(ii)(B) identifies ASME-NQA-1-1989. BNI has chosen

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organizations and those of the other organizations shall remain clear so that the safety review organizations retain their independence as safety authorities. Internal safety oversight should be conducted by qualified personnel to ensure that the safety standards are consistently met.	tailored levels of design classification and quality levels. For example, procedures supporting the implementation of Technical Safety Requirements that are credited for accident prevention or mitigation will have a greater safety significance than procedures supporting maintenance activities on other SSCs. Those procedures, at the highest level, are subject to increased rigor with respect to their development, review, implementation, and change. Increased rigor includes requirements for independent review and approval by qualified and experienced personnel or safety committees. Training emphasizes the importance of the hierarchy as well as the content of the procedures and the requirement to follow procedures to ensure safe and efficient activities. One category of procedures is the operating procedures. These procedures are developed during the design and construction phase, when more detailed design information is available. The design information, test data, and design requirements are incorporated into the operating procedures. The operating procedures address normal and off-normal facility conditions, process startup and shutdown, and emergency events. The development and control of the operating procedures are summarized in ISMP Section 5.6.1, "Procedure Development", and is addressed in ISAR Section 3.9, "Procedures". 3.16 Internal Safety Oversight Internal safety oversight for the Project involves several oversight functions to ensure safety of the public and workers and to preclude environmental degradation. These internal safety oversight functions include corporate safety assessments, management assessments, independent assessments and audits, safety committees, incident investigations, maintenance of the authorization basis, and the USQ process. In ISMP Section 5.4, "Compliance Audits", and Chapter 10.0, "Assessments", other facets of internal safety oversight are covered. Several administrative functions provide information on the adequacy of the oversight functions and also provide information used to define the scope of future internal safety oversight functions. This information includes: performance monitoring; performance indicators; lessons learned and industry experience; and feedback and trending. The staff possess the unique skills to perform internal safety oversight. Some of the skills applied are as follows: 1) Conducting performance-based assessments that emphasize work activity in progress 2) Reporting deficient conditions to line management 3) Following up on corrective actions to prevent a recurrence of the deficiency 4) Applying performance trending to determine existence of programmatic issues and plan for future oversight areas 5) Understanding the requirements of the Price Anderson Amendments Act and 10 CFR 820, "Procedural Rules for DOE Nuclear Activities" 6) Assisting line management to establish a positive safety culture 7) Incorporating applicable lessons learned from previous RPP-WTP incidents and industry experience at other DOE sites and the commercial power industry to the project oversight program		ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for SC 7.1-3 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work. Policy Q-01.1 of the QAM details the assignments of subdivision for safety responsibility and will be maintained throughout the project life. ~~These requirements will ensure that safety criterion 7.1-3 remains implemented on the project. The currently referenced sections of the ISMP, while not an implementing standard do contain expansion of procedures, the internal safety oversight and assessment requirements and will remain project authorization basis requirements.~~

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	8) Maintaining a continuing interaction with the RPP-WTP regulator on the status and direction of project oversight activities. Internal oversight may include participation of staff external to BNI. The external members are selected based on their experience and qualifications to provide different perspectives or expertise in specific functional areas. 10.0 Assessments Assessments of the Project verify that public and worker safety considerations are reflected in the design, procurement, construction, commissioning, operation, and deactivation of the facility. The role of safety committees in achieving these objectives is discussed in Integrated Safety Management Plan (ISMP) Section 3.16.1, "Safety Committees". Assessments in compliance with 10 CFR 830.120(c)(3)(i) and (c)(3)(ii) involve the following: 1) Management assessments. Managers assess their management processes so that problems that hinder the organization from achieving its objectives are identified and corrected. These assessments are discussed in Section 10.1, "Management Assessments". 2) Independent assessments. Independent assessments are performed to measure item and service quality, measure the adequacy of work performance, and promote improvement. These assessments are discussed in Section 10.2, "Independent Assessments". During the design and construction phase, assessments are directed at such activities as: 1) The development of regulatory documents 2) Performance of safety analysis 3) Qualification of personnel, training, and procedures as related to design and construction 4) Design control 5) Construction work packages 6) Worker safety 7) Fire protection 8) Equipment procurement. Assessments during operation and deactivation provide oversight of these same areas and extend to the following areas: 1) Radiation control 2) Unreviewed safety questions evaluations 3) Compliance with the authorization basis 4) Maintenance training and work performance 5) Hazardous waste management 6) Emergency exercises 7) Compliance to deactivation end point criteria 8) Fire protection.		

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7.3-1 The following quality assurance elements shall be applied using a graded approach: (1) Quality Assurance Program (2) Personnel Training and Qualification, (3) Quality Improvement, (4) Documents and Records, (5) Work Processes, (6) Design, (7) Procurement, (8) Inspection and Acceptance Testing, (9) Management Assessment, and (10) Independent Assessment.	1.3.11 Quality Levels The assignment of Quality Levels (QL) is the method by which the implementation of the graded quality approach discussed in 10 CFR 830.120, "Quality Assurance Requirements" is ensured. Designation of correct quality levels helps to ensure that the appropriate quality assurance requirements are applied to specific RPP-WTP SSCs. The quality levels of the Project quality assurance approach and their applications are described in the QAP.	24590-WTP-QAM-QA-01-001, Quality Assurance Manual, Section 1.3 – Graded Approach	Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Standard 7(e)(3)(iii) & (iv), ASME-NQA-1-1989 and DOE O 414.1A are identified. BNI has chosen 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) as the implementing standard for the QA Program. Use of the QAM as the implementing standard for SC 7.3-1 is appropriate. The QAM Section 1.3 provides the details of the application of the graded approach for the WTP Project, which will be proceduralized and implemented by the WTP project. BNI will apply the graded approach to all elements of the QA Program to comply with this safety criteria. ISMP Section 1.3.11 simply states the requirement for 'graded approach' per 10 CFR 830 Subpart A~~.120~~. Use of the QAM as the implementing standard meets this requirement. The QAM Section 1.3 provides the details of the application of the graded approach for the WTP Project.
7.3-8 Managers shall assess their management	10.0 Assessments **SAME AS ABOVE** 10.1 Management Assessments	24590-WTP-QAM-QA-01-001, Quality Assurance Manual, Policy 18.3 –	Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted

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processes. Problems that hinder the organization from achieving its objectives shall be identified and corrected.	Management assessments are conducted annually by the line manager of each RPP-WTP organization to measure the effectiveness of their activities in achieving public and worker safety. The assessments focus on the various functional programs for which managers have safety responsibility. The assessments cover, but are not limited to the following: 1) Interfaces among groups with safety roles 2) Use of safety performance indicators 3) Adequacy of resources 4) Staff training and qualification 5) Supervisory oversight and support. Management assessments involve the following: 1) Evaluating the implementation of applicable portions of the quality assurance program 2) Identifying barriers hindering the accomplishment of safety objectives, documenting response actions, and implementing corrective actions 3) Developing a plan for each management assessment that includes the schedule, scope, level of effort, and team qualifications 4) Issuing a final report with identification of problems and corrective actions 5) Evaluating the effectiveness of the corrective actions in preventing recurrences. Section 9 of the QAP addresses the purpose and conduct of management assessments and specific managers' responsibilities in the assessment process.	Management Assessments	in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Standard 7(3)(iii) & (iv), ASME-NQA-1-1989 and DOE O 414.1A are identified. BNI has chosen 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) as the implementing standard for the QA Program. Use of the QAM as the implementing standard for SC 7.3-8 is appropriate. The QAM provides the framework for results-oriented management system that focuses on performing work safely, while allowing the organization to become more efficient through process improvements. The requirements of SC 7.3-8 are required by the QA Program. The QAM, Policy Q-18.3 details the requirements for management assessments, which will be proceduralized and implemented by the WTP project. BNI will complete the necessary management assessments to comply with this safety criteria.
7.3-10 Compliance audits shall be performed at least every three years to verify that the procedures and practices developed to ensure nuclear and process safety are	5.4 Compliance Audits Compliance audits for the PSM program are conducted by BNI at least once every three years to verify that the procedures, practices, and maintenance activities developed to ensure nuclear and process safety are adequate and being followed. These compliance audits are performed by individuals knowledgeable of the process. The audits are often performed with the aid of a checklist. A report of the audit findings is developed in which corrective actions and their schedule for completion are provided. Additional detail on this program is provided in ISAR Section 3.6, "Audits and Assessments". 8.0 Document Control and Maintenance The quality assurance program (QAP) requirements for the Project records management system is provided in Section 4, "Documents and Records", of the QAP (BNFL 1998c). Documents are prepared, reviewed, approved, issued, and revised to prescribe processes, specify	24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM), Policy 18.1 – Independent Assessment (Audit)	Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Standard 7(3)(iii) & (iv), ASME-NQA-1-1989 and DOE O 414.1A are identified. BNI has chosen 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) as the implementing standard for the

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adequate and are being followed. The compliance audit shall be conducted by at least one person knowledgeable in the process. A report of the findings of the audit shall be developed. An appropriate response shall be determined and documented for each of the findings of the compliance audit, and it shall be documented when deficiencies have been corrected. Employers shall retain the two most recent compliance audit reports.	requirements, and establish design. Safety documents developed as a part of the safety management process controlled by the QAP include but are not limited to those identified in Table 8-1. The column "Records" lists the documents that address the items in the "Subject" column.		QA Program. Use of the QAMas the implementing standard for SC 7.3-10 is appropriate. The QAM Policy 18.1, *Independent Assessment(Audit)* provides the necessary guidance to complete the compliance audit depict in SC 7.3-10. BNI will complete the compliance audits necessary to comply with this safety criteria. The currently referenced section of the ISMP, while not an implementing standard does contain expansion of the requirement for compliance audits and will remain project authorization basis requirements.
9.0-2 The Contractor should request authorization for construction only after being satisfied by appropriate internal assessments that	9.2 Scheduling of Events for Regulatory Submittals This section addresses the scheduling of regulatory submittals required by DOE/RL-96-0003, *DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors* (DOE-RL 1996a) and the Safety Requirements Document (BNFL 1997d). Figure 9-1 provides the sequence of events for the following deliverables to DOE. 1) The construction authorization package, which will include the Preliminary Safety Analysis Report (PSAR). The PSAR will address Items 1-5, 7-15, 18, and 20 of DOE/RL-96-0003, Section 4.3.2, "Contractor Input", (DOE-RL 1996a). The remaining items will be provided separately from the PSAR.	Appendix ~~*,~~ G, Ad Hoc Implementing Standard for Safety Analysis Reports 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM), Policy 18.1 – Independent Assessment (Audit)	ABCN-~~-~~24590-01-00004, Revision 2 has identified a new SRD Volume II, Appendix ~~*,~~ G, *Ad Hoc Implementing Standard for Safety Analysis Report* for the WTP, that requires the PSAR to state that all major safety issues have been resolved prior to submittal and to identify and provide a schedule for resolution

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the main safety issues have been satisfactorily resolved and that the remainder are amenable to solution before operations are scheduled to begin.	2) The operating authorization package, which will include the Final Safety Analysis Report (FSAR). The FSAR will address Items 1-5, 7-9, 12, 15, 17, 18, 20, 21, and 23 of DOE/RL-96-0003, Section 4.4.2, "Contractor Input", (DOE-RL 1996a). The remaining items will be provided separately from the FSAR. 3) The submittal of the deactivation authorization request. This will include revision to the Integrated Safety Management Plan (ISMP) to provide additional detail on deactivation activities. The self-assessment documents identified in Item 4 of DOE/RL-96-0003, Section 4.5.2, "Contractor Input" are provided to the DOE within 90 days of the completion of the assessment. Revisions to the Quality Assurance Program will be submitted to the DOE with the standards approval package for construction, operation, and deactivation which is submitted fourteen weeks prior to the scheduled authorization request submittal.		of other safety issues. RL/REG-98-20, Revision 1, section 4.2.i requested that the contractor identify an adequate subordinate standard for internal safety assessments before submission of the pre-construction authorization SRD revision. BNI will complete the necessary internal safety assessments to comply with this safety criterion per 24590-WTP-QAM-QA-01-001, Quality Assurance Manual (QAM) , Policy 18.1 – Independent Assessment (Audit).

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ISMP versus ProposedAd Hoc Standard

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1.0-9 The RPP-WTP Contractor shall accept responsibility for the safety of the RPP-WTP.	1.0 Project Safety approach The RPP-WTP Contractor's safety approach is implemented with the recognition that the defined work for processing and immobilizing Hanford tank waste involves inherent radiological and chemical hazards from which hazardous situations may arise. The RPP-WTP Contractor is committed to integrating the development of safety criteria and design requirements, the hazard analysis and accident analysis process, and the facility design to minimize the risk associated with these hazards and hazardous situations. The RPP-WTP Contractor accepts responsibility for the safety of the RPP-WTP and for adequate protection of the health and safety of the public, worker safety, environmental protection, and compliance with applicable laws and regulations. This chapter of the Integrated Safety Management Plan (ISMP) provides an overview of the RPP-WTP design, construction, and commissioning (DC&C) Contractor (i.e., Bechtel National, Inc. [BNI]) safety approach developed for the River Protection Project – Waste Treatment Plant (RPP-WTP). The elements of this approach, through their evolutionary implementation in Part A of the project, form the bases for this ISMP. The ISMP is followed and will be further developed during Part B of the Project for detailed design, construction, operation, and deactivation of the facility. The Project safety approach is summarized in Section 1.1, "Introduction". The components of the safety approach are described in greater detail in Section 1.2, "Summary". The elements of the safety approach are described in Section 1.3, "Description of the Integrated Safety Management Plan". 1.1 Introduction The safety management practices outlined in the ISMP have been developed specifically for the Project. The development of these management practices was based on the experience of the Project team at other nuclear facilities in the areas of design, construction, and operation. These practices ensure implementation of the corporate policy that no activities are more important than the health and safety of its workers, contractors, the public, or protection of the environment. The ISMP documents the process by which laws, regulations, and standards applicable to the nuclear, radiological, and process safety aspects of the Project are incorporated into programs for facility design, construction, operation, and deactivation to ensure adequate safety of workers and the public and protection of the environment. A further role of the ISMP is to demonstrate how practices are in line with the WTP Contractor policies to ensure that the safety culture achieved at other nuclear chemical facilities can be successfully sustained through the different phases of the WTP. At this stage in the project, the ISMP is biased towards the design and construction phase, during which most of the processes described are developed.	**1.0 Project Integrated Safety Management Approach** The WTP Contractor's safety approach is implemented with the recognition that the defined work for processing and immobilizing Hanford tank waste involves inherent radiological and chemical hazards from which hazardous situations may arise. The WTP Contractor is committed to integrating the development of safety criteria and design requirements, the hazard analysis and accident analysis process, and the facility design to minimize the risk associated with these hazards and hazardous situations. The WTP Contractor accepts responsibility for the safety of the WTP and for adequate protection of the health and safety of the public, worker safety, environmental protection, and compliance with applicable laws and regulations. The safety approach for the Project is based on applying best industry practices and cost-effective processes that come from successful and safe operation in the commercial and DOE nuclear environment and the chemical process industry. The purpose of the safety approach is to achieve the following objectives. 1) Ensure an adequate level of safety at the facility for the workers and the public. 2) Comply with applicable laws and regulations. 3) Conform to top-level safety standards and principles stipulated by the U.S. Department of Energy (DOE/RL-96-0006, Revision 2, *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP Waste Treatment Plant Contractor*). See SRD Volume II, Appendix A for the detailed description of this process.

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	However, the principles of the ISMP for later stages of the facility life through operation and deactivation and how the design and construction phase will be integrated into these later stages is discussed. The ISMP also describes how the safety management practices will be followed and further developed during Part B of the Project. To accomplish its roles, the ISMP describes the following: 1) The facility defined work to process and immobilize Hanford Tank waste in a safe manner (ISMP Section 1.3.1, "Project Initiation") 2) The selection of a safe and proven technology (ISMP Section 3.7, "Proven Engineering Practices") 3) The development and use of the SRD (ISMP Section 1.3.3, "Safety Requirements Document") a) To establish the Safety Criteria by which the process hazard analysis (PHA) and accident analysis identify features required for worker and public safety b) To identify the design requirements that, when implemented, ensure that prevention and mitigation controls will perform their specified safety functions 4) The use of PHA to identify the full range of potential radiological and chemical hazards and hazardous situations (ISMP Section 1.3.4, "Process Hazards Analysis") 5) The accident analyses performed to identify engineered and administrative controls required for worker and public safety (ISMP Section 1.3.6, "Accident Analysis") 6) The iteration of the PHA, accident analyses, and design to ensure an adequate level of safety for the workers and the public (ISMP Sections 1.3.7, "Acceptable Level of Public Safety" and 1.3.8, "Acceptable Level of Worker Safety") 7) The development of the technical safety requirements, if required, that are based on: a) A process variable, design feature, or operating restriction that is an initial condition (i.e., the assumed facility state) for an accident analysis b) Structures, systems, and components that must function to maintain compliance with public and worker radiological and chemical exposure standards 8) The development of procedures and training to achieve and maintain the	

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	required administrative controls (ISMP Sections 1.3.12, "Training" and 1.3.13, "Procedures") 9) The development of an emergency preparedness program and implementing procedures (ISMP, Section 1.3.18, "Emergency Planning") 10) The assignment of design, construction, and operational roles and responsibilities and the use of assessments to ensure the necessary attributes of the ISMP are effectively accomplished (ISMP, Chapters 10.0, "Assessments", and 11.0, "Organizational Roles, Responsibilities, and Authorities") Chapter 1.0 of the ISMP presents the BNI safety approach. Chapters 2.0 through 11.0 are formatted to correspond to the attributes included in RL/REG-97-07, *Guidance for the Review of TWRS Privatization Contractor Integrated Safety Management Plan Submittal Package* (DOE-RL 1997). Throughout the ISMP, lists of items are numbered for the convenience of the reviewers in referring to individual items. The numbering is not an indication of the importance or sequence of the items. Chapter 12.0, "Definitions", contains the definitions of some of the terms, phrases, or documents that are found throughout the ISMP. When used unmodified in the ISMP, "worker" refers to the facility and collocated worker, both individually and collectively. Within this document, the *Safety Requirements Document* (SRD) (BNI 2001b and BNI 2001c), *Hazard Analysis Report* (HAR) (BNFL 1997b), *Quality Assurance Program* (QAP) (BNFL 1997a, BNFL 1998c), *Quality Assurance Manual* (QAM) (BNI 2001), and *Initial Safety Analysis Report* (ISAR) (BNI 2001d and 2001e), are cited using acronyms. Full reference information for these documents appears in Chapter 13.0, "References". 1.2 Summary The Project safety approach is implemented with the recognition that the defined work of processing and immobilizing Hanford tank waste involves inherent radiological and chemical hazards from which hazardous situations may arise. The Project is integrating the development of Safety Criteria, design requirements, the hazard analysis and accident analysis processes, and the facility design to minimize the risk associated with these hazards and hazardous situations. The elements of this approach, through their evolutionary implementation in Part A of the Project, form the bases for this ISMP. The safety approach for the Project is based on applying best industry practices and cost-effective processes that come from successful and safe	

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	operation in the commercial nuclear environment and the chemical process industry. The purpose of the safety approach is to achieve the following objectives. 1) Ensure an adequate level of safety at the facility for the workers and the public. 2) Comply with applicable laws and regulations. 3) Conform to top-level safety standards and principles stipulated by the U.S. Department of Energy (DOE-RL 1996b). A diagram of the Project safety approach is presented in Figure 1-1. The safety approach begins with the definition of the work to be performed and continues with the development of the conceptual process flow diagrams (PFD) and other facility design information required to accomplish the defined work. The PFDs and design development give consideration to the types of work to be accomplished, the hazards identified for similar facilities, and the methods by which these hazards were previously eliminated or controlled for similar facilities. This conceptual information is used to identify appropriate hazards-based standards and initiate the development of the SRD. The identification of hazards and hazardous situations helps to characterize the hazardous situations as those that may require prevention or mitigation. The identification and characterization of the hazards and hazardous situations establish a basis for describing approaches and measures to control the hazards. Safety Criteria are then developed that document the set of standards and requirements necessary to ensure implementation of the necessary hazard control strategies. These Safety Criteria are documented in the SRD and are based on applicable laws and regulations, the U.S. Department of Energy's (DOE) top-level safety requirements, and best industry practices. The SRD provides Safety Criteria to the PHA by which an initial assessment of the adequacy of the design is made. As accident prevention and mitigation safety features are identified in the PHA, the resulting facility design impacts are fed back to the SRD process, as required, for further development of more detailed Safety Criteria and design requirements to ensure all safety features provide their specified safety functions. As the PHA, PFDs, and facility design mature, accident analyses are performed to confirm judgements made during the PHA and to further characterize the accident scenarios to demonstrate compliance with radiological and chemical exposure standards for accidents. Additional protection for workers is identified by the PHA, the accident analyses, and the application, as appropriate, of Process Safety Management (PSM) required by 29 CFR 1910.110.	

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	Significant features of the Project safety approach are described as follows. 1) The approach continually integrates hazard identification, SRD development, design development, and accident analysis throughout the facility design, construction, operation, and deactivation phases. 2) The approach uses the best industry practices that include PHA, a rigorous design process based on a set of credible accidents and a defense-in-depth philosophy, and verification of the level of facility safety through accident analysis and validation of requirements implementation. 3) The PHA identifies and evaluates the significance of potentially hazardous situations. For each identified event, a defense-in-depth approach applies a level of protection in terms of engineered features and administrative controls that is commensurate with the severity of the unmitigated event. The hazards evaluation techniques satisfy the requirements of a hazards analysis process established by the American Institute of Chemical Engineers (AIChE 1992). 4) A conservative approach to accident consequence analysis is used in terms of input assumptions, boundary conditions, and modeling techniques. As the process and facility design mature, the modeling is refined to eliminate unnecessary conservatism. This strategy is consistent with risk-based approaches that allow the use of uncertainty analysis to better identify the impact of assumptions and state of knowledge on results from the safety analyses. 5) The safety approach documents how the identification of the engineered and administrative controls credited for public and worker safety and facility Safety Criteria is accomplished. This approach to safety analysis is similar to that described in draft NUREG 1513, *Integrated Safety Analysis Guidance Document,* (NRC 1994) published by the U.S. Nuclear Regulatory Commission (NRC). 1.3 Description of the Integrated Safety Management Plan Each of the elements of the safety approach are described in detail in the following sections.	
	11.1 Design and Construction Phase Safety-related roles, responsibilities, and authorities for the DC&C phase of the operation, as assigned to individuals and organizations within BNI (the DC&C Contractor), are discussed below.	**6.0 Organization Roles, Responsibilities, and Authorities** The responsibility for the design, construction, commissioning, operation, and deactivation of the River Protection Project-Waste Treatment Plant lies with the designated WTP contractors throughout these various life-cycle phases of the

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	Project Manager The Project Manager safety-related roles, responsibilities, and authorities include: 1) Responsibility for RPP-WTP safety 2) Defining safety policy, objectives, and interfaces 3) Assigning roles and responsibilities for safety-related activities 4) Setting performance expectations 5) Developing management assessment policies 6) Signatory on permit applications for construction of the Facility 7) Serving as a member of the Executive Committee 8) Ensuring implementation of the Quality Assurance Program (QAP) Deputy Project Manager The Deputy Project Manager safety-related roles, responsibilities, and authorities include: 1) Ensuring that the RPP-WTP is designed, constructed, tested, commissioned, operated, and maintained in a safe, reliable, and efficient manner in accordance with policies and all applicable laws, regulations, authorization bases, and technical requirements 2) Integrating nuclear and industrial safety, quality, and environmental protection into all work 3) Managing the design transition, facility and process design, construction, acceptance testing, and commissioning 4) Integrating the Area Project Managers and functional managers 5) Creating an atmosphere in the workplace where reporting and resolution of conditions adverse to quality is encouraged at all levels 6) Stopping activities within his area of responsibility, which are not accomplished in compliance with applicable authorization bases and/or regulatory requirements Area Project Managers The safety-related roles, responsibilities, and authorities of the Area Project Managers, in their respective areas of responsibility, include: 1) Managing design and construction effort, in their respective area of responsibility. 2) Implementing management assessment policies, in their respective area of responsibility. 3) Implementing the contractor requirements of 10 CFR 820, "Procedural	Facility. These contractors to the Department of Energy, Office of River Protection will include the Design, Construction, and Commissioning (DC&C) contractor, the Operations contractor, and the Deactivation contractor. These contractor's roles, responsibilities, and authorities include defining and implementing nuclear, radiological, and process safety standards and the related safety bases for protection of the WTP occupational workers and the public. These WTP contractors are solely responsible for defining and implementing DOE-approved safety standards and communicating those safety standards as requirements to all WTP Project team members and subcontractors who conduct work on the Project. While the Project team members manage subcontractors, the WTP contractors retain responsibility for oversight of team members and subcontractors performance and for overall project safety. The commitment inherent in this structure is that line management retains the responsibility for development and implementation of the safety basis. Although some specific roles may be reassigned within the organization, line management's responsibility for safety is invariant. Overall Project roles, responsibilities, and authorities are provided in 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*. Project roles, responsibilities, and authorities related to radiological, nuclear, and process safety for the DC&C contractor shall be clearly defined. Envisioned roles, responsibilities, and authorities related to radiological, nuclear, and process safety for the Operations contractor shall be clearly defined.

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	Rules for DOE Nuclear Activities", in their respective area of responsibility. 4) Ensuring the development and implementation of the incident reporting program, in their respective area of responsibility. 5) Approving final designs of Safety Design Class and Safety Design Significant features, in their respective area of respons ibility. 6) Serving as principal interface with DOE on technical issues, in their respective area of responsibility. 7) Developing and managing the readiness review program to support commissioning, in their respective area of responsibility. <u>Engineering Manager</u> The Engineer Manager oversees the engineering design activities that are assigned to the DC&C contractor. The safety-related roles, responsibilities, and authorities of the Engineering Manager include: 1) Updating the treatment process, civil, architectur al, structural, electrical, and mechanical design criteria 2) Completing the civil, structural, support system, and facility designs including the incorporation of regulatory and quality commitments 3) Preparing specifications for procurement of pre-purchased equipment 4) Incorporating regulatory and quality commitments into the design, procurement, fabrication, inspection, and testing of systems and components 5) Designing measures to facilitate performance of Technical Safety Requirement (TSR) surveillances 6) Designing features to implement the design requirements of 10 CFR 835 Occupational Radiation Protection including features for ensuring personnel exposure during operation is as low as reasonably achievable (ALARA) 7) Selecting materials for fabrication and construction; defining methods for corrosion control; and specifying welding procedures, requirements for nondestructive examination, and codes and standards 8) Designing fire prevention, detection, and suppression features in compliance with state and federal requirements 9) Incorporating deactivation and decommissioning features into the facility design 10) Evaluating proposed changes to civil, structural, support system, and facility designs 11) Updating the process design specifications, process descriptions, basis of design documents 12) Completing the process design including the incorporation of regulatory and quality commitments 13) Developing and implementing the configuration management (CM) program to control the safety and design bases 14) Obtaining documentation defining the physical configuration of the facility	

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	and forwarding this documentation to the Project Administration and Controls Organization 15) Developing and implementing of CM program database <u>Construction Manager</u> The safety-related roles, responsibilities, and authorities of the Construction Manager include: 1) Implementing procedures and training to enhance construction safety 2) Providing input to the configuration management program including as-built information 3) Supporting the incident reporting system for construction-related incidents 4) Developing procedures for the handling of hazardous material during construction, including packaging, labeling, storage, and shipping practices 5) The packaging and manifesting of dangerous waste arising from construction activities 6) Interfacing with subcontractors on process safety management and ES&H matters 7) Incorporating regulatory and quality commitments of SSCs into the construction 8) Implementing the construction testing program to verify that SSCs meet acceptance testing requirements 9) <u>Environment, Safety & Health (ES&H) Manager</u> The safety-related roles, responsibilities, and authorities of the ES&H Manager include: 1) Implementing internal safety and oversight functions 2) Developing safety basis and safety-related performance measures 3) Implementing the process safety management program 4) Developing and implementing the regulatory commitment tracking system, and the incident reporting program 5) Interfacing with regulators, stakeholders, and Hanford Site contractors on ES&H matters 6) Evaluating proposed changes that involve implementation of nuclear, radiological, and process safety and environmental matters 7) Implementing the fire protection program 8) Coordinating cooperative agreements with outside agencies such as fire, police, ambulance, and medical services 9) Developing and managing the ES&H portions of the readiness review program to support commissioning 10) Serving as a member of the Project Safety Committee, supporting	

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	independent safety review in the ES&H area of responsibility. 11) Updating the process hazards analysis The ES&H Manager also oversees activities related to radiological, nuclear, and process safety and environment protection. These activities include the following: 1) Identifying and evaluating new laws and regulations that may affect the Project safety programs 2) Preparing the Limited Construction Authorization (LCA) request 3) Interfacing with the regulators during onsite inspections 4) Updating the Hazard Analysis Report (HAR), Safety Requirements Document (SRD), and Integrated Safety Management Plan (ISMP) 5) Preparing the Preliminary Safety Analysis Report (PSAR) and Final Safety Analysis Report (FSAR) 6) Environmental reporting 7) Identifying requirements for worker and public safety, security, and environmental regulatory compliance 8) Preparing the environmental characterization and monitoring plans 9) Preparing permit applications and plans as required for state and federal environmental regulations 10) Monitoring environmental compliance during construction 11) Developing and implementing the Environmental Radiation Protection Program <u>Quality Assurance Manager</u> The safety-related roles, responsibilities, and authorities of the QA Manager the following: 1) Developing the Quality Assurance Program (QAP) 2) Assessing and auditing project activities to verify compliance with the QAP and other requirements and to determine the effectiveness of the QAP 3) Providing support for the development of qualification and training programs to ensure that required capabilities are achieved and maintained by project personnel 4) Reviewing project documents (e.g., design documents, nuclear and process safety deliverables, work plans, and source evaluation plans) to verify inclusion of appropriate QAP requirements 5) Recommending and exercising work stoppage or controls over further processing in response to quality concerns 6) Assessing and auditing vendor and subcontractor activities to verify compliance with the QAP and other requirements and to determine the effectiveness of the QAP 7) Serving as a member of the Project Safety Committee, supporting	

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	independent safety review in the QA area of responsibility The QA Manager has the authority and responsibility to stop project work when the work, if allowed to continue, would result in activities or documents being in noncompliance with stated QAP requirements. The QA Manager is responsible for determining when appropriate corrective or preventative actions have been taken and for lifting the stop work order to allow work to proceed. <u>Operations Manager</u> The safety-related roles, responsibilities, and authorities of the Operations Manager include: 1) Developing a program for operations procedure preparation, review, verification, validation, approval, change, deviation, and internal control 2) Writing and maintaining operating procedures including post-deactivation activities 3) Performing administrative responsibilities including maintaining a qualified staff and ensuring effective employee performance 4) Performing radioactive commissioning testing to demonstrate compliance with the acceptance criteria and documenting the results to acceptance criteria. 5) Serving as the chairperson for the Project Safety Committee 6) Developing and managing the readiness review program to support commissioning <u>Research and Technology Manager</u> The safety-related roles, responsibilities, and authorities of the Research and Technology (R&T) Manager include: 1) Serving as a member of the Project Safety Committee, supporting independent safety review in the R&T area of responsibility. <u>Process Technology Manager</u> The safety-related roles, responsibilities, and authorities of the Process Technology Manager include: 1) Ensuring that technologies are developed and demonstrated 2) Evaluating the completed process design and proposed changes to the design 3) Identifying commissioning tests to be performed and their acceptance criteria	

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	4) Incorporating regulatory and quality commitments into procurement, fabrication, inspection, and testing of process components 5) Performing systematic design reviews to determine readiness to authorize fabrication and construction of structures , systems, and components (SSC) 6) Implementing design considerations for deactivation and decommissioning <u>Commissioning Manager</u> The commissioning organization manages the commissioning program. The safety -related roles, responsibilities, and authorities of the Commissioning Manager include: 1) Developing the objectives and scope for the startup program 2) Developing and evaluating proposed changes to the commissioning program 3) Verifying and validating operation and maintenance procedures during performance of tes ting 4) Providing information from the startup program to the operations, training, and procedures groups, and maintenance for verification and validation of operating administrative controls <u>Business/Projects Control Manager</u> The safety-related roles, responsibilities, and authorities of the Business/Projects Control Manager include: 1) Implementing the Employee Concerns Program 2) Implementing an employee feedback program 3) Controlling the facility policy manual (containing the Project Manager safety policy) and all procedures 4) Developing and maintaining the records management program (See Table 8-1) 11.2 Operations Phase The envisioned safety-related roles, responsibilities, and authorities for the Operations phase of the operation, as assigned to individuals and organizations within the Operations Contract, are discussed below. <u>Facility Manager</u> Responsibilities and roles of the Facility Manager include the following:	

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	1) Ensuring the development and implementation of facility controls to protect the health and safety of the public, and workers and to protect the environment from hazardous situations associated with the chemical and radiological hazards of the facility 2) Ensuring that operational activities are properly staffed and controlled 3) Managing operation of the facility to obtain the defined work activity while maintaining the authorization basis for the facility 4) Approving Facility activities, including modifications to Safety Design Class and Safety Design Significant SSCs 5) Ensuring that work is performed in conformance with procedures, policies, and safety requirements 6) Implementing the contractor requirements of 10 CFR 820, "Procedural Rules for DOE Nuclear Activities" 7) Serving as the Emergency Director during events categorized as emergencies 8) Assigning roles and responsibilities for activities related to safety including operations, performance improvements, safety improvements, and deactivation of the facility <u>Operations Manager</u> Roles of the Operations Manager include the following: 1) Developing a program for procedure preparation, review, verification, validation, approval, change, deviation, and internal control 2) Writing and maintaining operating procedures including post-deactivation activities 3) Performing administrative responsibilities including maintaining a qualified staff and ensuring effective employee performance 4) Performing radioactive startup testing to demonstrate compliance with the acceptance criteria and documenting the results to acceptance criteria 5) Managing daily facility operation to obtain the define work activity while maintaining compliance to the TSRs 7) Performing TSR surveillances assigned to operations and supporting those TSR surveillances assigned to the Maintenance Organization 8) Scheduling and managing process system outage activities 9) Initiating and managing deactivation 10) Obtaining an understanding of the features and limitations of the facility SSCs to facilitate radioactive startup testing, facility operation, and the development of procedures and training 11) Developing and implementing the operating staff training program 12) Writing and evaluating proposed changes to administrative procedures related to facility operation	

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	13) Ensuring operation of support systems (e.g., electrical, instrument air, and steam) 14) Performing analysis of feed material, product, and process chemicals 15) Developing procedures for hazardous material handling, packaging, labeling, storage, and shipping practices 16) The packaging and manifesting of dangerous waste 17) Evaluating proposed changes to the radioactive startup program <u>Environment, Safety, & Health Manager</u> The ES&H Manager is a member of the PSC. In addition, for the operating project the ES&H organization has the following roles: 1) Developing the emergency plan and the emergency plan implementing procedures 2) Managing emergency drills and exercises 3) Modifying plans and procedures to address internal safety and oversight functions for the deactivation phase 4) Developing deactivation safety performance measures, modification of plans and procedures, and confirmation the facility meets the safe storage criteria on completion of deactivation 5) Managing occupational health and safety 6) Obtaining monitoring, sampling, and record keeping information on facility discharges 7) Maintaining state and federal environmental permits 8) Maintaining the environmental database 9) Keeping environmental regulators informed on current status, concerns, and new data 10) Identifying critical aspects of facility deactivation that would affect environmental regulatory compliance Developing the USQ identification and evaluation process 11) Developing TSR surveillance testing and evaluation program 12) Monitoring compliance to the authorization basis 13) Updating authorization basis documentation including the FSAR 14) Directing incident investigations including reporting, root cause analyses, identification of corrective actions, and tracking of effectiveness of corrective actions and applying lessons learned from relevant facilities 15) Developing a process for evaluating deficiencies to nuclear safety requirements subject to 10 CFR 820, “Procedural Rules for DOE Nuclear Activities” 16) Preparing a deactivation safety analysis report 17) Developing and implementing the Radiation Protection Program for operations that is compliant with 10 CFR 835, “Occupational Radiation Protection” 18) Performing radiation and contamination surveys and maintaining personnel exposure records	

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	19) Informing management of conditions that could lead to exceeding radiation limits established for radiation areas or exceeding administrative limits for personnel radiological exposure 20) Monitoring deactivation activities to ensure personnel exposure meets as low as reasonably achievable (ALARA) objectives <u>Quality Assurance Manager</u> The QA Manager is a member of the PSC. Roles of the QA Organization include the following: 1) Establishing a Quality Assurance Program for operations 2) Performing independent assessments and program compliance audits 3) Reviewing the project quality procedures and documenting compliance with applicable QAP requirements 4) Modifying and implementing quality assurance plans and procedures for the for deactivation process 5) Verifying implementation of corrective action measures and determining that the solutions for quality problems are effective The QA Manager has the authority and responsibility to stop project work when the work, if allowed to continue, would result in activities or documents being in noncompliance with stated requirements. The QA Manager is responsible for determining when appropriate corrective or preventative actions have been taken and for lifting the stop work order to allow work to proceed. <u>Engineering Manager</u> The Engineering Manager a member of the PSC. Roles of the Engineering organization include the following: 1) Evaluating startup test results and comparing the results to acceptance criteria 2) Developing and evaluating proposed design improvements and changes to engineered features 3) Supporting resolution of production problems 4) Developing the surveillance and maintenance criteria for facility operations 5) Identifying measures that minimize hazards associated with treating and storing radioactive waste, and for the safe handling of fissionable materials 6) Performing a job hazard analysis and participating with ES&H to update HAR 7) Updating the process hazards analysis (PHA) to support permit and authorization basis updates 8) Preparing and implementing a deactivation management plan that	

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	includes: • updating the HAR • defining surveillance and maintenance criteria for deactivation and safe storage • developing facility modifications to facilitate performance of surveillance tests • implementing measures that minimize hazards associated with treating and storing radioactive materials <u>Maintenance Manager</u> The Maintenance Manager oversees the activities of the Maintenance organization. Roles of the Maintenance organization include: 1) Defining and implementing a maintenance program that includes preventive, predictive, and corrective maintenance practices and incorporates vendor-recommended maintenance activities and equipment history 2) Performing TSR surveillances assigned to maintenance and supporting those TSR surveillances assigned to operations 3) Implementing facility modifications 4) Developing and modifying operating and maintenance instructions for post-deactivation operational equipment 5) Writing maintenance procedures 6) Collecting and processing baseline data for system and component performance monitoring and maintenance planning <u>Startup Manager</u> The Startup organization manages the startup testing program. Additional roles of the Startup Manager include the following: 1) Evaluating proposed changes to the startup program 2) Verifying and validating operation and maintenance procedures during performance of testing 3) Providing information from the startup program to the operations, training, and procedures groups, and maintenance for verification and validation of operating administrative controls <u>Configuration Management Manager</u> The Configuration Management Manager oversees the activities of the Configuration Management organization. Roles of the Configuration Management organization include the following:	

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	1) Continued implementation of the operational configuration management program 2) Maintaining the facility operating history to facilitate deactivation of the facility <u>Administration and Controls Manager</u> The Administration and Controls Manager continues those activities started by the DC&C contractor Business and Project Controls Organization	
7.0-4 The assignment and subdivision of responsibility for safety within the contractor's organization shall be kept well defined throughout the life of the facility.	3.2 Safety Responsibilities BNI recognizes its corporate responsibility for safety during the design, construction, and commissioning (DC&C) phase of the project. Safety responsibilities are assigned to and by the Project Manager. The DC&C responsibilities are assigned to functional areas as shown in ISMP Tables 9-1 through 9-3. The roles assigned to organizations are provided in ISMP Chapter 11.0, "Organization Roles, Responsibilities, and Authorities". By these assignments, facility safety becomes a facility-wide responsibility with safety responsibilities identified for each functional area. In addition, by these assignments, assurance is provided that the roles identified in the Safety Analysis Reports are carried out. The Facility design is based on the design and operational experience gained at other nuclear and chemical facilities. As such, the potential hazards are well understood and lessons learned from earlier facilities are applied. Part of the preparatory work for hazard identification studies is to review safety and incident reports from similar operating facilities to ensure that credible events are considered at an early stage in the design. For the RPP-WTP, the operating histories of Sellafield's Vitrification Plants, Site Ion Exchange Plant, the Enhanced Actinide Removal Plant, the Savannah River Project, and the Hanford Site plants are reviewed to take account of their operating experience. In this way, lessons learned are incorporated into the RPP-WTP design and plans for operation. One such example is ion exchange resin stability. An explosion occurred at the Hanford Z-Plant because of contact between an organic ion exchange resin and strong nitric acid (HRC 1976). Because the RPP-WTP uses both organic ion exchange resins and strong nitric acid within its processes, careful consideration is being given to design of ion exchange resin handling and storage for the RPP-WTP. Section 4.4.1, "Comparison to the Hazards Analysis Results of Other Facilities", of the Hazard Analysis Report (HAR) provides a discussion of the application of lessons learned at other facilities to the Facility process hazards analysis (PHA) and design. 6.1.2 Lines of Authority and Responsibility	**2.0 Safety Responsibilities** Safety responsibilities are assigned to and by the Project Manager. The roles assigned to organizations are provided in section 6.0, "Organization Roles, Responsibilities, and Authorities". The overall, general roles, responsibilities, and authorities assigned to WTP Project organization managers are provided in 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual* for the Design, Construction, and Commissioning (DC&C) phase of the Project. In addition, by these assignments, assurance is provided that the roles identified in the Safety Analysis Reports are carried out. The Facility design is based on the design and operational experience gained at other nuclear and chemical facilities. As such, the potential hazards are well understood and lessons learned from earlier facilities are applied.

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	Clear and unambiguous lines of authority and responsibility are established throughout the Project through its design, construction, operation, and deactivation phases. The flowdown of ES&H responsibility and accountability starts with the General Manager/Project Manager during construction and the General Manager/Facility Manager during operation (which includes deactivation) and extends through the management and supervisory chain to each worker, irrespective of the type of work being performed. This flowdown is captured in policies and procedures, communicated to the workforce through orientation and training, reinforced by group and individual performance evaluations, and monitored and assessed by independent oversight provided by ES&H professionals. Stop-work authority also flows down from senior management to individual workers who are explicitly empowered to halt any activity in which they are engaged that is unsafe or potentially harmful to the environment.	
7.1-1 Safety management shall oversee the implementation of the risk management program elements. A qualified person shall be assigned the overall responsibility for the development, implementation, and integration of the risk management program elements. If responsibility for implementing individual requirements of the risk management program is	6.1 Integration into Work Planning and Performance The Project safety management process protects the public, workers, and the environment through implementing work practices that never compromise safety for the sake of production or expediency. This is achieved by BNI by way of the following: 1) Conduct activities in an atmosphere of trust and confidence based on open, honest, and responsible communication 2) Encourage employee feedback 3) Use proven and effective approaches to risk identification and control 4) Conduct business with integrity and mutual respect for employees and interfacing organizations 5) Apply a systematic approach to all activities that affect ES&H 6) Establish clear ownership and accountability 7) Define and reach agreement with the employees on the work to be accomplished by the facility operation and the expectation to accomplish the work in a safe manner 8) Promote teamwork through involvement of knowledgeable parties 9) Empower employees to effectively protect themselves, the public, and the environment 10) Allocate appropriate resources to support ES&H activities 11) Support continuous improvement of ES&H performance 12) Manage and conduct a consistent and project-wide integrated approach to	**5.0 Integrated Safety Management** This chapter describes how safety management is integrated into work planning and performance. Lines of responsibility and authority for environment, safety, and health (ES&H) issues are described. Personnel qualification, resource allocation, and hazard assessments, controls, and operating conditions are discussed. **5.1 Integration Into Work Planning and Performance** The Project safety management process protects the public, workers, and the environment through implementing work practices that never compromise safety for the sake of production or expediency. This is achieved by way of the following: 1) Conduct activities in an atmosphere of trust and confidence based on open, honest, and responsible communication 2) Encourage employee feedback 3) Use proven and effective approaches to risk identification and control 4) Conduct business with integrity and mutual respect for employees and interfacing organizations 5) Apply a systematic approach to all activities that affect ES&H 6) Establish clear ownership and accountability 7) Define and reach agreement with the employees on the work to be accomplished by the facility operation and the expectation to accomplish the work in a safe manner 8) Promote teamwork through involvement of knowledgeable parties 9) Empower employees to effectively protect themselves, the public, and the environment 10) Allocate appropriate resources to support ES&H activities

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assigned to other persons, the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.	ES&H for all activities 13) Encourage and promote sharing ES&H information and resources 14) Assignment of a qualified person for overall responsibility for the development, implementation, and integration of the safety management process. Application of the above work practices allows the BNI team to effectively implement BNI guiding principles for integrating safety management into work planning and performance efforts. These guiding principles include establishing line management responsibility for ES&H, establishing and making clear lines of authority, ensuring that personnel have the necessary qualifications to perform the work, providing effective allocation of resources, performing pre-work hazard assessments, establishing appropriate controls for hazards and hazardous situations, and establishing operational requirements. These work practices and principles are an integral part of the BNI team safety culture. They are formalized in Project policies, procedures, and instructions and are incorporated into all activities described in the following sections. The flowdown of these work practices and principles to subcontractors is discussed in Section 5.2, "Control of Subcontractors".	11) Support continuous improvement of ES&H performance 12) Manage and conduct a consistent and project-wide integrated approach to ES&H for all activities 13) Encourage and promote sharing ES&H information and resources 14) Assignment of a qualified person for overall responsibility for the development, implementation, and integration of the safety management process. Application of the above work practices allows the WTP team to effectively implement WTP Contractor guiding principles for integrating safety management into work planning and performance efforts. These guiding principles include establishing line management responsibility for ES&H, establishing and making clear lines of authority, ensuring that personnel have the necessary qualifications to perform the work, providing effective allocation of resources, performing pre-work hazard assessments, establishing appropriate controls for hazards and hazardous situations, and establishing operational requirements. These work practices and principles are an integral part of the WTP team safety culture. They are formalized in Project policies, procedures, and instructions and are incorporated into all activities described in the following sections. The flowdown of these work practices, and principles to subcontractors is discussed in Section 6.3 "Control of Subcontractors". **5.2 Line Management Responsibility for ES&H** Line management responsibility and accountability for ES&H is one of the key principles of the WTP Contractor approach to ES&H integration. To ensure maximum effectiveness in ES&H performance, employees are informed of their responsibility and accountability for creating and maintaining a safe and healthy workplace and protecting the environment. In addition, ES&H individuals do not assume roles that reside with the line organization. This creates an environment where accountability is clearly focused and ES&H priorities are never sacrificed to another line mission or objective. **5.3 Lines of Authority and Responsibility** Clear and unambiguous lines of authority and responsibility are established throughout the Project through its design, construction, operation, and deactivation phases. The flowdown of ES&H responsibility and accountability starts with the Project Manager and extends through the management and supervisory chain to each worker, irrespective of the type of work being performed. This flowdown is captured in policies and procedures,

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		communicated to the workforce through orientation and training, reinforced by group and individual performance evaluations, and monitored and assessed by independent oversight provided by ES&H professionals. Stop-work authority also flows down from senior management to individual workers who are explicitly empowered to halt any activity in which they are engaged that is unsafe or potentially harmful to the environment.
7.1 -2 When selecting a subcontractor, information regarding the subcontract employer's safety performance and programs shall be obtained and evaluated. Subcontract employees shall be informed of the known potential fire, explosion, or toxic release hazards related to the subcontractor's work and the process. The applicable provisions of the emergency plan shall be explained to the subcontractors. Safe work practices to control the entrance,	5.2 Control of Subcontractors BNI is responsible for ensuring that all subcontractors work as safely as the BNI employees. BNI's responsibilities include the following: 1) Informing the subcontractors of known fire, explosion, or toxic hazards relating to the subcontractor's work and the process 2) Explaining to the subcontractor the applicable provisions of the emergency plan 3) Developing and implementing safe work practices to control the entrance, presence, and exit of subcontractor employees, including their presence in areas of the process covered by the PSM standard 4) Periodically evaluating the performance of subcontractors in fulfilling their obligations as stated 5) Maintaining an illness and injury log relating to the subcontractor work in the process areas Each subcontractor's responsibilities include the following: 1) Ensuring that subcontractor employees are trained in the work practices necessary to safely perform their assignments 2) Ensuring that subcontractor employees are instructed in the known hazards of the process as related to their job assignments, and in the relevant provisions of the emergency management plan 3) Documenting that each subcontractor employee has received and understood the training required to work safely at the RPP-WTP 4) Ensuring that each subcontractor employee follow the safety rules of the RPP-WTP and the site safe work practices, and advise the contractor of any unique hazards presented or found during the course of the subcontractor's work. Project environment, safety, and health (ES&H) requirements are imposed on subcontractors in contracting documents. This includes commitments included	**6.1 Control of Subcontractors** The WTP Contractor is responsible for ensuring that all subcontractors work as safely as the WTP employees. The WTP Contractor's responsibilities include the following: 1) Informing the subcontractors of known fire, explosion, or toxic hazards relating to the subcontractor's work and the process 2) Explaining to the subcontractor the applicable provisions of the emergency plan 3) Developing and implementing safe work practices to control the entrance, presence, and exit of subcontractor employees, including their presence in areas of the process covered by the PSM standard 4) Periodically evaluating the performance of subcontractors in fulfilling their obligations as stated 5) Maintaining an illness and injury log relating to the subcontractor work in the process areas Each subcontractor's responsibilities include the following: 1) Ensuring that subcontractor employees are trained in the work practices necessary to safely perform their assignments 2) Ensuring that subcontractor employees are instructed in the known hazards of the process as related to their job assignments, and in the relevant provisions of the emergency management plan 3) Documenting that each subcontractor employee has received and understood the training required to work safely at the WTP 4) Ensuring that each subcontractor employee follow the safety rules of the WTP and the site safe work practices, and advise the contractor of any unique hazards presented or found during the course of the subcontractor's work

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presence, and exit of subcontract employers and employees in radioactive or hazardous process areas shall be developed and implemented. The performance of subcontract employers with regard to safety shall be periodically evaluated and a subcontract employee injury and illness log related to the subcontractor's work in process areas shall be maintained.	in the SRD and ISMP. Subcontractors are required to appoint an ES&H representative who is the interface with the Project team on all ES&H matters. Before starting any work, ES&H personnel meet with the subcontractor's workers to apprise them of the job-specific ES&H requirements. In addition, oversight is provided of all subcontractor safety and compliance activities. The system employed on the Project to track subcontractor work includes procedures with detailed checklists and specific record keeping and reporting requirements. The key elements of this system are subcontractor pre-qualification, worker job-specific training, day-to-day monitoring, and regular reporting to the contractor. These elements are described in the paragraphs that follow. The QAP requires that subcontractors and suppliers providing services and items Important-to-Safety submit their quality plans to Project QA for review and approval. The QAP describes how the procurement of items and services is controlled to ensure conformance with specified requirements. Audits of suppliers and subcontractors are described in the QAP. Controls are established by the Project to ensure that purchased items and services conform to the procurement documents. These controls include provisions for source evaluation and selection, objective evidence of inspection at the subcontractor's source, examination of items or services upon delivery, and assessments. Verifications of subcontractors' and suppliers' activities during fabrication, inspection, testing, and shipment of materials, equipment, and components are planned and performed with the Quality Assurance organization participation to ensure conformance with the purchase order requirements. Subcontractors and suppliers develop procedures for the disposition of items, materials, and services that do not meet procurement requirements to ensure that incorrect or defective items, materials, and services are not used in the RPP-WTP and that reporting requirements are satisfied. BNI validates that approved suppliers can continue to provide acceptable items and services based on a documented evaluation of their past performance. **Pre-qualification**. Subcontracting procedures contain subcontract language to ensure that BNI subcontractors understand their obligation to comply with the Project ES&H programs and procedures and all applicable federal, state, and local requirements. Subcontractors are also required to submit an extensive ES&H history form documenting their capability of meeting these obligations. Subcontractors are also required to submit their safety and health program for	Project environment, safety, and health (ES&H) requirements are imposed on subcontractors in contracting documents. Subcontractors are required to appoint an ES&H representative who is the interface with the Project team on all ES&H matters. To ensure that WTP subcontractors are performing their work safely, both formal and informal safety reviews and assessments are performed. Results of these evaluations are transmitted to both Project management and to the affected subcontractors.

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	Project review. Before work is carried out, subcontractors are required to validate that their workers have current training for the work activities they are to perform. This training must be documented as quality assurance records. **Day-to-day monitoring**. The subcontractor's ES&H performance is measured against their contractual obligations and ES&H performance. This oversight is the responsibility of the project team, which includes ES&H professionals familiar with the subcontractor scope and the specific ES&H project requirements. Instructions for compliance oversight are specified in the BNI subcontracting procedures and policies. These procedures also contain guidance to initiate contract termination if a subcontractor is found to be in default of these contract obligations, including failure to respond to ES&H infractions. **Regular reporting**. Subcontractors maintain their own records of accidents and illnesses and are responsible for notifying BNI immediately of any lost work day injuries/illnesses, occupational fatalities, OSHA-recordable injuries, hazardous material or radiation exposure, or property damage in excess of $500 occurring in areas under BNI control. Subcontractors are also responsible for environmental compliance as defined by applicable procedures, regulations, and laws. These submittals are reviewed by ES&H professionals to give BNI an early warning of performance degradation and to allow BNI to take effective, preventative action when necessary. The above approaches are formalized in Project policies, procedures, and instructions. Appropriate training is also provided at all levels including employees, supervisors, and management. To ensure that BNI subcontractors are performing their work safely, both formal and informal safety reviews and audits are performed. Results of these evaluations are transmitted to both Project management and to the affected subcontractors.	
7.1-3 A framework shall be established for safety review organizations that are responsible for assuring the safety of the facility. The separation between the	1.3.13 Procedures Procedures are one tool by which compliance with requirements is ensured during the design, construction, operation, and deactivation of the project. All activities that may affect safety of the public and workers are performed in accordance with step-by-step instruction provided in procedures. The range of activities covered in procedures includes, but is not limited to: 1) Design control 2) Procurement activities 3) Monitoring contractors 4) Identification and resolution of nonconforming conditions 5) Operations and maintenance 6) Emergency plan implementing procedures	Procedures are one tool by which compliance with requirements is ensured during the design, construction, commissioning, operation, and deactivation of the project. All activities that may affect safety of the public and workers are performed in accordance with step-by-step instruction provided in procedures. The range of activities covered in procedures includes, but is not limited to: 1) Design control 2) Procurement activities 3) Construction activities 4) Monitoring contractors 5) Identification and resolution of nonconforming conditions 6) Operations and maintenance 7) Emergency plan implementing procedures

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responsibilities of the safety review organizations and those of the other organizations shall remain clear so that the safety review organizations retain their independence as safety authorities. Internal safety oversight should be conducted by qualified personnel to ensure that the safety standards are consistently met.	There is a defined hierarchy of procedures commensurate with the philosophy used to developed the tailored levels of design classification and quality levels. For example, procedures supporting the implementation of Technical Safety Requirements that are credited for accident prevention or mitigation will have a greater safety significance than procedures supporting maintenance activities on other SSCs. Those procedures, at the highest level, are subject to increased rigor with respect to their development, review, implementation, and change. Increased rigor includes requirements for independent review and approval by qualified and experienced personnel or safety committees. Training emphasizes the importance of the hierarchy as well as the content of the procedures and the requirement to follow procedures to ensure safe and efficient activities. One category of procedures is the operating procedures. These procedures are developed during the design and construction phase, when more detailed design information is available. The design information, test data, and design requirements are incorporated into the operating procedures. The operating procedures address normal and off-normal facility conditions, process startup and shutdown, and emergency events. The development and control of the operating procedures are summarized in ISMP Section 5.6.1, "Procedure Development", and is addressed in ISAR Section 3.9, "Procedures". 3.16 Internal Safety Oversight Internal safety oversight for the Project involves several oversight functions to ensure safety of the public and workers and to preclude environmental degradation. These internal safety oversight functions include corporate safety assessments, management assessments, independent assessments and audits, safety committees, incident investigations, maintenance of the authorization basis, and the USQ process. In ISMP Section 5.4, "Compliance Audits", and Chapter 10.0, "Assessments", other facets of internal safety oversight are covered. Several administrative functions provide information on the adequacy of the oversight functions and also provide information used to define the scope of future internal safety oversight functions. This information includes: performance monitoring; performance indicators; lessons learned and industry experience; and feedback and trending. The staff possess the unique skills to perform internal safety oversight. Some of the skills applied are as follows: 1) Conducting performance-based assessments that emphasize work activity in progress 2) Reporting deficient conditions to line management 3) Following up on corrective actions to prevent a recurrence of the	**4.0 Internal Safety Oversight** Internal safety oversight for the Project involves several oversight functions to ensure safety of the public and workers and to preclude environmental degradation. These internal safety oversight functions include corporate safety assessments, management assessments, independent assessments and audits, safety committees, incident investigations, maintenance of the authorization basis, and the USQ process. Assessments of the Project verify that public and worker safety considerations are reflected in the design, procurement, construction, and commissioning of the facility. Assessments are covered in 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*. Several administrative functions provide information on the adequacy of the oversight functions and also provide information used to define the scope of future internal safety oversight functions. This information includes: performance monitoring; performance indicators; lessons learned and industry experience; and feedback and trending. The following activities are part of internal safety oversight: 1) Conducting performance-based assessments that emphasize work activity in progress 2) Reporting deficient conditions to line management 3) Following up on corrective actions to prevent a recurrence of the deficiency 4) Applying performance trending to determine existence of programmatic

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	deficiency 4) Applying performance trending to determine existence of programmatic issues and plan for future oversight areas 5) Understanding the requirements of the Price Anderson Amendments Act and 10 CFR 820, "Procedural Rules for DOE Nuclear Activities" 6) Assisting line management to establish a positive safety culture 7) Incorporating applicable lessons learned from previous RPP-WTP incidents and industry experience at other DOE sites and the commercial power industry to the project oversight program 8) Maintaining a continuing interaction with the RPP-WTP regulator on the status and direction of project oversight activities. Internal oversight may include participation of staff external to BNI. The external members are selected based on their experience and qualifications to provide different perspectives or expertise in specific functional areas. 10.0 Assessments Assessments of the Project verify that public and worker safety considerations are reflected in the design, procurement, construction, commissioning, operation, and deactivation of the facility. The role of safety committees in achieving these objectives is discussed in Integrated Safety Management Plan (ISMP) Section 3.16.1, "Safety Committees". Assessments in compliance with 10 CFR 830.120(c)(3)(i) and (c)(3)(ii) involve the following: 1) Management assessments. Managers assess their management processes so that problems that hinder the organization from achieving its objectives are identified and corrected. These assessments are discussed in Section 10.1, "Management Assessments". 2) Independent assessments. Independent assessments are performed to measure item and service quality, measure the adequacy of work performance, and promote improvement. These assessments are discussed in Section 10.2, "Independent Assessments". During the design and construction phase, assessments are directed at such activities as: 1) The development of regulatory documents 2) Performance of safety analysis 3) Qualification of personnel, training, and procedures as related to design	issues and plan for future oversight areas 5) Understanding the requirements of the Price Anderson Amendments Act and 10 CFR 820, "Procedural Rules for DOE Nuclear Activities" 6) Assisting line management to establish a positive safety culture 7) Incorporating applicable lessons learned from previous WTP incidents and industry experience at other DOE sites and the commercial power industry to the project oversight program 8) Maintaining a continuing interaction with the WTP regulator on the status and direction of project oversight activities. Internal oversight may include participation of staff external to the WTP Contractor. Members are selected based on their experience and qualifications to provide different perspectives or expertise in specific functional areas. **It is not proposed to repeat the information about assessment in the new "proposed" ad hoc implementing standard. The topic (Management Assessments and Independent Assessments) of this section of the ISMP is covered by Safety Criteria 7.3-8 & 7.3-9. BNI has chosen the Quality Assurance Manual (QAM), Policy 18.3 – Management Assessment and ASME NQA-1-1989, Section 18 – Audits as the implementing standard to meet these requirements.**

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	and construction 4) Design control 5) Construction work packages 6) Worker safety 7) Fire protection 8) Equipment procurement. Assessments during operation and deactivation provide oversight of these same areas and extend to the following areas: 1) Radiation control 2) Unreviewed safety questions evaluations 3) Compliance with the authorization basis 4) Maintenance training and work performance 5) Hazardous waste management 6) Emergency exercises 7) Compliance to deactivation end point criteria 8) Fire protection.	
9.0-4 Material that is part of the authorization basis shall be established, documented, and submitted to the DOE for evaluation and in support of decisions and regulatory oversight. The material shall be maintained current with respect to changes made to the facility design and administrative controls and in	**3.3.1 Content of the Authorization Basis** The authorization basis for RPP-WTP includes the documentation discussed in the following sections. This documentation includes that information submitted in connection with a request for Standards Approval, a request for Construction Authorization, or a request for Operations Authorization as described in DOE/RL-96-0003, *DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors*, and any other information submitted by BNI in connection with these requests (DOE-RL 1996a). Amendments to this information may be in the form of revisions to the previously submitted documents, or new information that supplements previously submitted information. The authorization basis begins at the Standards Approval regulatory action and continues throughout the design, constructions, operation, and deactivation of the RPP-WTP. The following Sections 3.3.1.1 through 3.3.1.8 delineate the elements of the authorization basis. **3.3.2 Control of the Authorization Basis** The authorization basis for RPP-WTP is considered as an element of the technical baseline for the facility. Changes to the technical baseline are managed by a configuration management program. For further information concerning configuration management see ISMP Sections 1.3.16 and 5.3, "Configuration Management". **3.3.3 Changes to Safety Documentation**	**3.0 Authorization Basis** In this section, the content, control, and update of the authorization basis are discussed. The authorization basis is 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 related to radiological, nuclear, and process safety. **3.1 Content of the Authorization Basis** The authorization basis for WTP includes the DOE-approved documentation. This documentation includes that information submitted in connection with a request for Standards Approval, a request for Construction Authorization, or a request for Operations Authorization as described in DOE/RL-96-0003, Revision 2, *DOE Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant*, and any other information submitted by the WTP Contractor in connection with these requests. Amendments to this information may be in the form of revisions to the previously submitted documents, or new information that supplements previously submitted information. The authorization basis begins at the Standards Approval regulatory action and continues throughout the design, construction, commissioning, operation, and deactivation of the WTP. Other documents generated by the regulator or the WTP Contractor may become part of the authorization basis for the Project. This includes

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the light of significantly new safety information.	Changes to the authorization basis include changes to the facility design and administrative controls (e.g., procedures, programs, plans, or management processes) that are described in the authorization basis or are relied on to ensure conformance to the authorization basis. Changes to the authorization basis are managed by a configuration management program discussed in ISMP Sections 1.3.16 and 5.3, "Configuration Management". As described in these sections, the change management program includes the use of qualified personnel, procedures developed and approved under the Project procedure process, and implementation under the approved QAP. By 10 CFR 830.120(b)(3), a contractor may, at any time, make changes to the approved QAP so long as the QAP, as changed, will continue to satisfy the requirements of 10 CFR 830.120. For the Project the commitment has been made that changes to a previously approved QAP will be submitted to the DOE for review and approval 30 days prior to the implementation of the subject changes. Annual updates to the QAP must identify the changes, the pages affected, the reason for the changes, and the basis for concluding that the revised QAP continues to satisfy the requirements of 10 CFR 830.120. These annual updates are also subject to the 30-day prior review by the DOE. As allowed by 10 CFR 835.101(l) BNI may make changes to the approved RPP so long as the change does not decrease the effectiveness of the RPP and the RPP, as changed, continues to meet the requirements of 10 CFR 835. Proposed changes that decrease the effectiveness of the RPP are not implemented without submittal to and approval by DOE. Updates to the RPP are required if a change or addition is made to the RPP. Updates of the RPP are considered approved 180 days after submittal unless rejected by the regulator. In accordance with *DOE Position on Contractor Initiated Changes to the Authorization Basis*, RL/REG-97-13 (DOE-RL 2000), BNI may make changes to the facility or administrative controls if a review of the Authorization Basis is performed and either: a) The review demonstrates that a proposed change is consistent with the existing Authorization Basis, or b) The Authorization Basis is revised prior to the implementation of the proposed change.	correspondence concerning the safety aspects of the facility design, construction, operation, and plans for deactivation. **3.2 Control of the Authorization Basis** The AB documents for WTP are considered configured items under Configuration Management. Changes to AB documents are managed by a configuration management program. **3.3 Changes to the Authorization Basis** Changes to the authorization basis include changes to the facility design and administrative controls (e.g., procedures, programs, plans, or management processes) that are described in the authorization basis or are relied on to ensure conformance to the authorization basis. Changes to the authorization basis are managed by a configuration management program using the Project procedure for AB maintenance. All changes to the authorization basis will be in accordance with *Office of Safety Regulation Position on Contractor-Initiated Changes to the Authorization Basis* (RL/REG-97-13).

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9.1-6 All responsibilities concerning the facility as identified in the approved SAR shall be carried out.	**3.2 Safety Responsibilities** BNI recognizes its corporate responsibility for safety during the design, construction, and commissioning (DC&C) phase of the project. Safety responsibilities are assigned to and by the Project Manager. The DC&C responsibilities are assigned to functional areas as shown in ISMP Tables 9-1 through 9-3. The roles assigned to organizations are provided in ISMP Chapter 11.0, "Organization Roles, Responsibilities, and Authorities". By these assignments, facility safety becomes a facility-wide responsibility with safety responsibilities identified for each functional area. In addition, by these assignments, assurance is provided that the roles identified in the Safety Analysis Reports are carried out. The Facility design is based on the design and operational experience gained at other nuclear and chemical facilities. As such, the potential hazards are well understood and lessons learned from earlier facilities are applied. Part of the preparatory work for hazard identification studies is to review safety and incident reports from similar operating facilities to ensure that credible events are considered at an early stage in the design. For the RPP-WTP, the operating histories of Sellafield's Vitrification Plants, Site Ion Exchange Plant, the Enhanced Actinide Removal Plant, the Savannah River Project, and the Hanford Site plants are reviewed to take account of their operating experience. In this way, lessons learned are incorporated into the RPP-WTP design and plans for operation. One such example is ion exchange resin stability. An explosion occurred at the Hanford Z-Plant because of contact between an organic ion exchange resin and strong nitric acid (HRC 1976). Because the RPP-WTP uses both organic ion exchange resins and strong nitric acid within its processes, careful consideration is being given to design of ion exchange resin handling and storage for the RPP-WTP. Section 4.4.1, "Comparison to the Hazards Analysis Results of Other Facilities", of the Hazard Analysis Report (HAR) provides a discussion of the application of lessons learned at other facilities to the Facility process hazards analysis (PHA) and design.	**2.0 Safety Responsibilities** Safety responsibilities are assigned to and by the Project Manager. The roles assigned to organizations are provided in section 6.0, "Organization Roles, Responsibilities, and Authorities". The overall, general roles, responsibilities, and authorities assigned to WTP Project organization managers are provided in 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual* for the Design, Construction, and Commissioning (DC&C) phase of the Project. In addition, by these assignments, assurance is provided that the roles identified in the Safety Analysis Reports are carried out. The Facility design is based on the design and operational experience gained at other nuclear and chemical facilities. As such, the potential hazards are well understood and lessons learned from earlier facilities are applied.

Attachment 2

Authorization Basis Change Notice
24590-WTP-ABCN-ESH-02-021, Revision 2

Authorization Basis Change Notice

ABCN Number 24590-WTP-ABCN-ESH-01-021 Revision ~~1~~2

ABCN Title Selection of Implementing Standard for Documentation and Submittals

I. ABCN Review and Approval Signatures

A. ABCN Preparation

Preparer:	Ken Gibson		
	Print/Type Name	*Signature*	*Date*
Reviewer:	Rodger Dickey		
	Print/Type Name	*Signature*	*Date*

B. Required Reviewers

Review Required? *For each person checked Yes, that signature block must be completed.*

Review Required?				
☒	ES&H Manager	Fred Beranek		
		Print/Type Name	*Signature*	*Date*
☒	QA Manager	George Shell		
		Print/Type Name	*Signature*	*Date*
☒	PSC Chair	Bill Poulson		
		Print/Type Name	*Signature*	*Date*
☐~~☐~~	~~Operations~~ Manager			
		Print/Type Name	*Signature*	*Date*
☐	Engineering Manager			
		Print/Type Name	*Signature*	*Date*
☐	~~Pretreatment APM~~			
		Print/Type Name	*Signature*	*Date*
☐	LAW APM			
		Print/Type Name	*Signature*	*Date*
☐	HLW APM			
		Print/Type Name	*Signature*	*Date*
☐	BOF APM			
		Print/Type Name	*Signature*	*Date*
☐	Construction Manager			
		Print/Type Name	*Signature*	*Date*
☐	Business/Project Controls Manager			
		Print/Type Name	*Signature*	*Date*
☐	~~ALARA PSC Subcommittee Chair~~			
		Print/Type Name	*Signature*	*Date*
☒	PMT Chair	Dennis Klein		
		Print/Type Name	*Signature*	*Date*

Authorization Basis Change Notice

ABCN Number 24590-WTP-ABCN-ESH-01-021 Revision ~~1~~2

ABCN Title Selection of Implementing Standard for Documentation and Submittals

C. ABCN Approval

WTP Project Manager Ron Naventi

Print/Type Name *Signature* *Date*

II. Description of the Proposed Change to the Authorization Basis

D. Affected AB Documents:

Title	Document Number	Revision
Safety Requirements Document, Volume II	24590-WTP-SRD-ESH-01-001-02	~~0~~1

Decision to Deviate ☐ Yes ☒ No

If yes, DTD Number _____ Deficiency Report Number _____

Initiating Document Number Contract No. DE-AC27-01RV14136 Revision _____

E. Describe the proposed changes to the Authorization Basis Documents:

1. For SRD Safety Criterion 9.0-1 re-write as follows:

   Air and liquid effluent samples and monitoring data required by state and federal regulations and permits shall be collected. The monitoring and sampling data shall include the quantity of each of the principal radionuclides in excess of background released to unrestricted areas in liquid and gaseous effluents during the previous year of operation. Appropriate data and analyses shall be submitted to the appropriate Hanford Site contractor in a timely manner and include relevant site-specific information, including the locations of members of the public subject to the greatest potential exposures, the population distribution subject to exposures from RPP-WTP activities, and exposure pathways germane to the site. This data shall be used to prepare the mandatory state and federal environmental reports using approved EPA computer codes.

   This change is on SRD Volume II, page 9-1, Revision ~~0~~1.

2. For SRD Safety Criterion 9.0-1 replace the implementing standard (of ISMP Section 9.2, *Scheduling of Events for Regulatory Submittals)* with "None" and add Regulatory Basis WAC 246-247, *Radiation Protection – Air Emissions, Location: Part 080 (2) & (* 3). This change is on SRD Volume II, page 9-1, Revision ~~0~~1.

3. For SRD Safety Criterion~~a~~ 9.0-4 ~~and 9.1-7~~ replace the implementing standard (of ISMP, Section 3.3.1, *Content of the Authorization Basis*, ISMP Section 3.3.2, *Control of the Authorization Basis*, *and* ISMP Section 3.3.3, *Changes to Safety Documentation* ~~and ISMP Chapter 9.0, *Scheduling of Safety Related Activities*~~) with proposed SRD Volume II, Appendix ~~*~~ G - *Ad Hoc Standard for Safety Analysis Reports* and new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach*. This change is on SRD Volume II, page~~s~~ 9-2 ~~and 9-5~~, ~~all~~ Revision ~~0.~~1

4. For SRD Safety Criterion 9.1-4 change "3 months" to "6 months" in the first sentence of the safety criterion and replace the implementing standard (of ISMP Section 3.3.3, *Changes to Safety Documentation*) with DOE Guide DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, Section 4.1-3 – Annual DSA Updates (830.202), as tailored in SRD Volume II, Appendix C. This change is on SRD Volume II, page 9-4, Revision ~~0~~1.

5. For SRD Safety Criteria 9.1-5 replace the implementing standard (of ISMP Chapter 8.0, *Document Control and Maintenance)* with 24590-WTP-QAM-QA-01-001~~ASME NQA-1-1989~~, *Quality Assurance* *Manual*~~*Program Requirements for Nuclear Facilities*, Section 3S-1, 7 – Documentation and Records (including associated supplements) and Section 17 – Quality Assurance Records (including associated supplements)~~Policy Q-06.1 – Document Control and Policy Q-17.1 – Quality Assurance Records. This change is on SRD Volume II, page 9-4, Revision ~~0~~1.

E. Describe the proposed changes to the Authorization Basis Documents:

6. For SRD Safety Criterion~~a~~ 9.1-6 replace the implementing standard (of ISMP 3.2, *Safety Responsibilities)* with new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach* ~~ASME NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities,* Section 1 – Organization, (including associated supplements).~~ This change is on SRD Volume II, page 9-5, Revision ~~0~~1.

7. For SRD Safety Criterion 9.1-7 replace the implementing standard (of ISMP Chapter 9.0, *Scheduling of Safety Related Activities)* with SRD Volume II, Appendix G - *Ad Hoc Standard for Safety Analysis Reports.* This change is on SRD Volume II, page 9-5, Revision 1.

See Attachment 1 of this ABCN for the specific proposed changes.

The text of DOE Guides not included in the Contract No. DE-AC-27-01RV14136, may be used in WTP Project documents. This text may be cited verbatim or may be interpreted for project specific purposes. These guides are not intended to be adopted by the Project or to be implemented in their entirety. Implementation of this ABCN does not cause an impact to Project design or programs.

F. List associated ABCNs and AB documents, if any:

ISMP (24590-WTP-ISMP-ESH-01-001). Even though the ISAR Section 3.1, *Configuration Management* and ISAR Section 4.9, *Administrative Control of the Integrated Safety Assessment* are identified in the ISMP Section 5.6.2, the reference as stated is to provide guidance.

ABCN-24590-01-00004 Revision 2, *Identification of Format and Content for Safety Analysis Reports* proposes to use SRD Volume II, Appendix ~~*~~ G - *Ad Hoc Implementing Standard for Safety Analysis Reports*.

ABCN 24590-WTP-ABCN-ESH-01-007, Revision 2, *Selection of Implementing Standard for Management and Organization.*

G. Explain why the change is needed:

SRD Safety Criteria 9.0-1, 9.0-4 and 9.1-4 through 9.1-7 designate ISMP Section 3.2, 3.3.1, 3.3.2, 3.3.3, Chapter 8.0, and Chapter 9.0 as the implementing standards for the documentation and submittals and specific requirements associated with Safety Analysis Reports (SARs). The WTP SRD provides these requirements for the WTP Contractor to establish and implement. The transition of the WTP Project from a privatization to a DOE owned, Contractor operated approach, as well as the ongoing initiative to identify appropriate, non-ISMP implementing standards for SRD safety criteria, is the reason for this proposed change. That is, rather than citing ISMP sections related to Documentation and Submittals, a more definitive implementing standard is proposed.

An Integrated Safety Management (ISM) team was convened to determine if these sections should remain or if another standard should be selected. The ISM Team could not identify any single appropriate implementing standard for Safety Criteria 9.0-1 and 9.1-4 through 9.1-7. The ISM Team determined that the following should be proposed:

- For Safety Criterion 9.0-1 the ISM Team proposed a re-write of the safety criterion to reflect the current contract requirements as stated in Contract No. DE-AC-01RV14136, Statement of Work, Section C6, Standard 7, item (e)(4), Environmental Protection. "None" is proposed as the implementing standard.
- For Safety Criterion 9.0-4 ~~and 9.1-7~~ the ISM Team selected SRD Volume II, Appendix ~~*,~~ G, *Ad Hoc Implementing Standard for Safety Analysis Reports* and new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach* as the new implementing standards, since this standard was proposed by ABCN-24590-01-00004, Revision 2 for use in developing the safety analysis report for the WTP Project and ABCN 24590-WTP-ABCN-ESH-01-007, Revision 2 for management and organization safety criteria respectively.
- For Safety Criterion 9.1-4 the ISM Team proposed to change "3 months" to "6 months" in the first sentence of

ABCN Number 24590-WTP-ABCN-ESH-01-021 Revision ~~1~~2

ABCN Title Selection of Implementing Standard for Documentation and Submittals

G. Explain why the change is needed:

the safety criterion and selected DOE Guide DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, as tailored in SRD Volume II, Appendix C., Section 4.1-3 – Annual DSA Updates (830.202) as the new implementing standard as this standard provides guidance for the annual review and update of Final Safety Analysis Report.

- For Safety Criterion 9.1-5 the ISM Team selected the Quality Assurance Manual, Policy Q06-1-Documentation Control and Q17-1- Quality Assurance Records~~ASME-NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*, Section 3S-1, 7 – Documentation and Records (including associated supplements) and Section 17 – Quality Assurance Records (including associated supplements)~~ as the implementing standard, since the WTP Project has adopted the QAM~~ASME-NQA-1-1989 as an implementing standard~~ for developing the Quality Assurance Program.
- For Safety Criterion 9.1-6 the ISM Team selected new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach* ~~ASME-NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*, Section 1 – Organization, (including associated supplements)~~ as the implementing standard~~, since the WTP Project has adopted ASME-NQA-1-1989 as an implementing standard for developing the Quality Assurance Program~~.
- For Safety Criterion 9.1-7 the ISM Team selected new ad hoc standard, SRD Volume II, Appendix G, *Ad Hoc Implementing Standard for Safety Analysis Reports* as the new implementing standards, since this standard was proposed by ABCN-24590-01-00004, Revision 2 for use in developing the safety analysis report for the WTP Project

H. List the implementation activities and the projected completion dates:

Activity	**Date**
Inform DOE that AB has been revised and provide updated hard copy and electronic version of AB changes to DOE	30 days or less after DOE approval
Distribute controlled copy of revised pages	30 days after DOE approval

Revise the following implementing documents:

Documents	**Describe extent of revisions**	**Date**
1 NA		
2		

Describe other activities:	**Date**
1 NA	
2	

III. Evaluation of the Proposed Change

I. Is DOE prior approval required?

1 Does the revision involve the deletion or modification of a standard previously identified or established in the SRD? **Yes** ☒ **No** ☐

Explain

This proposed change will re-write the Safety Criterion 9.0-1 and replace the implementing standards selected for Safety Criteria 9.0-1, 9.0-4 and 9.1-4 through 9.1-7.

2 Does the revision result in the reduction in commitment currently described in the AB? **Yes** ☒ **No** ☐

Explain

The selected implementing standards for Safety Criteria 9.0-1, 9.0-4, and 9.1-4 through 9.1-7, None~~ASME-NQA-1-1989~~, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach*, DOE Guide DOE G 421.1-2, 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual* and the SRD Volume II, Appendix ~~*~~ G - *Ad Hoc Implementing Standard for Safety Analysis Reports*, comply with top-level principles, applicable laws and regulations, and the Contract, and provides adequate safety. Safety Criterion 9.0-1 needs to be re-written to reflect the actual requirements of the current Contract to supply environmental data to the appropriate Hanford Site contractor for incorporation into mandatory State and Federal environmental reports. This change does not propose to reduce any AB commitments. As such, the new safety criterion will not result in a reduction in commitment. Safety Criterion 9.1-4 needs to be revised to reflect the requirement for the FSAR to reflect all changes implemented up to 6 months prior to filing of the updated FSAR to be in line with the current implementation guide for developing FSARs to meet Subpart B of 10 CFR 830. This change does propose to reduce the current commitment to include changes implemented 3 months prior to filing of the updated FSAR.. This 6 month requirement has been brought forward from DOE Order 5480.23 (9.c) as guidance in DOE G 421.1-2, Section 4.1.3.

3 Does the revision result in a reduction in the effectiveness of any procedure, program, plan, or management process described in the AB? **Yes** ☐ **No** ☒

Explain

The proposed change in the selected implementing standards brings the Project in line with the programmatic requirements as detailed in Safety Criteria 9.0-1, 9.0-4, and 9.1-4 through 9.1-7. The change in the selected standards do not reduce the programmatic requirements contained in the Contract or the Authorization Basis. The current SRD and ISMP requirements are unchanged and remain. See Attachment 3, *SRD Proposed Changes Summary/Safety Evaluation*. The requirements for programmatic processes are not deleted and retain the current level of effectiveness.

J. Complete the safety evaluation by describing how the revision to the AB:

1 will continue to comply with all applicable laws and regulations, conform to top-level safety standards, and provide adequate safety

The proposed changes to the SRD Safety Criteria 9.0-1, 9.0-4, and 9.1-4 through 9.1-7 do not affect the safety criteria or the SRD or ISMP approach to provide adequate safety for documentation and submittals and the development and control of safety analysis reports. These SRD safety criteria continue to cite the same top-level safety standard, i.e., RL\REG-96-0006. See Attachment 2, *Identification of Implementing Standards for the WTP Project Documentation and Submittals.*

2 will continue to conform to the original submittal requirements associated with the AB documents being revised

The proposed SRD changes continue to reflect the original submittal requirements for documentation and submittals and the development and control of safety analysis reports. See Attachment 2, *Identification of Implementing Standards for the WTP Project Documentation and Submittals.*

3 will not result in inconsistencies with other commitments and descriptions contained in the AB or an authorization agreement

The proposed updates to the SRD were reviewed against the set of existing WTP Project AB documents, as well as the program, plans, and procedures that implement the AB, and were found to present no inconsistency with other commitments and descriptions contained in the overall AB. See Attachment 2, *Identification of Implementing Standards for the WTP Project Documentation and Submittals*.

K. Justification of the Proposed Change

Provide a justification that demonstrates that the proposed change is safe

The regulatory bases for the subject Safety Criteria are listed in DOE/RL-96-0006, items 4.1.3.1. Attachment 2 contains a discussion of these Safety Principles and a summary of the justification that identifying "None" for Safety Criterion 9.0-1; DOE Guide DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, as tailored in SRD Volume II, Appendix C~~.~~ for Safety Criterion 9.1-4; 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*~~*ASME-NQA-1-1989, Quality Assurance Program Requirements for Nuclear Facilitie*~~s for Safety Criteria 9.1-5~~ and 9.1-6~~; and SRD Volume II, Appendix ~~*,~~ G, *Ad Hoc Implementing Standard for Safety Analysis Report* *and* new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach* for Safety Criteria 9.0-4, 9.1-6 and 9.1-7 does not adversely impact the environment, conforms to applicable laws, regulations, the Contract, Top-Level Standards, and does not conflict with other parts of the Authorization Basis. Attachment 2 provides the basis/rationale for replacing the associated SRD safety criteria implementing codes and standards citation of ISMP Sections and Chapters with "None", "DOE Guide DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, Section 4.1.3", "*24590-WTP-QAM-QA-01-001*~~ASME-NQA-1-1989~~, *Quality Assurance Manual*~~*Program Requirements for Nuclear Facilities*~~" ,~~and~~ " SRD Volume II, Appendix ~~*,~~ G, *Ad Hoc Implementing Standard for Safety Analysis Report*"and "SRD Volume II, Appendix * - *Ad Hoc Standard for Project Integrated Safety Management Approach*."

L. Certification of Continued SRD Adequacy

Based on evaluations from III.I.1 and III.J.1. If question III.I.1 is marked "yes, Project Manager certification is required. The Project Manager's signature certifies that the revised SRD continues to identify a set of standards that provide adequate safety, complies with WTP applicable laws and regulations, and conforms with top-level safety standards and principles. This certification is based on adherence to the DOE/RL-96-0004 standards identification process and successful completion of review and confirmation by the PSC.

WTP Project Manager: Ron Naventi

Print/Type Name *Signature* *Date*

M. List of Attachments

1. Safety Requirements Document (SRD), 24590-WTP-SRD-ESH-01-001-02, Volume II Proposed Changes
2. Identification of Implementing Standards for the WTP Project Documentation and Submittals
3. SRD Proposed Changes Summary/Safety Evaluation

9.0 Documentation and Submittals

Safety Criterion: 9.0 - 1

~~An annual report shall be prepared and submitted to the Regulator and appropriate local officials. The annual report shall document:~~

~~(1)the quantity of each of the principal radionuclides in excess of background released to unrestricted areas in liquid and gaseous effluents during the previous year of operation.~~

~~(2)the calculated annual dose to the maximally exposed members of the public, and (3) the calculated collective dose to members of the public from exposures to RPP-WTP radiation sources.~~

~~Reports on dose estimates to the public shall include relevant site-specific information, including the locations of members of the public subject to the greatest potential exposures, the population distribution subject to exposures from RPP-WTP activities, and exposure pathways germane to the site. Values of assumed default or site-specific parameters used in calculations shall be discussed and included with the documentation of the calculations.~~

Air and liquid effluent samples and monitoring data required by state and federal regulations and permits shall be collected. The monitoring and sampling data shall include the quantity of each of the principal radionuclides in excess of background released to unrestricted areas in liquid and gaseous effluents during the previous year of operation. Appropriate data and analyses shall be submitted to the appropriate Hanford Site contractor in a timely manner and include relevant site-specific information, including the locations of members of the public subject to the greatest potential exposures, the population distribution subject to exposures from WTP activities, and exposure pathways germane to the site. This data shall be used to prepare the mandatory state and federal environmental reports using approved EPA computer codes.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 9.2 Scheduling of Events for Regulatory Submittals~~

None

Regulatory Basis

40 CFR 61	*National Emission Standards for Hazardous Air Pollutants*	*Location: 104*
40 CFR 61	*National Emission Standards for Hazardous Air Pollutants*	*Location: 94*
WAC 246-247	*Radiation Protection - Air Emissions*	*Location: Part 080 (2) & (3)*

Safety Criterion: 9.0 - 2

The Contractor should request authorization for construction only after being satisfied by appropriate internal assessments that the main safety issues have been satisfactorily resolved and that the remainder are amenable to solution before operations are scheduled to begin.

Implementing Codes and Standards

24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan
Section: 9.2 Scheduling of Events for Regulatory Submittals

Regulatory Basis

DOE/RL-96-0006	*4.4.3*	*Recommendation for Initiation of Construction*

Safety Criterion: 9.0 - 3

The results of the pre-startup safety review should be submitted to DOE for evaluation and in support of authorization decisions and regulatory oversight.

Implementing Codes and Standards

24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan
Section: 9.2 Scheduling of Events for Regulatory Submittals

Regulatory Basis

DOE/RL-96-0006 5.2.6 Pre-startup Safety Review

Safety Criterion: 9.0 - 4

Material that is part of the authorization basis shall be established, documented, and submitted to the DOE for evaluation and in support of decisions and regulatory oversight. The material shall be maintained current with respect to changes made to the facility design and administrative controls and in the light of significantly new safety information.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 3.3.1 Content of the Authorization Basis~~
~~Section: 3.3.2 Control of the Authorization Basis~~
~~Section: 3.3.3 Changes to Safety Documentation~~
24590-WTP-SRD-ESH-01-001-02, *Safety Requirements Document Volume II*
Appendix G, Ad Hoc Implementing Standard for Safety Analysis Reports

Safety Criterion: 9.1 - 3

A Preliminary Safety Analysis Report (PSAR) shall be submitted to the regulator only after all major safety issues have been resolved and other safety issues scheduled for completion. The PSAR shall document the facility design and plans for construction and demonstrate adequate planning for the operational phase.

A Final Safety Analysis Report (FSAR) shall be submitted to the regulator for approval prior to authorization to operate the facility. The FSAR shall document the completed design and construction and provide details on the plans for operation. The FSAR shall include facility and process drawings and fabrication and construction specifications important to the safety analysis of the facility. The FSAR shall identify significant changes made in the facility design and plans for operation from what was presented in the PSAR.

Implementing Codes and Standards

24590-WTP-SRD-ESH-01-001-02, *Safety Requirements Document Volume II*
Appendix G, "Ad Hoc Implementing Standard for Safety Analysis Reports"

Safety Criterion: 9.1 - 4

The FSAR shall be reviewed annually and updated as necessary to ensure that the information is current, remains applicable, and reflects all changes implemented up to ~~3~~6 months prior to the filing of the updated FSAR. The regulatory approval of any Unreviewed Safety Questions, and the material submitted to the regulator in support of that approval, shall be considered an addendum to the FSAR until the information is incorporated into the FSAR as part of the next periodic update.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 3.3.3 Changes to Safety Documentation~~
Section 4.1.3, "Annual DSA Updates (830.202)", as tailored in *Safety Requirements Document Volume II*, Appendix C

Regulatory Basis

DOE/RL-96-0006 *4.1.3.1 Authorization Basis-Authorization Basis*

Safety Criterion: 9.1 - 5

The SAR shall be maintained as a controlled document.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Chapter: 8.0 Document Control and Maintenance~~
24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*
Policy Q-06.1, "Document Control"
Policy Q-17-1, "Quality Assurance Records"

Regulatory Basis

DOE/RL-96-0006 *4.1.3.1 Authorization Basis-Authorization Basis*

Safety Criterion: 9.1 - 6

All responsibilities concerning the facility as identified in the approved SAR shall be carried out.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Section: 3.2 Safety Responsibilities~~
24590-WTP-SRD-ESH-01-001-02, *Safety Requirements Document Volume II*
Appendix * - "Ad Hoc Implementing Standard for Project Integrated Safety Management Approach"

Safety Criterion: 9.1 - 7

The hazard analysis shall be submitted for approval as part of the SAR.

Implementing Codes and Standards

~~24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan~~
~~Chapter: 9.0 Scheduling of Safety-Related Activities~~
24590-WTP-SRD-ESH-01-001-02, Safety Requirements Document
Appendix G~~*~~, Ad Hoc Implementing Standard for Safety Analysis Reports

Regulatory Basis

X.0 DOE Guide 421.1-2, Implementation Guide for Use in Developing Documented Safety Analysis to Meet Subpart B of 10 CFR 830

Revision: 24 October 2001
Sponsoring Organization: Department of Energy, Office of Nuclear and Facility Safety

WTP Specific Tailoring

The following tailoring of DOE Guide 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, is required for use by the WTP contractor as an implementing standard for the preparation of the WTP Maintenance Program.

Throughout

Use of the terms "Documented Safety Analysis" or "DSA" is understood to mean "Final Safety Analysis Report" or "FSAR" for the WTP project.

Justification: The general DSA term used in section 4.1.3 of the guide is interpreted to apply to the Final Safety Analysis Report (FSAR) documentation that will be used to describe the WTP safety analysis.

Section 4.1.3, Page 15 Annual DSA Updates (830.202)

In the 5th paragraph change the last sentence to "However, at least those implemented six months or more before the submittal of the annual update shall be included."

Justification: Changed for consistency with Safety Criterion 9.1-4.

IDENTIFICATION OF IMPLEMENTING STANDARDS FOR THE WTP PROJECT DOCUMENTATION AND SUBMITTALS

1 Purpose

The River Protection Project Waste Treatment Plant (WTP) Project Contract with the Department of Energy (DOE) [Ref. 1] and the project Safety Requirements Document (SRD) [Ref. 2] requires that the WTP contractor develop documentation and submittal elements in accordance with the requirements of the SRD safety criteria 9.0-1, 9.0-4, 9.1-4, 9.1-5, 9.1-6 and 9.1-7. The Contract also requires compliance with 10 CFR 830 and other laws and regulations. With the transition of the WTP Project to the Bechtel National, Inc (BNI) design, construction, and commissioning (DC&C) Contract, the standard selected for the implementing standard for the project documentation and submittals was evaluated to determine if a new standard should be selected. This attachment to 24590-WTP-ABCN-ESH-021 documents this evaluation of the selection of a new implementing standard for documentation and submittals.

2 Scope

This attachment documents the results of a specially constituted Integrated Safety Management (ISM) team for re-evaluation and identification of certain documentation and submittals implementing standard. This attachment to 24590-WTP-ABCN-ESH-01-021 furnishes a summary of an integrated safety management process for identification of these standards, rationale for the re-evaluation and identification of the standard, and documentation to demonstrate the standards meet the ISM standards selection process acceptance criteria.

In support of re-evaluation of implementing standard for certain documentation and submittals a "standards selection process", using the project ISM process, was undertaken in compliance with the DOE/RL-96-0004 [Ref. 1] regulatory process. The project-specific implementing standard for this regulatory process is detailed in Appendix A of the SRD, "Implementing Standard for Safety Standards and Requirements Identification".

The identification of certain documentation and submittals implementing codes and standards was performed in compliance with the procedural requirements specified in project procedure 24590-WTP-GPP-SANA-002 [Ref. 6]. This procedure requires that identification of standards, other than engineering/design, manufacture/fabrication, and construction standards (e.g., standards for quality assurance, conduct of operations, etc.), is performed by specially constituted teams formed by the Process Management Team (PMT).

3 Discussion

Based on the standards identification results of the ISM team and the PMT recommendation of the selected standard to the WTP Project Safety Committee (PSC) Chair, the PSC Chair requested the PSC confirm the selected set of standards.

3.1 Approach

Upon confirmation of the ISM process-selected implementing standard for certain documentation and submittals by the PSC and approval by the Project Manager, based on the PSC recommendation, the implementing standard will be proposed for DOE approval of an SRD update, via the project Authorization Basis Maintenance Process.

Following approval of the ABCN by the DOE Office of Safety Regulation (OSR), the results of the standards selection ISM process will be documented in the applicable SRD safety criteria.

3.1.1 ISM Team Composition

A multi-discipline ISM team provided recommendation of implementing standards for the WTP Project documentation and submittals. This team[1] consisted of the following individuals:

Name	Title	Department
Ken Gibson, team chairperson	Safety and Licensing Engineer	ES&H/Regulatory Safety
Lorie Blehm	Procedures Lead	Commissioning & Tng
Larry Kessie	Architectural Supervisor	Engineering

Note 1: The need to establish this team, selection of appropriate chairperson, and determination of scope of discipline involvement was confirmed at the PMT meeting held on June 1, 2001

3.1.2 Implementing Standards Selection Criteria

When properly implemented, the set of standards for documentation and submittals will:

1) Provide adequate safety
2) Comply with applicable laws and regulations
3) Conform with the Top-Level Safety Standards and Principles

At a minimum, the assessment team also considered the following contractual [Ref. 1] requirements for the radiological, nuclear, and process safety as excerpted from the contract Statement of Work, Section C6, Standard 7, Item (e)(2):

(i) The Contractor shall develop and implement an integrated standards-based safety management program to ensure that radiological, nuclear, and process safety requirements are defined, implemented, and maintained. Radiological, nuclear, and process safety requirements shall be adapted to the specific hazards associated with the Contractor's WTP activities.

(ii) The Contractor's integrated standards-based safety management program shall be developed to comply with the specific nuclear safety regulations defined in the effective rules of the 10 CFR 800 series of nuclear safety requirements and with the regulatory program established in the following four documents:

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

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

(C) DOE/RL-96-0005, *Concept of the DOE Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor;* and

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

Changes to the four documents will be analyzed under RL/REG-98-14, *Regulatory Unit Position on New Safety Information and Back-fits*, and, if implemented, dispositioned in accordance with the Section I Clause entitled, *Changes*.

The integrated standards-based safety management program shall integrate the appropriate planning and practices elements specified in 29 CFR 1910.119, *Occupational Safety and Health Act of 1970, Process Safety Management of Highly Hazardous Chemicals*, to the extent that highly hazardous chemicals are present in quantities covered by 29 CFR 1910.119.

(iii) (only applicable to the Integrated Safety Management Plan)

(iv) The Contractor shall prepare and submit to DOE for review and approval, the radiological, nuclear, and process safety deliverables defined in Table S7-1, *Radiological, Nuclear, and Process Safety Deliverables.* Each deliverable is structured around the following six activities:

(A) Standards Approval;

(B) Initial Safety Evaluation;

(C) Authorization for Construction and Cold Commissioning;

(D) Authorization for Hot Commissioning;

(E) Oversight Process Determination; and

(F) Deactivation Safety Assessment.

For the QA program, as excerpted from the contract Statement of Work, Section C6, Standard 7, item (e)(3), Quality Assurance:

(3) Quality Assurance:

The Contractor shall develop a QA Program, supported by documentation that describes overall implementation of QA requirements. Documentation shall identify the procedures, instructions, and manuals used to implement the Contractor's QA program within the Contractor's scope of work. Specific requirements for process development, waste form qualification and testing are described in Standards 2 and 6. The Contractor's documentation shall be submitted to DOE for review and approval (Table C.5-1.1, Deliverable 7.2). The Contractor shall utilize a technically defensible graded approach to develop the QA program based upon the requirements of:

(i) QA for radiological, nuclear, and process safety shall be conducted in accordance with 10 CFR 830.120.

(ii) QA for process development, waste form qualification and testing shall be conducted as described in Standards 2 and 6. This portion of the QA program shall be described in a QA Provisions document and be provided to DOE for concurrence within 2 months of Contract award. The quality assurance program description shall address the following requirements:

(A) The Contractor shall implement the Office of Civilian Radioactive Waste Management's, Quality Assurance Requirements and Description Document (QARD), DOE/RW-0333P, Revision 10, for elements of the Contractor's scope that may affect the Immobilized High-Activity Waste (IHLW) product quality, including but not limited to, waste form development, qualification, characterization, production process control, and certification of the IHLW.

(B) The Contractor shall implement the National Consensus Standard AMSE/NQA-1, 1989, Revision (NQA-1) for elements of the Contractor's scope that may affect product quality of the Immobilized Low-Activity Waste (ILAW), entrained solids, and sludge washing, including, but not limited to, waste form development, qualification, characterization, production process control, certification of ILAW, entrained solids, and sludge washing. Furthermore, all research and technology activities (other than IHLW – see (A)) shall be conducted in accordance with NQA-1.

(iii) QA for permitting activities shall be conducted in accordance with all applicable laws and regulations, including RCRA, TSCA (if later directed by DOE), and WAC 173-303 QA requirements.

(iv) QA for facilities, projects, and secondary wastes not subject to the above requirements shall be done in accordance with DOE Order 414.1A.

(v) The Contractor may be required to use additional consensus standards in order to describe and implement a fully functional, systematic QA program for nuclear facility construction or for nuclear safety-related work. The RPP adopted the NQA-1 (1989 Revision) as the primary QA reference document and the Contractor shall utilize this Standard to help achieve the quality objectives of this Contract, as necessary.

(vi) DOE or its designee(s) shall have access to, and the right to conduct assessments, audits, and/or surveillance of the Contractor (and its subcontractors/suppliers, at any level) activities to ensure compliance with the appropriate requirements and the Contractor's QA program, at DOE discretion.

For the Environmental program, as excerpted from the contract Statement of Work, Section C6, Standard 7, item (e)(4), Environmental Protection:

The Contractor shall work with the appropriate Hanford Site contractor in providing legally and regulatory required air and liquid effluent and near facility environmental monitoring. The Contractor shall collect, compile, and/or integrate air and liquid effluent monitoring data from operations and activities under their control. The Contractor shall compare the monitoring data with regulatory and/or permit standards applicable to their activities and/or operations and provide the data and analyses to the appropriate Hanford Site contractor for use in preparing the mandatory State and Federal environmental reports for the Hanford Site in a timely manner. In addition, the Contractor shall provide appropriate environmental data for the WTP to support Hanford Site assessments and preparation of the Hanford Site Environmental Report.

The selection of implementing standards considered that the QA Program is structured to meet the composite requirements of:

1) 10 CFR 830.120 and DOE Order 414.1A,
2) Principles stipulated in *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for TWRS Privatization Contractors*, DOE/RL-96-0006 (DOE-RL 1996b), and
3) Specific Contract requirements

The QA Program, as described in requirements of the project Quality Assurance Manual (QAM) [Ref. 7], provides assurance that the design, procurement, construction, testing, inspection, operation, deactivation, waste form qualification, modification, and maintenance activities conducted at the facility conform to regulatory and contractual requirements and reflect best industry practices.

3.2 Results of ISM Team Standards Selection Process

The ISM team reviewed the Contract required standards and a candidate set of implementing standards. This set of standards provided acceptable methods for implementing the requirements of DOE/RL-96-0006, the Contract, and the SRD. No standard fully meets the requirements for the documentation and submittals safety criteria under consideration (Safety Criteria 9.0-1, 9.0-4, 9.1-4, 9.1-5, 9.1-6 and 9.1-7) for the WTP project. A listing of candidate standards considered follows:

- NUREG-1513, *Integrated Safety Analysis Guidance Document*, draft, distributed August 8, 1994, U.S. Nuclear Regulatory Commission, Washington, D.C.

- NUREG-1520, Standard Review Plan for the Review of a License Application for a Fuel Cycle Facility, draft, U.S. Nuclear Regulatory Commission, Washington, D.C.

- Regulatory Guide 1.70, *Standard Format and Content of Safety Analysis Reports For Nuclear Power Plants, LWR Edition*, Revision 3, U.S. Nuclear Regulatory Commission, Washington, D.C.

- Regulatory Guide 3.52, *Standard Format and Content for the Health and Safety Sections of License Applications for Fuel Cycle Facilities*, Revision 2, draft, U.S. Nuclear Regulatory Commission, Washington, D.C.

- DOE-STD-3009-94, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports*, Revision 1, January 2000, U.S. Department of Energy, Washington, D.C.

- DOE Guide DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, October 2001, U.S. Department of Energy, Washington, D.C.

- ASME NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*, and supplements, American Society of Mechanical Engineers, Fairfield, New Jersey

- DOE Order 414.1A, *Quality Assurance*, September 29, 1999

- DOE Order 414.1A, Attachment 1, Contractor Requirements Document (CRD) DOE O 414.1A, *Quality Assurance*, September 29, 1999

- DOE G 414.1-1, *Implementation Guide for Use with Independent and Management Assessment Requirements of 10 CFR 830.120 and DOE Order 5700.6C Quality Assurance*, August 1996

- DOE G 414.1-2, *Quality Assurance Management System Guide for use with 10 CFR 830.120 and DOE Order 414.1*, June 1999

- 24590-WTP-QAM-QA-01-001, Revision 0, *Quality Assurance Manual*

- DOE/RW-0333P, *Quality Assurance Requirements Document and Description for the Civilian Radioactive Waste Management Program*, Revision 10, July 2000

- SRD Volume II, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Reports*

- SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach*

Summary of Selected Implementing Standard:

The ISM Team determined that, from the set of candidate implementation standards, the following provides adequate implementing standards for the Safety Criteria (SC) under consideration (i.e., 9.0-1, 9.0-4, 9.1-4, 9.1-5, 9.1-6 and 9.1-7):

- For SC 9.0-1 - none
- For SC 9.0-4 - proposed ad hoc implementing standard, SRD Volume II, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Reports*~~, only to support the mission of the WTP~~. (See ABCN-24590-WTP-00004, Revision 2) and new proposed ad hoc implementing standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach (*See ABCN 24590-WTP-ABCN-ESH-01-007, Revision 2).
- For SC 9.1-4 – DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, as tailored in SRD Volume II, Appendix C. [Ref 9.]
- For SC 9.1-5 ~~–~~ – 24590-WTP-QAM-QA-01-001~~ASME NQA-1-1989~~, *Quality Assurance Manual*~~*Program Requirements for Nuclear Facilities*~~, Policy Q-06.1 and Q-17.1~~Section 3S-1 and Section 7 including supplements [Ref 8.]~~.
- For SC 9.1-6 - SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* ~~ASME NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*, Section 1 including supplements~~
- For SC 9.1-7 - proposed ad hoc implementing standard, SRD Volume II, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Reports*, only to support the mission of the WTP. (See ABCN-24590-01-00004, Revision 2)

Confirmation of the adequacy of the Project implementing standards for certain documentation and ~~submittats~~ submittals was provided by comparison to the standards acceptance criteria. The ISM Team made this confirmation through the application of the ISM ("0004") process.

The ISM Team assessed the selected implementing standards to confirm that they provided adequate safety, complied with applicable laws and regulations, and conformed to the top-level safety standards and principles. A summary of how the selected standard met these criteria, as well as how the implementing standards is consistent with the applicable safety criteria of the SRD requirements specified is presented in the following sections.

3.2.1 Adequate Safety

The current set of DOE approved safety criteria requirements for certain documentation and submittals is furnished in SRD safety criteria 9.0-1, 9.0-4 and 9.1-4 through 9.1-7. It is proposed to revise SRD Safety Criterion 9.0-1 to reflect the current contract requirement to provide environmental monitoring data to the appropriate Hanford contractor for incorporation into the mandatory State and Federal environmental reports for the Hanford Site. It is proposed to revise SRD Safety Crterion 9.1-4 to include facility

changes implemented "six" months before submittal of the FSAR annual update. There are no proposed changes to the other currently approved SRD safety criteria, other than the selection of the new implementing standards. Use of "None" as the implementing standard for SRD Safety Criterion 9.0-1; the proposed Ad Hoc Standard for Safety Analysis Reports and the new proposed implementing standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* as the implementing standard for SRD Safety Criterion 9.0-4, 9.1-6 and 9.1-7; DOE G 421.1-2 for SRD Safety Criterion 9.1-4; and 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*~~ASME NQA-1-1989~~ for SRD Safety Criteria 9.1-5~~ and 9.1-6~~ was reviewed by the ISM team to confirm that adequate safety is still provided by using these standards for certain documentation and submittals. This review was conducted through assessment of the scope and content of the implementing standards to ensure they provided adequate guidance to meet existing SRD safety criteria for certain documentation and submittals.

The adequacy of these SRD safety criteria to support adequate safety is supported by prior DOE evaluation of the adequacy of these SRD safety criteria for the SARs. The evaluation by the DOE Regulatory Unit (RU), now known as the Office of Safety Regulation (OSR), of the safety criteria was provided in RL/REG-98-01 supports the conclusion of adequacy of the SRD safety criteria. The RU reviewed the original SRD safety criteria and reported the results of the review in RL/REG-98-01. The conclusions of the review were that the project had established safety criteria (including SRD SC 9.0-1, 9.0-4 and 9.1-4 through 9.1-7) that provided commitment to full compliance with 10 CFR 820.

Additionally the RU reviewed Revision 1A of the SRD safety criteria and reported the results in RL/REG-98-20, Revision 1. Specific to Chapter 9, Documentation and Submittals, DOE stated that the subordinate standard for Safety Criterion 9.0-1 (sections of the ISMP) must be revised to be as least as specific as the overlying Safety Criterion. This safety criteria has been re-written to align with the contract requirement to provide environmental monitoring data to the appropriate Hanford Site contractor or use in preparing mandatory State and Federal environmental reports. Because this safety criterion is explicit in the requirements, it was determined by the ISM Team that no implementing standard is necessary. See evaluation below. Also for Safety Criterion 9.1-4, DOE stated that an adequate subordinate standard for FSAR annual review and update must be provided. Use of the implementing standard is consistent with SAR related commitments in the ISMP. RL/REG-98-20, Revision 1, section 4.2.i requested that the Contractor identify an adequate subordinate standard for FSAR annual review and update prior to FSAR submittal. DOE G 421.1-2 provides the guidance for FSAR annual reviews and updates.

3.2.2 Compliance with All Applicable Laws and Regulations

Selection of the new proposed ad hoc implementing standard, SRD Volume II, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Reports* and SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* as an implementing standard for Safety Criterion 9.0-4, 9.1-6 and 9.1-7 is compliant with the current 10 CFR 830 requirements (including 10 CFR 830 Subpart B, *Safety Basis Requirements* effective April 10, 2001). Section of DOE G 421.1-2 as the implementing standard for Safety Criterion 9.1-4 is compliant with 10 CFR 830, Subpart B, *Safety Basis Requirements*. Selection of the QAM~~NQA-1~~ for safety criteria 9.1-5 ~~and 9.1-6~~ as the implementing standard is compliant with the prior 10 CFR Part 830.120 requirements, as well as a specific current requirement specified in 10 CFR 830 Subpart A (effective April 10, 2001) in paragraph 830.121, item (c) (3): "The QA Program must use voluntary consensus standards in its development and implementation, where practicable and consistent with contractual and regulatory requirements, and identify the standards used."

3.2.3 Conformance to Top-Level Safety Standards

Top-level safety standards for certain documentation and submittals are provided in DOE/RL-96-0006 [Ref. 2]. These "0006" standards related to certain documentation and submittals are identified as follows, along with an assessment of how use of the selected implementing standards ensures conformance to these top-level safety standards.

DOE/RL-96-0006; Item 4.1.3.1 Authorization Basis

Material that is part of the authorization basis should be established, documented, and submitted to the Director of the Regulatory Unit for evaluation and in support of decisions and regulatory oversight. The Contractor should maintain the material current with respect to changes made to the facility design and administrative controls and in the light of significantly new safety information.
Evaluation: This principle is the subject of the requirements contained in SRD SC 9.0-4. In addition, the Contract requires compliance with the nuclear safety regulations in the 10 CFR 800 series. The series requires that contractors document the safety analysis for the facility. The regulations require the Contractor obtain DOE approval if a safety basis methodology other than the 'safe harbor' methodology is used. For WTP Project, the new proposed ad hoc implementing standard, Appendix ~~*,~~ G, *Ad Hoc Implementing Standard for Safety Analysis Reports* and SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* will be used, which incorporates the content requirements of Reg Guide 3.52, DOE/RL-96-0003 and SRD Volume II, Safety Criterion 9.1-2 and a tailored format based on DOE-STD-3009-94 for safety analysis reports and the requirements for documenting other authorization basis per the Integrated Safety Management Plan. The use of these new proposed ad hoc implementing ~~standard~~ standards satisfies the top-level principle for the material to be documented as part of the authorization basis.

3.2.3 Evaluation Against Applicable SRD Safety Criteria

The SRD Safety Criteria for documentation and submittals are provided in the Safety Criteria in SRD Sections 9.0-1, 9.0-4 and 9.1-4 through 9.1-7. Safety Criteria 9.0-1, 9.0-4 and 9.1-4 through 9.1-7 address the certain documentation and submittal requirements for the WTP. An evaluation, as summarized below, demonstrated the adequacy of the selected implementing standard in meeting these six safety criteria.

SRD Safety Criterion: 9.0-1 (Proposed)
Air and liquid effluent samples and monitoring data required by state and federal regulations and permits shall be collected. The monitoring and sampling data shall include the quantity of each of the principal radionuclides in excess of background released to unrestricted areas in liquid and gaseous effluents during the previous year of operation. Appropriate data and analyses shall be submitted to the appropriate Hanford Site contractor in a timely manner and include relevant site-specific information, including the locations of members of the public subject to the greatest potential exposures, the population distribution subject to exposures from RPP-WTP activities, and exposure pathways germane to the site. This data shall be used to prepare the mandatory state and federal environmental reports using approved EPA computer codes.

Evaluation: The Contract Statement of Work, Section C6, Standard 7, item (e)(4), Environmental Protection states "The Contractor shall work with the appropriate Hanford Site contractor in providing legally and regulatory required air and liquid effluent and near facility environmental monitoring. The Contractor shall collect, compile, and/or integrate air and liquid effluent monitoring data from operations

and activities under their control. The Contractor shall compare the monitoring data with regulatory and/or permit standards applicable to their activities and/or operations and provide the data and analyses to the appropriate Hanford Site contractor for use in preparing the mandatory State and Federal environmental reports for the Hanford Site in a timely manner. In addition, the Contractor shall provide appropriate environmental data for the WTP to support Hanford Site assessments and preparation of the Hanford Site Environmental Report". The Hanford Site has established mechanisms and procedures for compiling and reporting information on radionuclide releases from all pathways and all Hanford Site sources. The radionuclide release information is input to the appropriate computer models to calculate the dose to the maximally exposed individual and the collective dose to members of the public. The release and dose information, including site-specific, population, and pathway information is reported annually in several reports that are submitted to DOE; state, local, and federal regulatory agencies; members of the public; and other Hanford Site stakeholders.

The WTP Contract with the DOE Office of River Protection requires that radionuclide release information will be provided to the DOE Contractor responsible for compiling various annual reports. WTP release and dose information will then be included in the appropriate annual reports documenting public exposure to WTP radionuclide emissions. WAC 246-247-080 (2) and (3) has been added as the regulatory basis with 40 CFR 61. Since this safety criterion is explicit in the requirements, no implementing standard is necessary. These documentation requirements will be proceduralized and implemented by the WTP Project.

SRD Safety Criterion: 9.0-4

Material that is part of the authorization basis shall be established, documented, and submitted to the DOE for evaluation and in support of decisions and regulatory oversight. The material shall be maintained current with respect to changes made to the facility design and administrative controls and in the light of significantly new safety information.

Evaluation: This Safety Criterion establishes the requirement for development and submittal of the WTP Project AB documentation: Integrated Safety Management Plan (ISMP), Safety Requirements Document (SRD), safety analysis reports, the Quality Assurance Manual (QAM), Radiation Protection Program (RPP) document, Emergency Management Plan (during operations) and the Limited Construction Authorization Request (LCAR). The new proposed ad hoc implementing standard, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Reports* and SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* is used as the guidance document for development of the SAR and other AB documentation and provides the necessary guidance for establishing, documenting and submittal of authorization basis material to DOE per safety criteria 9.1-1 through 9.1-3 and is the appropriate implementing standard for Safety Criterion 9.0-4. The ISMP (section 1.1) and SRD (Volume II - Appendix A) provide the guidance for development and submittal of the ISMP and SRD respectively. ASME-NQA-1-1989 is used as the guidance for the Quality Assurance Program per safety criteria 7.3-2, 7.3-4 through 7.3-7, 7.3-9 and 7.3-11. DOE G 441.1-1 is used as the guidance in the development of a RPP document compliant with 10 CFR 835 per safety criterion 5.0-1. DOE/RL-94-02 is used as the guidance in the development of the Emergency Management Program per safety criterion 7.8-1.

~~ISMP Section 3.3.3 concerns changes to the Authorization Basis. None of the information contained in this section should be included in an implementing standard. This section on the control of the AB has been proceduralized by the WTP for maintenance of the Authorization Basis.~~

SRD Safety Criterion: 9.1-4 (Proposed)

The FSAR shall be reviewed annually and updated as necessary to ensure that the information is current, remains applicable, and reflects all changes implemented up to ~~3~~ 6 months prior to the filing of the updated FSAR. The regulatory approval of any Unreviewed Safety Questions, and the material submitted by the regulator in support of that approval, shall be considered an addendum to the FSAR until the information is incorporated into the FSAR as part of the next periodic update.
Evaluation: This Safety Criterion establishes requirements for reviewing and updating the FSAR. Revising the time period from 3 to 6 months allows the contractor sufficient time to complete the SAR update process for incorporating changes. Use of DOE G 421.1-2, as tailored in SRD Volume II, Appendix C as the implementing standard ~~for guidance~~ for the annual review of the FSAR is appropriate, since it provides guidance in meeting the provisions for documented safety analysis reports defined in the rule.

ISMP Section 3.3.3 concerns changes to the authorization basis. None of the information contained in this section should be included in an implementing standard. This section on the control of the AB does not contain information on the SARs or periodic reporting.

SRD Safety Criterion: 9.1-5

The SAR shall be maintained as a controlled document.

Evaluation: Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Standard 7(e)(3)(ii)(B), ASME-NQA-1-1989 is identified. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for SC 9.1-5 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual*, Policy Q-06.1 and Q-17.1 contains specific requirements for maintaining and controlling quality effecting records.

SRD Safety Criterion: 9.1-6

All responsibilities concerning the facility as identified in the approved SAR shall be carried out.

Evaluation: Contract No. DE-AC27-01RV14136, Section C4(a) specifically requires the WTP "Contractor to be responsible for protecting human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional, construction, industrial and occupational hazards. The Contractor shall also provide safe and healthful working condition for employees, subcontractors and all other personnel under the Contractor's control who work in the general vicinity of the Contractor site and facilities." These requirements encompass safety criterion 9.1-6. Contract No. DE-AC27-01RV14136, Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further, in the Contact Standard 7(3)(ii)(B), ASME-NQA-1-1989 is identified. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for SC 9.1-6 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ Section 1.0 and 6.0 of the new proposed ad hoc standard, SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work.

The QAM provides the details of the QA Program. Policy Q-01.1 of the QAM details the assignments of the roles and responsibilities for project management and will be maintained throughout the project life. This requirement will ensure that Safety Criterion 9.1-6 remains implemented on the Project.

SRD Safety Criterion: 9.1-7

The hazard analysis shall be submitted for approval as part of the SAR.

Evaluation: This Safety Criterion establishes the requirement for development and submittal of the hazard analysis as part of the SAR. The new proposed ad hoc implementing standard, Appendix ~~*,~~ G, *Ad Hoc Implementing Standard for Safety Analysis Reports* is used as the guidance document for development of the SAR and identifies the hazard analysis as part of the SAR (section 3.3) and is the appropriate implementing standard for Safety Criterion 9.1-7.

4 Conclusions

The ISM Team determined that the new proposed ad hoc implementing standard, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Reports* and SRD Volume II, Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* provide~~s~~ an adequate and appropriate implementing standard for certain documentation and submittals for the WTP Project, specifically Safety Criteria 9.0-4, 9.1-6 and 9.1-7. Further the ISM Team determined that DOE G 421.1-2, as tailored in SRD Volume II, Appendix C and the Quality Assurance Manual~~ASME NQA-1-1989~~ provide adequate and appropriate implementing standards for Safety Criterion 9.1-4 and Safety Criteria 9.1-5 and 9.1-6 respectively. The ISM Team determined that these standards provide adequate safety, complies with applicable laws and regulations and conform to the Top-Level Safety Standards and Principles. Use of these implementing standards was found by the ISM Team to be consistently reflected in the certain documentation and submittals related commitments contained within the ISMP. Additionally, it was determined that Safety Criterion 9.0-1 needed to be re-written to align with the current contract and as proposed to be written is explicit in the requirements, such that no implementing standard is needed. These documentation and submittals requirements will be proceduralized and implemented by the WTP Project. Also, it is proposed to revise SRD Safety Crterion 9.1-4 to include facility changes implemented "six" months before submittal of the FSAR annual update to allow the contractor sufficient time to complete the SAR update process for incorporating changes.

5 Recommendations

"None" should be recommended by the Process Management Team (PMT) to the Project Safety Committee (PSC) for confirmation as the implementing standard for SRD SC 9.0-1, in addition to the re-write of this safety criterion. The new proposed ad hoc implementing standards, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Reports* and Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* should be recommended by the PMT to the PSC for confirmation as the implementing standards for SRD SC 9.0-4. ~~and SRD SC 9.1-7.~~ Additionally, DOE G 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, as tailored in SRD Volume II, Appendix C and 24590-WTP-QAM-QA-01-001, *Quality Assurance Manual* ~~ASME NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*~~ should be recommended by the PMT to the PSC for confirmation as the implementing standards for SRD SC 9.1-4 and SRD SCs 9.1-5 ~~and 9.1-6~~ respectively. ~~-~~Also Safety Criterion 9.1-4 should be re-written to revise the time period from 3 to 6 months which will allow the contractor sufficient time to complete the SAR update process for incorporating changes. The new proposed ad hoc

implementing standard Appendix * - *Ad Hoc Implementing Standard for Project Integrated Safety Management Approach* should be recommended by the PMT to the PSC for confirmation as the implementing standards for SRD SC 9.1-6. The new proposed ad hoc implementing standard, Appendix *, *Ad Hoc Implementing Standard for Safety Analysis Reports* should be recommended by the PMT to the PSC for confirmation as the implementing standard for SRD SC 9.1-7.

6 References

1. DOE Contract DE-AC27-01RV14136, December 2000, U.S. Department of Energy, Office of River Protection, Richland, Washington
2. *Safety Requirements Document*, 24590-WTP-SRD-ESH-01-001-02, Revision 0, Bechtel National, Inc., Richland, Washington. (Revision 0 issued September 2001).
3. 10 CFR 830 Subpart A, "Quality Assurance Requirements", *Code of Federal Regulations*, as amended.
4. *Top-level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP-WTP Waste Treatment Plant Contractor*, DOE/RL-96-0006, Revision 2, February 2001, U.S. Department of Energy, Office of River Protection, Richland, Washington.
5. *Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards, and Requirements for the RPP-WTP Waste Treatment Plant Contractor*, DOE/RL-96-0004, Revision 2, February 2001, U.S. Department of Energy, Office of River Protection, Richland, Washington.
6. River Protection Project Waste Treatment Plant Project Procedure, 24590-WTP-GPP-SANA-002, "Hazard Analysis, Development of Hazard Control Strategies, and Identification of Standards", Rev. 0, 9/28/01
7. 24590-WTP-QAM-QA-01-001, Revision 0, *Quality Assurance Manual*
8. ASME NQA-1-1989, *Quality Assurance Program Requirements for Nuclear Facilities*, and supplements, American Society of Mechanical Engineers, Fairfield, New Jersey
9. DOE Guide 421.1-2, *Implementation Guide for Use in Developing Documented Safety Analyses to Meet Subpart B of 10 CFR 830*, October 2001, U.S. Department of Energy, Washington, D.C

Safety Requirements Document
24590-WTP-SRD-ESH-01-001-02
SRD Proposed Changes Summary/Safety Evaluation

SRD Safety Criterion	Currently Implementing ISMP Section	Proposed Code/Standard	Basis/Rationale
9.0-1 **[Proposed]** Air and liquid effluent samples and monitoring data required by state and federal regulations and permits shall be collected. The monitoring and sampling data shall include the quantity of each of the principal radionuclides in excess of background released to unrestricted areas in liquid and gaseous effluents during the previous year of operation. Appropriate data and analyses shall be submitted to the appropriate Hanford Site contractor in a timely manner and include relevant site-specific information, including the locations of members of the public subject to the greatest potential exposures, the population distribution subject to exposures from RPP-WTP activities, and exposure pathways germane to the site. This data shall be used to prepare the mandatory state and federal environmental reports using approved EPA computer codes.	**9.2 Scheduling of Events for Regulatory Submittals** This section addresses the scheduling of regulatory submittals required by DOE/RL-96-0003, *DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors* (DOE-RL 1996a) and the Safety Requirements Document (BNFL 1997d). Figure 9-1 provides the sequence of events for the following deliverables to DOE. 1) The construction authorization package, which will include the Preliminary Safety Analysis Report (PSAR). The PSAR will address Items 1-5, 7-15, 18, and 20 of DOE/RL-96-0003, Section 4.3.2, "Contractor Input", (DOE-RL 1996a). The remaining items will be provided separately from the PSAR. 2) The operating authorization package, which will include the Final Safety Analysis Report (FSAR). The FSAR will address Items 1-5, 7-9, 12, 15, 17, 18, 20, 21, and 23 of DOE/RL-96-0003, Section 4.4.2, "Contractor Input", (DOE-RL 1996a). The remaining items will be provided separately from the FSAR. 3) The submittal of the deactivation authorization request. This will include revision to the Integrated Safety Management Plan (ISMP) to provide additional detail on deactivation activities. The self-assessment documents identified in Item 4 of DOE/RL-96-0003, Section 4.5.2, "Contractor Input" are provided to the DOE within 90 days of the completion of the assessment. Revisions to the Quality Assurance Program will be submitted to the DOE with the standards approval package for construction, operation, and deactivation which is submitted fourteen weeks prior to the scheduled authorization request submittal.	None	Safety Criterion 9.0-1 is explicit in the requirement for the contractor to prepare an annual report that documents the quantity of each of the principal radionuclides in excess of background released to unrestricted areas in liquid and gaseous effluents during the previous year of operation, the calculated annual dose to the maximally exposed members of the public, and the calculated collective dose to members of the public from exposures to WTP radiation sources, hence no implementing standard is necessary. The Hanford Site has established mechanisms and procedures for compiling and reporting information on radionuclide releases from all pathways and all Hanford Site sources. The radionuclide release information is input to the appropriate computer models to calculate the dose to the maximally exposed individual and the collective dose to members of the public. The release and dose information, including site-specific, population, and pathway information is reported annually in several reports that are submitted to DOE; state, local, and federal regulatory agencies; members of the public; and other Hanford Site

Safety Requirements Document
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SRD Proposed Changes Summary/Safety Evaluation

SRD Safety Criterion	Currently Implementing ISMP Section	Proposed Code/Standard	Basis/Rationale
			stakeholders. The WTP Contract with the DOE Office of River Protection, Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(4)(v) requires that radionuclide release information be provided to the DOE Contractor responsible for compiling various annual reports. WTP release and dose information will then be included in the appropriate annual reports documenting public exposure to WTP radionuclide emissions. In view of the above, no implementing standard is necessary to implement the requirements of this safety criterion. These requirements will be proceduralized and implemented by the WTP Project.
9.0-4 Material that is part of the authorization basis shall be established, documented, and submitted to the DOE for evaluation and in support of decisions and regulatory oversight. The material shall be maintained current with respect to changes made to the facility design and administrative controls and in the light of significantly new safety information.	**3.3.1 Content of the Authorization Basis** The authorization basis for RPP-WTP includes the documentation discussed in the following sections. This documentation includes that information submitted in connection with a request for Standards Approval, a request for Construction Authorization, or a request for Operations Authorization as described in DOE/RL-96-0003, *DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors*, and any other information submitted by BNI in connection with these requests (DOE-RL 1996a). Amendments to this information may be in the form of revisions to the previously submitted documents, or new information that supplements previously submitted information. The authorization basis begins at the Standards Approval regulatory action and continues throughout the design, constructions, operation, and deactivation of the RPP-WTP. The following Sections 3.3.1.1 through 3.3.1.8 delineate the elements of the authorization basis. **3.3.2 Control of the Authorization Basis** The authorization basis for RPP-WTP is considered as an element of the technical baseline for the facility. Changes to the technical baseline are managed by a configuration management program. For further information concerning configuration management see ISMP Sections 1.3.16 and 5.3, "Configuration Management".	SRD Volume II, Appendix ~~*,~~ G, Ad Hoc Implementing Standard for Safety Analysis Reports SRD Volume II, Appendix *, Ad Hoc Implementing Standard for Project Integrated Safety Management Approach	The new proposed ad hoc implementing standard, Appendix ~~*,~~ G, *Ad Hoc Implementing Standard for Safety Analysis Reports* is used as the guidance document for development of the SAR and provides the necessary guidance for establishing, documenting and submittal of authorization basis material to DOE per Safety Criteria 9.1-1 through 9.1-3. The new proposed ad hoc implementing standard, SRD Volume II, Appendix *, Ad Hoc Implementing Standard for Project

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	3.3.3 Changes to Safety Documentation Changes to the authorization basis include changes to the facility design and administrative controls (e.g., procedures, programs, plans, or management processes) that are described in the authorization basis or are relied on to ensure conformance to the authorization basis. Changes to the authorization basis are managed by a configuration management program discussed in ISMP Sections 1.3.16 and 5.3, "Configuration Management". As described in these sections, the change management program includes the use of qualified personnel, procedures developed and approved under the Project procedure process, and implementation under the approved QAP. By 10 CFR 830.120(b)(3), a contractor may, at any time, make changes to the approved QAP so long as the QAP, as changed, will continue to satisfy the requirements of 10 CFR 830.120. For the Project the commitment has been made that changes to a previously approved QAP will be submitted to the DOE for review and approval 30 days prior to the implementation of the subject changes. Annual updates to the QAP must identify the changes, the pages affected, the reason for the changes, and the basis for concluding that the revised QAP continues to satisfy the requirements of 10 CFR 830.120. These annual updates are also subject to the 30-day prior review by the DOE. As allowed by 10 CFR 835.101(l) BNI may make changes to the approved RPP so long as the change does not decrease the effectiveness of the RPP and the RPP, as changed, continues to meet the requirements of 10 CFR 835. Proposed changes that decrease the effectiveness of the RPP are not implemented without submittal to and approval by DOE. Updates to the RPP are required if a change or addition is made to the RPP. Updates of the RPP are considered approved 180 days after submittal unless rejected by the regulator. In accordance with *DOE Position on Contractor Initiated Changes to the Authorization Basis*, RL/REG-97-13 (DOE-RL 2000), BNI may make changes to the facility or administrative controls if a review of the Authorization Basis is performed and either: a) The review demonstrates that a proposed change is consistent with the existing Authorization Basis, or b) The Authorization Basis is revised prior to the implementation of the proposed change.		Integrated Safety Management Approach incorporates the requirements for other AB documentation. ~~and is~~ ~~t~~These standards are appropriate implementing standard for Safety Criterion 9.0-4. See ABCN-24590-01-00004, Revision 2~~1~~ and ABCN 24590-WTP-ABCN-ESH-01-007, Revision 2. This safety criterion establishes the requirement for development and submittal of Project AB documentation, i.e., the Integrated Safety Management Plan (ISMP), Safety Requirements Document (SRD), safety analysis reports, the Quality Assurance Manual (QAM), Radiation Protection Program (RPP) document, the Emergency Management Plan (during operations) and the Limited Construction Authorization Request (LCAR). The ISMP (section 1.1) and SRD (Volume II - Appendix A) provide the guidance for development and submittal of the ISMP and SRD respectively. ASME-NQA-1-1989 is used as the guidance for the Quality Assurance Program per Safety Criteria 7.3-2, 7.3-4 through 7.3-7, 7.3-9 and 7.3-11. DOE G 441.1-1 is used as the guidance in the development of a RPP document compliant

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			with 10 CFR 835 per safety criterion 5.0-1. DOE/RL-94-02 is used as the guidance in the development of the Emergency Management Program per safety criterion 7.8-1. ISMP Section 3.3.~~3~~ 1, 3.3.2, & 3.3.3 concerns changes to the authorization basis. ~~None of t~~The information contained in this section has~~should~~ been included in ~~an~~this implementing standard. This section on the control of the AB has been proceduralized by the WTP for maintenance of the Authorization Basis.
9.1-4 **[Proposed]** The FSAR shall be reviewed annually and updated as necessary to ensure that the information is current, remains applicable, and reflects all changes implemented up to ~~3~~ 6 months prior to the filing of the updated FSAR. The regulatory approval of any Unreviewed Safety Questions, and the material submitted ~~by~~ to the regulator in support of that approval, shall be considered an addendum to the FSAR until the information is incorporated into the FSAR as part of the next periodic update.	**3.3.3 Changes to Safety Documentation** Changes to the authorization basis include changes to the facility design and administrative controls (e.g., procedures, programs, plans, or management processes) that are described in the authorization basis or are relied on to ensure conformance to the authorization basis. Changes to the authorization basis are managed by a configuration management program discussed in ISMP Sections 1.3.16 and 5.3, "Configuration Management". As described in these sections, the change management program includes the use of qualified personnel, procedures developed and approved under the Project procedure process, and implementation under the approved QAP. By 10 CFR 830.120(b)(3), a contractor may, at any time, make changes to the approved QAP so long as the QAP, as changed, will continue to satisfy the requirements of 10 CFR 830.120. For the Project the commitment has been made that changes to a previously approved QAP will be submitted to the DOE for review and approval 30 days prior to the implementation of the subject changes. Annual updates to the QAP must identify the changes, the pages affected, the reason for the changes, and the basis for concluding that the revised QAP continues to satisfy the requirements of 10 CFR 830.120. These annual updates are also subject to the 30-day prior review by the DOE. As allowed by 10 CFR 835.101(l) BNI may make changes to the approved RPP so long as the change does not decrease the effectiveness of the RPP and the RPP, as changed, continues to meet the requirements of 10 CFR 835. Proposed changes that decrease the effectiveness of the RPP are not implemented without submittal to and approval by DOE. Updates to the RPP are required if a change or addition is made to the RPP. Updates of the RPP are considered approved 180 days after submittal unless rejected by the regulator.	DOE Guide DOE G 421.1-2, as tailored in SRD Volume II, Appendix C, Section 4.1.3	Contract No DE-AC27-01RV14136 Section C6, Standard 7(e)(2)(ii) specifically requires compliance with nuclear safety regulations of the 10 CFR 800 series. 10 CFR 830 requires that contractors obtain approval for methodology used to prepare documented safety analysis for the facility, unless the Contractor uses the methodology set forth in 10 CFR Part 830, Subpart B. Use of DOE Guide DOE G 421.1-2 as the implementing standard~~for guidance~~ for the annual review of the FSAR is appropriate, since it provides guidance in meeting the provisions for documented safety analysis reports defined in the rule. This safety criterion establishes requirements for reviewing

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	In accordance with *DOE Position on Contractor Initiated Changes to the Authorization Basis*, RL/REG-97-13 (DOE-RL 2000), BNI may make changes to the facility or administrative controls if a review of the Authorization Basis is performed and either: a) The review demonstrates that a proposed change is consistent with the existing Authorization Basis, or b) The Authorization Basis is revised prior to the implementation of the proposed change. **3.3.3.1 Authorization Basis Revisions.** BNI may make revisions to the authorization basis, other than to the QAP and RPP as discussed above, without prior approval of the DOE provided that the following safety evaluation and documentation requirements are met: a. An evaluation is performed that demonstrates that the revision: 1) Does not involve deletion or modification of a standard previously identified or established in the approved SRD. 2) Does not involve a modification of an approved Technical Safety Requirement. 3) Does not result in a reduction of a commitment described in the Authorization Basis. 4) Does not result in a reduction in the effectiveness of any program, procedure, or plan described in the Authorization Basis. 5) Does not result in an Unreviewed Safety Question (USQ), if a Production Operations Authorization has been issued. b. A written evaluation is performed that demonstrates that the revisions to the authorization basis: 1) Will continue to comply with all applicable laws and regulations, conform to top-level safety standards, and provide adequate safety. 2) Will continue to conform to the original submittal requirements associated with the authorization basis document(s) affected by the revision. 3) Will not result in inconsistencies with other commitments and descriptions contained in the authorization basis or an authorization agreement. c. The following documentation requirements are met: 1) All changes, authorization basis revisions, and associated evaluations performed in accordance with paragraphs a and b above will be documented. 2) Documentation will be retained and readily available for DOE review. 3) Evaluations should be documented in sufficient detail such that a knowledgeable individual reviewing the evaluation can identify the technical issues considered during the evaluation and the basis for the determinations. 4) The DOE will be notified of revisions to the authorization basis within 30 days of completing such revision. **3.3.3.2 Authorization Basis Amendments** An authorization basis revision that does not meet the conditions of subsection 3.3.3.1 paragraph a but meets the conditions of subsection 3.3.3.1 paragraph b may be implemented following approval by the DOE of a request to amend the authorization basis. A request to amend the authorization basis includes: 1) A description of the proposed revision 2) The reason for the proposed revision 3) A descriptions of the proposed implementation schedule for the revision and associated		and updating the FSAR. ISMP Section 3.3.3 concerns changes to the authorization basis and is cover in Safety Criterion 9.0-4. ~~None of the information contained in this section should be included in an implementing standard. This section on the control of the AB does not contain information on the SARs or periodic reporting.~~

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	change(s) 4) A copy of the authorization basis document or appropriate excerpt showing the proposed revision(s) 5) The safety evaluation for the proposed revision, as described in subsection 3.3.3.1 paragraphs a and b 6) If the revision involves the deletion or modification of a standard previously identified in the approved SRD, certification that the revised SRD will continue to identify a set of standards that will provide adequate safety, comply with all applicable laws and regulations, and conform to the top-level safety standards. **3.3.3.3 Decisions to Deviate from the Authorization Basis** During the design and construction phase prior to the Start of Cold-Testing, BNI may implement design changes that deviate from the Authorization Basis, provided that the provisions of paragraphs 1, 2, and 3 below are met. 1. Evaluation Prior to implementing a change that deviates from the Authorization Basis, BNI will perform an evaluation that determines that: a. The change complies with applicable laws and regulations, conforms with top-level safety standards, and satisfies the SRD Safety Criteria. b. The specific changes will not cause or threaten imminent danger to the workers, the public, or the environment from radiological, nuclear, or chemical hazards. 2. Documentation of Decision to Deviate from the Authorization Basis Documentation of BNI's decision to deviate from the Authorization Basis will be completed prior to implementing the change and will include the following: a. Identification of the specific changes to be implemented. b. Identification of the specific deviation(s) from the Authorization Basis. c. The evaluation described in paragraph 1. d. The signature of the manager(s) having the authority to approve changes that deviate from the Authorization Basis and the date such changes were approved. Such documentation will be readily retrievable and made available to the DOE upon request. 3. Time Limits and Notification a. During the construction phase, if prior approval by the DOE is required, BNI will notify the DOE (or his/her designee): 1) either verbally or in writing within 24 hours of the decision to deviate from the Authorization Basis (as recorded in 2.d above), and 2) in writing within 72 hours of the decision to deviate from the Authorization Basis (as recorded in paragraph 2.d above). This notification will include a copy of the documentation of the decision to deviate from the Authorization Basis described in paragraph 2 above. b. If prior approval by the DOE is not required, BNI will revise the Authorization Basis within 30 days following the decision to deviate from the Authorization Basis (as recorded in 2.d above) and notify the DOE within 30 days of completing such revision. c. If prior approval by the DOE is required, BNI will submit a request to amend the Authorization Basis to the DOE within 30 days following the decision to deviate from the		

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	Authorization Basis (as recorded in 2.d above). d. If provisions 3.b or 3.c are not met, or if approval of the amendment request is not obtained within 90 days of the decision to deviate from the Authorization Basis (as recorded in paragraph 2.d above): 1)All physical work associated with implementing the change that deviates from the Authorization Basis will stop, and 2)Corrective action will be initiated immediately, in accordance with paragraph 4 below. 4. Tracking and Resolution of Deviations from the Authorization Basis Changes that deviate from the Authorization Basis will be entered into the project's Corrective Action Management System (CAMS) as a condition adverse to quality, as described in the QAP. If the provisions of paragraph 3.d are invoked, the change will be recorded as a significant condition adverse to quality, and corrective action will be tracked to completion. CAMS records related to deviations from the AB will be uniquely identified to facilitate retrieval and generation of reports of the current status of such deviations upon request by the DOE. All revisions to the Authorization Basis associated with approved Authorization Basis deviations will be completed and all deficiencies documented under paragraph 2 will be resolved prior to Start of Cold-Testing.		
9.1-5 The SAR shall be maintained as a controlled document.	**8.0 Document Control and Maintenance** The quality assurance program (QAP) requirements for the Project records management system is provided in Section 4, "Documents and Records", of the QAP (BNFL 1998c). Documents are prepared, reviewed, approved, issued, and revised to prescribe processes, specify requirements, and establish design. Safety documents developed as a part of the safety management process controlled by the QAP include but are not limited to those identified in Table 8-1. The column "Records" lists the documents that address the items in the "Subject" column.	~~ASME NQA-1-1989 Section 3S-1, 7~~ ~~*Documentation and Records* (including associated supplements)~~ 24590-WTP-WAM-WA-01-001, Quality Assurance Manual, Policy Q06-1 – Documentation Control ~~&~~ ~~ASME NQA-1-1989 Section 17~~ ~~*Quality Assurance Records* (including associated supplements)~~ 24590-WTP-WAM-WA-01-001, Quality Assurance Manual, Policy Q17-1 – Quality Assurance Records	Safety Criterion 9.1-5 is explicit in the requirement for the contractor to maintain the SAR as a controlled document. Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the contractor QA be conducted in accordance with the DOE QA rule (10 CFR 830, Subpart A). Further in Contract Standard 7(e)(3)(ii)(B), ASME-NQA-1-1989 is identified. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. Hence use of the QAM~~ASME-NQA-1-1989~~ as the implementing standard for SC 9.1-5 is appropriate. ~~The DOE QA rule and ASME-~~

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			~~NQA-1-1989~~The QAM contains specific requirements for maintaining and controlling quality effecting records.
9.1-6 All responsibilities concerning the facility as identified in the approved SAR shall be carried out.	**3.2 Safety Responsibilities** BNI recognizes its corporate responsibility for safety during the design, construction, and commissioning (DC&C) phase of the project. Safety responsibilities are assigned to and by the Project Manager. The DC&C responsibilities are assigned to functional areas as shown in ISMP Tables 9-1 through 9-3. The roles assigned to organizations are provided in ISMP Chapter 11.0, "Organization Roles, Responsibilities, and Authorities". By these assignments, facility safety becomes a facility-wide responsibility with safety responsibilities identified for each functional area. In addition, by these assignments, assurance is provided that the roles identified in the Safety Analysis Reports are carried out. The Facility design is based on the design and operational experience gained at other nuclear and chemical facilities. As such, the potential hazards are well understood and lessons learned from earlier facilities are applied. Part of the preparatory work for hazard identification studies is to review safety and incident reports from similar operating facilities to ensure that credible events are considered at an early stage in the design. For the RPP-WTP, the operating histories of Sellafield's Vitrification Plants, Site Ion Exchange Plant, the Enhanced Actinide Removal Plant, the Savannah River Project, and the Hanford Site plants are reviewed to take account of their operating experience. In this way, lessons learned are incorporated into the RPP-WTP design and plans for operation. One such example is ion exchange resin stability. An explosion occurred at the Hanford Z-Plant because of contact between an organic ion exchange resin and strong nitric acid (HRC 1976). Because the RPP-WTP uses both organic ion exchange resins and strong nitric acid within its processes, careful consideration is being given to design of ion exchange resin handling and storage for the RPP-WTP. Section 4.4.1, "Comparison to the Hazards Analysis Results of Other Facilities", of the Hazard Analysis Report (HAR) provides a discussion of the application of lessons learned at other facilities to the Facility process hazards analysis (PHA) and design.	~~ASME NQA-1-1989 Section 1~~ ~~*Organization* (including associated supplements)~~ SRD Volume II, Appendix *, Ad Hoc Implementing Standard for Project Integrated Safety Management Approach	Safety Criterion 9.1-6 is explicit in the requirement for the Contractor to carry out all the responsibilities concerning the facility as identified in the approved SAR. Contract No. DE-AC27-01RV14136 Section C4(a) specifically requires the WTP "Contractor to be responsible for protecting human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional, construction, industrial and occupational hazards. The Contractor shall also provide safe and healthful working condition for employees, subcontractors and all other personnel under the Contractor's control who work in the general vicinity of the Contractor site and facilities." These requirements encompass Safety Criterion 9.1-6. Contract No. DE-AC27-01RV14136 Section C6, Standard 7(e)(3)(i) requires the Contractor QA be conducted in accordance with the DOE QA rule (10 CFR

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			830, Subpart A). Further in Contract Standard 7(3)(ii)(B), ASME-NQA-1-1989 is identified. BNI has chosen ASME-NQA-1-1989 as the implementing standard for the QA Program as documented in the Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001. ~~Hence use of ASME-NQA-1-1989 as the implementing standard for SC 9.1-6 is appropriate. The DOE QA rule and ASME-NQA-1-1989~~ Section 1.0 and 6.0 of the new proposed implementing standard, SRD Volume II, Appendix *, Ad Hoc Implementing Standard for Project Integrated Safety Management Approach contain specific requirements for documenting the organizational structure, functional responsibilities, levels of authority, and interfaces for those managing, performing and assessing the work. The QAM provides the details of the QA Program. Policy Q-01.1 of the QAM details the assignments of the roles and responsibilities for project management and will be maintained throughout the project life. This requirement will ensure that Safety Criterion 9.1-6 remains implemented on the project.

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9.1-7 The hazard analysis shall be submitted for approval as part of the SAR..	**9.0 Scheduling of Safety-Related Activities** This chapter provides the sequence of events for safety -related activities and deliverables for the design, fabrication and construction, commissioning, operation, and deactivation phases of the project. The safety-related activities to be conducted during these phases are also presented.	SRD Volume II, Appendix ~~*,~~ G, Ad Hoc Implementing Standard for Safety Analysis Reports	The new proposed ad hoc implementing standard, Appendix ~~*~~G, *Ad Hoc Implementing Standard for Safety Analysis Reports* is used as the guidance document for development of the SAR and identifies the hazard analysis as part of the SAR (section 3.3) and is the appropriate implementing standard for Safety Criterion 9.1-7. See ABCN-24590-01-00004, Revision ~~1~~2.