



U.S. Department of Energy
Office of River Protection

P.O. Box 450
Richland, Washington 99352

02-OSR-0232

Mr. Ron F. Naventi, Project Manager
Bechtel National, Inc.
3000 George Washington Way
Richland, Washington 99352

Dear Mr. Naventi:

CONTRACT NO. DE-AC27-01RV14136 - APPROVAL OF BECHTEL NATIONAL, INC (BNI) AUTHORIZATION BASIS CHANGE NOTICES 24590-WTP-ABCN-ESH-01-003, REVISION 0, 24590-WTP-ABCN-ESH-01-008, REVISION 1, 24590-WTP-ABCN-ESH-02-011, REVISION 0, 24590-WTP-ABCN-ESH-02-013, REVISION 0

- References:
1. BNI letter from A. R. Veirup to M. K. Barrett, ORP, "Transmittal for Approval: Authorization Basis Change Notice 24590-WTP-ABCN-ESH-01-003, Revision 0, Selection of Implementing Standard for Emergency Preparedness," CCN 023762, dated October 19, 2001.
 2. BNI letter from A. R. Veirup to M. K. Barrett, ORP, "Transmitted for Approval: Contract Deliverable "Revised Standards Approval Package – Update" and Revision 1 to Associated Authorization Basis Change Notices in Support of the SRD Standards Approval Package Submittal," CCN 028977, dated March 22, 2002.
 3. BNI letter from A. R. Veirup to M. K. Barrett, ORP, "Transmittal for Approval: Authorization Basis Change Notices 24590-WTP-ABCN-ESH-02-011, Codes and Standards Update/Anchorage Design for SC-III Facilities," CCN 032088, dated April 25, 2002.
 4. BNI letter from A. R. Veirup to M. K. Barrett, ORP, "Transmitted for Approval: Authorization Basis Change Notices 24590-WTP-ABCN-ESH-02-001, Revision 0, 24590-WTP-ABCN-ESH-02-010, Revision 0, 24590-WTP-ABCN-ESH-02-013, Revision 0, and 24590-WTP-ABCN-ESH-02-015, Revision 0," CCN 029186, dated May 1, 2002.
 5. BNI letter from A. R. Veirup to M. K. Barrett, ORP, "Closeout Comments on Low Activity Waste Construction Authorization Requests," CCN 033568, dated June 4, 2002.

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6. BNI letter from A. R. Veirup to M. K. Barrett, ORP, "Closeout Comments on Low Activity Waste Construction Authorization Requests," CCN 033570, dated June 11, 2002.

The U.S. Department of Energy, Office of River Protection, Office of Safety Regulation (OSR) has reviewed Authorization Basis Change Notices 24590-WTP-ABCN-ESH-01-003, Revision 0, 24590-WTP-ABCN-ESH-01-008, Revision 1, 24590-WTP-ABCN-ESH-02-011, Revision 0, and 24590-WTP-ABCN-ESH-02-013, Revision 0, submitted to OSR in References 1, 2, 3, and 4, respectively. Based upon the proposed changes called out below, the OSR has found these ABCNs acceptable.

- ABCN 24590-WTP-ABCN-ESH-01-003 - the Contractor has proposed changes to the Safety Requirements Document (SRD) consisting of the following: (1) rewrite SRD Safety Criteria 7.8-1; (2) delete SRD Safety Criteria 7.8-2 through 7.8-5; (3) replace the implementing standards for SRD Safety Criteria 3.2-1 and 7.1-4; (4) add a new section to the SRD for specific tailoring of DOE/RL-94-02; and (5) delete Table 3-1 in the Integrated Safety Management Plan (ISMP). In response to this ABCN, the OSR reviewers requested more information, sent to the Contractor as Questions Nos. ABCN-ESH-01-003-01 through -06. The Contractor adequately addressed OSR's concerns in its response to the questions, transmitted in Reference 5.
- ABCN 24590-WTP-ABCN-ESH-01-008 - the Contractor has proposed changes to the SRD and ISMP, consisting of the following: (1) revising the Implementing Codes and Standards sections for SRD Safety Criteria 7.4-1 through 7.4-5; and (2) updating ISMP Section 3.16.4. These changes pertain to Unreviewed Safety Questions (USQs). In response to this ABCN, the OSR reviewers requested more information, sent to the Contractor as Questions No. ABCN-ESH-01-008-01-01 through 04. The Contractor adequately addressed OSR's concerns in its response to the questions transmitted in Reference 6.
- ABCN 24590-WTP-ABCN-ESH-02-011 - the Contractor has proposed changes to the SRD to revise the year of American Society of Civil Engineers (ASCE) standard ASCE 7, "Minimum Design Loads for Buildings and Other Structures," from 1995 to the most current year 1998.
- ABCN 24590-WTP-ABCN-ESH-02-013 - the Contractor has proposed changes to revise the citation of the previously approved implementing standard, PCA Publication, EB080.01, as identified in the SRD Safety Criteria 4.1-2, 4.1-3, 4.1-4, 4.1-5, and Section 8.0 of SRD Appendix C, to American Concrete Institute (ACI) standard ACI 349-01, Appendix B. This ABCN changes the requirement of concrete anchorage design for SC-III structures from the PCA Publication to the provision of ACI 349-01, Appendix B.

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OSR has concluded that there is reasonable assurance that the health and safety of the public and the workers, and the environment will not be adversely affected by these changes, and they comply with applicable laws, regulations, and RPP-WTP contractual requirements. Attached is OSR's Safety Evaluation Report for the proposed changes.

As part of the amendment implementation process, please submit within 14 days of receipt of this letter the revised pages of the SRD, the ISMP, and the revision pages for each document, identifying all revisions to date. This amendment is effective immediately and shall be fully implemented within 30 days, i.e., the provisions of the amendment may be used immediately; within 30 days, controlled copies of the SRD, the ISMP and subordinate documents must be modified to reflect the changes associated with this amendment.

If you have any questions please contact Dr. Walter Pasciak of my staff, (509) 373-9189. Nothing in this letter should be construed as changing the Contract, DE-AC27-01RV14136. If, in my capacity as the Safety Regulation Official, I provide any direction that your company believes exceeds my authority or constitutes a change to the Contract, you will immediately notify the Contracting Officer and request clarification prior to complying with the direction.

Sincerely,

Robert C. Barr
Safety Regulation Official
Office of Safety Regulation

OSR:WJP

Attachment

**Safety Evaluation Report (SER)
Of Proposed Authorization Basis Change Notices
24590-WTP-ABCN-ESH-01-003, Revision 0
24590-WTP-ABCN-ESH-01-008, Revision 1
24590-WTP-ABCN-ESH-02-011, Revision 0
24590-WTP-ABCN-ESH-02-013, Revision 0
For the River Protection Project-Waste Treatment Plant (RPP-WTP)
By the Office of Safety Regulation**

1.0 INTRODUCTION

The River Protection Project-Waste Treatment Plant (RPP-WTP) authorization basis is the composite of information, provided by the Contractor in response to radiological, nuclear, and process safety requirements, that is the basis on which the Office of Safety Regulation (OSR) Safety Regulation Official grants permission to perform regulated activities. The authorization basis includes that information requested by the Contractor for inclusion in the authorization basis and subsequently accepted by OSR. The authorization basis for the RPP-WTP includes the Safety Requirements Document (SRD) and the Integrated Safety Management Plan (ISMP). The SRD contains the approved set of radiological, nuclear and process safety standards and requirements, which if implemented, provide adequate protection of workers, the public, and the environment against the hazards associated with the operation of the facility. The ISMP contains the safety management practices developed specifically for the project in the areas of design, construction, commissioning, and operation. By letters dated October 19, 2001, March 22, 2002, April 25, 2002 May 1, 2002, and June 22, 2002, Bechtel National, Inc., (the Contractor) submitted proposed changes to the SRD and the ISMP. This SER documents OSR's evaluation of the changes proposed by the Contractor contained in ABCNs: 24590-WTP-ABCN-ESH-01-003. Rev. 0, 24590-WTP-ABCN-ESH-01-008. Rev. 1, 24590-WTP-ABCN-ESH-02-011. Rev. 0, and 24590-WTP-ABCN-ESH-02-013. Rev. 0.

2.0 BACKGROUND

The SRD contains the set of radiological, nuclear, and process safety standards necessary to ensure adequate protection of the health and safety of workers, co-located workers, the public, and the environment from radiological, nuclear, and process hazards. The SRD standards are developed via an iterative process. Included in the development process is a continuing review of industry practices, particularly those referenced in the SRD, and review of the results of the process hazards and accident analyses as they evolve with the design of the facility for potential impacts on the SRD standards used to ensure protection of the public, workers, and the environment.

In ABCN 24590-WTP-ABCN-ESH-01-003, the Contractor has proposed changes to the SRD consisting of the following; (1) rewrite SRD Safety Criteria 7.8-1; (2) delete SRD Safety Criteria 7.8-2 through 7.8-5; (3) replace the Implementing Codes and Standards for SRD Safety Criteria

3.2-1 and 7.1-4; 4) add a new section to the SRD for specific tailoring of DOE/RL-94-02; 5) delete Table 3-1 in the ISMP.

In ABCN 24590-WTP-ABCN-ESH-01-008, the Contractor has proposed changes to the SRD and ISMP, consisting of the following: (1) revising the Implementing Codes and Standards sections for SRD Safety Criterion 7.4-1 through 7.4-5; and (2) updating ISMP Section 3.16.4. These changes pertain to Unreviewed Safety Questions (USQs).

In ABCN 24590-WTP-ABCN-ESH-02-011, the Contractor has proposed changes to the SRD to revise the year of the standard ASCE 7, “Minimum Design Loads for Buildings and Other Structures”, from 1995 to the most current year 1998. The SRD currently specifies the 1995 version. Consistent with the SRD development process to continuously review pertinent industry practices, this amendment revises the year of the standard ASCE 7 from 1995 to the most current year 1998. This change reflects the use of the most current design information from the industry for wind loads on building structures.

In ABCN 24590-WTP-ABCN-ESH-02-013, the Contractor has proposed changes to revise the citation of the previously approved implementing standard, PCAA Publication, EB080.01, as identified in the SRD Safety Criteria 4.1-2, 4.1-3, 4.1-4, 4.1-5, and Section 8.0 of SRD Appendix C, to ACI 349-01, Appendix B. This ABCN changes the requirement of concrete anchorage design for SC-III structures from the PCA Publication to the provision of ACI 349-01, Appendix B. This amendment reflects modifications to the SRD resulting from changes made to industry standards that form the basis of the SRD. Consistent with the SRD development process to continuously review pertinent industry practices, this amendment changes the requirement of concrete anchorage design for SC-III structures from the PCA Publication to the provision of ACI 349-01, Appendix B. This change reflects the use of the most current concrete anchorage design from the industry on building structures.

OSR’s evaluation of the proposed changes is documented in this Safety Evaluation Report (SER).

3.0 EVALUATION

3.1 24590-WTP-ABCN-ESH-01-003, Revision 0

Proposed change to SRD Safety Criterion 7.8-1:

Description of Change:

Revise the requirements of Safety Criterion 7.8-1 of the SRD to require BNI’s emergency management program to be documented in a facility-specific emergency plan that is an integral part of the Hanford Site Emergency Preparedness program, and to require the facility-specific plan, together with the *Hanford Site Emergency Management Plan*, (DOE/RL 94-02) shall address all of the 14 sections of DOE/RL-94-02.

Evaluation: (acceptable)

The proposed change complies with the requirements of Table S7-1, footnote 2, of the Contract that requires BNI to have an emergency response plan that complies with the requirements of DOE/RL 94-02. The proposed change is not a reduction in commitment or effectiveness and is acceptable. The revised Safety Criterion encompasses the requirements contained in the Safety Criterion before the change.

Proposed changes to SRD Safety Criteria 7.8-2 through 7.8-5:

Description of Change:

Delete Safety Criteria 7.8-2 through 7.8-5.

Evaluation: (acceptable)

The safety criteria being proposed for deletion are included in the proposed revised SC 7.8-1. Therefore, the proposed change is not a reduction in commitment or effectiveness and is acceptable.

Proposed changes to the implementing standards for SRD Safety Criteria 3.2-1 and 7.1-4:

Description of Change:

In SRD Safety Criterion 3.2-1 replace references to section 1.3, *Description of the Integrated Safety Management Plan*, and section 3.10, *Emergency Preparedness*, of the ISMP with a reference to DOE/RL 94-02, *Hanford Emergency Response Plan*. In SRD Safety Criterion 7.1-4, replace references to section 1.3.18, *Emergency Planning*, and section 3.10, *Emergency Preparedness*, of the ISMP with a reference to DOE/RL 94-02.

Evaluation: (Acceptable)

The criteria contained in the referenced sections of the ISMP are included in the requirements of DOE/RL 94-02. As noted in Section 3.1 above, the proposed revision to SC 7.8-1 would require adherence to DOE/RL 94-02. Therefore, there is no reduction in commitment or effectiveness and the proposed changes are acceptable.

Proposed addition of a new section to the SRD for specific tailoring of DOE/RL 94-02.

Description of Change:

BNI proposes to tailor DOE/RL 94-02 by deleting references to DOE Orders or Standards that are not imposed on BNI by contract, or committed to by BNI in an authorization basis document.

Evaluation: (acceptable)

The tailoring of DOE/RL 94-02 proposed by BNI consists of deleting references to DOE Orders in DOE/RL 94-02 that are not imposed on BNI by contract or committed to in an authorization basis document. The deletions would have little impact on the fundamental requirements for emergency preparedness because the requirements of the orders important to emergency response at the RPP-WTP are covered by Safety Criterion 7.8-1. Therefore, there is no reduction in commitment or effectiveness and the proposed tailoring is acceptable.

Proposed deletion of Table 3-1 in the ISMP and the sentence in section 3.10 that references Table 3-1:

Description of Change:

BNI proposes to delete Table 3-1 of the ISMP and the sentence in section 3.10 that references section 3.10.

Evaluation: (acceptable)

Table 3-1 of the ISMP is an “Outline and Content” for an emergency response plan. The outline is identical to the 14 sections of DOE/RL 94-02. As noted in section 3.1 above, the 14 sections of DOE/RL 94-02 are being proposed as the authorization bases for the emergency plan. Furthermore, Table S7-1 of the Contract requires BNI to meet the requirements of DOE/RL 94-02. Therefore, the deletion of the Table is not a reduction in commitment or effectiveness and the proposed tailoring is acceptable.

3.2 24590-WTP-ABCN-ESH-01-008, Revision 1

Proposed change to SRD Safety Criterion 7.4-1:

Description of Change:

Under the Implementing Codes and Standards section, delete, “24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan Section: 3.16.4 Unreviewed Safety Questions,” and add, “10 CFR 830.203, *Unreviewed Safety Question Process*, paragraph d(1), d(2), d(3)” and “10 CFR 830.3, *Definitions – Unreviewed Safety Question (USQ)*, paragraphs (1), (2) and (3).”

Evaluation: (acceptable)

The proposed revision is acceptable because 10 CFR 830.203 provides requirements to ensure an adequate WTP facility-specific USQ program is developed. 10 CFR 830.203 provides the implementation requirements for use in developing the USQ process for DOE facilities regulated under 10 CFR Part 830, *Nuclear Safety Management*. The specific citations are those that apply to Safety Criterion 7.4-1. The proposed change is not a reduction in commitment or effectiveness.

Proposed change to SRD Safety Criterion 7.4-2:

Description of Change:

Under the Implementing Codes and Standards section, delete, “24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan Section: 3.16.4 Unreviewed Safety Questions,” and add, “10 CFR 830.203, *Unreviewed Safety Question Process*, paragraph e,” “10 CFR 830.205, *Technical Safety Requirements*, paragraph a(2),” and “10 CFR 830.3, *Definitions – Unreviewed Safety Question (USQ)*, paragraphs (1), (2) and (3).”

Evaluation: (acceptable)

The proposed revision is acceptable because 10 CFR 830.203, paragraph e, and 10 CFR 830.205, paragraph a(2), provide requirements to ensure regulatory approval is obtained for situations determined to involve a USQ or a change in a technical safety requirement, prior to initiating the activity, if the initiation of the activity would itself involve a USQ, or implementing the proposed change. The specific citations are those that apply to Safety Criterion 7.4-2. The proposed change is not a reduction in commitment or effectiveness.

Proposed change to SRD Safety Criterion 7.4-3:

Description of Change:

Under the Implementing Codes and Standards section, delete, “24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan Section: 3.16.4 Unreviewed Safety Questions,” and add, “10 CFR 830.203, *Unreviewed Safety Question Process*, paragraphs (c) and (d)” and “10 CFR 830.3, *Definitions – Unreviewed Safety Question (USQ)*, paragraphs (1), (2) and (3).”

Evaluation: (acceptable)

The proposed revision is acceptable because 10 CFR 830.203 provides requirements to ensure an adequate WTP facility-specific USQ program is developed. 10 CFR 830.203 provides the implementation requirements for use in developing the USQ process for DOE facilities regulated under 10 CFR Part 830, *Nuclear Safety Management*. The specific citations are those that apply to Safety Criterion 7.4-3. The proposed change is not a reduction in commitment or effectiveness.

Proposed change to SRD Safety Criterion 7.4-4:

Description of Change:

Under the Implementing Codes and Standards section, delete, “24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan Section: 3.16.3 Incident Investigations,” and add, “10 CFR 830.203, *Unreviewed Safety Question Process*, paragraph d(4), g(1) g(2), g(3) and g(4)” and “10 CFR 830.3, *Definitions – Unreviewed Safety Question (USQ)*, paragraphs (1), (2) and (3).”

Evaluation: (acceptable)

The proposed revision is acceptable because 10 CFR 830.203 provides requirements to ensure an adequate WTP facility-specific USQ program is developed. 10 CFR 830.203 provides the implementation requirements for use in developing the USQ process for DOE facilities regulated under 10 CFR Part 830, *Nuclear Safety Management*. The specific citations are those that apply to Safety Criterion 7.4-3. The proposed change is not a reduction in commitment or effectiveness.

Proposed change to SRD Safety Criterion 7.4-5:

Description of Change:

Under the Implementing Codes and Standards section, delete, “24590-WTP-ISMP-ESH-01-001, Integrated Safety Management Plan Section: 3.3.3 Changes to Safety Documentation [and] Section: 3.16.4 Unreviewed Safety Questions,” and add, “10 CFR 830.202, *Safety Basis*,

paragraph (c)(1),” “10 CFR 830.203, *Unreviewed Safety Question Process*, paragraph f” and “10 CFR 830.3, *Definitions – Unreviewed Safety Question process.*”

Evaluation: (acceptable)

The proposed revision is acceptable because 10 CFR 830.203 provides requirements to ensure an adequate WTP facility-specific USQ program is developed. 10 CFR 830.203 provides the implementation requirements for use in developing the USQ process for DOE facilities regulated under 10 CFR Part 830, *Nuclear Safety Management*. The specific citations are those that apply to Safety Criterion 7.4-5. The proposed change is not a reduction in commitment or effectiveness.

Proposed changes to the ISMP Section 3.16.4, Unreviewed Safety Questions:

Description of Change:

The text is updated to (1) clarify that Unreviewed Safety Question (USQ) reviews are performed after Production Operations Authorization beginning with Hot Commissioning, (2) make ISMP text consistent with the SRD, and (3) clarify the Configuration Management Organization role in the USQ process.

Evaluation: (acceptable)

The proposed changes are acceptable because they provide clarifications that maintain consistency between the SRD and the ISMP. The proposed changes are also consistent with the Contract and 10 CFR 830.203, *Unreviewed Safety Question process*. The proposed changes do not reduce commitments in the authorization basis or effectiveness of any procedure, program, plan, or management process described in the authorization basis.

3.3 24590-WTP-ABCN-ESH-02-011, Revision 0

Proposed change to the following implementing standards in SRD-SC 4.1-2, 4.1-3, 4.1-4, and 4.1-5.

Description of Change:

The change is to revise the year of the American Society of Civil Engineers (ASCE) standard ASCE 7, “Minimum Design Loads for Buildings and Other Structures”, from 1995 to the most current year 1998. The SRD currently specifies the 1995 version.

Evaluation: (acceptable)

This change is acceptable because the current version of ASCE 7 incorporates the most current design information from the industry for wind loads, and reflects the most current industry practices for the evaluation of structures under wind loads. The 1998 version of ASCE 7 also has more accurate methodology in its consideration of wind loads on building structures than the 1995 version.

3.4 24590-WTP-ABCN-ESH-02-013, Revision 0

Proposed change to the following implementing standards in SRD-SC 4.1-2, 4.1-3, 4.1-4, 4.1-5 and Section 8.0 of SRD Appendix C.

Description of Change:

The proposed changes revise the citation of the previously approved implementing standard, PCA Publication, EB080.01, as identified in the SRD Safety Criteria 4.1-2, 4.1-3, 4.1-4, 4.1-5, and Section 8.0 of SRD Appendix C, to ACI 349-01, Appendix B. This ABCN changes the requirement of concrete anchorage design for SC-III structures from the PCA Publication to the provision of American Concrete Institute (ACI) publication ACI 349-01, Appendix B. This change reflects the use of the most current concrete anchorage design from the industry on building structures.

Evaluation: (acceptable)

This change is acceptable because the provisions of ACI 349-01, Appendix B, are more conservative than those described in the PCA Publication EB 080.01 for the design methodology of concrete anchorage for SC-III structures. It should be noted that ACI 349-01 is an implementing standard of concrete design for SC-I structures. Furthermore, this change will provide a consistent concrete anchorage design, fabrication, and supply methodology across the RPP-WTP facilities. It will also provide flexibility for interchanging components for concrete anchorage design among different seismic category facilities during construction. This change to the proposed standard is safe since ACI 340-01 provides at least the same measure of structural support and seismic safety as the PCA Publication EB 080.01.

4.0 CONCLUSION

Based on OSR's evaluation described above, the proposed changes are acceptable. There is reasonable assurance that the health and safety of the public and the workers, and the environment, will not be adversely affected by the proposed changes. Furthermore, the OSR has determined the proposed changes comply with applicable laws, regulations, and RPP-WTP contractual requirements.