



U.S. Department of Energy
Office of River Protection

P.O. Box 450
Richland, Washington 99352

04-ESQ-033

Mr. J. P. Henschel, Project Director
Bechtel National, Inc.
2435 Stevens Center
Richland, Washington 99352

Dear Mr. Henschel:

CONTRACT NO. DE-AC27-01RV14136 – ASSESSMENT REPORT A-04-ESQ-RPP-WTP-004 – ASSESSMENT OF THE PROCUREMENT, IDENTIFICATION AND CONTROL OF ITEMS AND PROCESSES, AND QUALITY CONTROL PROGRAMS PERFORMED MARCH 15 THROUGH 19, 2004

This letter forwards the results of the U.S. Department of Energy, Office of River Protection's, assessment of the Bechtel National, Inc. (BNI), Procurement Program, Identification and Control of Items and Processes Program (ICIP), and Quality Control Program for the Waste Treatment and Immobilization Plant during the period March 15 through 19, 2004. The assessment team (Team) identified one Finding (Attachment 1). The attached assessment report documents the assessment details (Attachment 2).

The Team found BNI programs continued to meet the requirements of the subject programs including adequate flow down of requirements from the Contract to the Contractor's vendors for the Pretreatment vessels and the Low Activity Waste Facility ventilation system. However, the Team identified a weakness in implementation of the ICIP program requirements. For ICIP receipt inspection, the Team found one example of Quality Level received materials not properly identified.

I look forward to reviewing the BNI submittal describing the actions you plan to implement to correct these problems. Please respond to the Finding as specified in Attachment 1.

If you have any questions, please contact me, or your staff may call Robert C. Barr, Director, Office of Environmental Safety and Quality, (509) 376-7851.

Sincerely,

Roy J. Schepens
Manager

ESQ:JLP

Attachments: (2)

cc w/attachs:
R. D. Davis, BNI
W. R. Spezialetti, BNI

J. M. Eller, PAC

NOTICE OF FINDING

Section C.6, Standards, Standard 7, Environment, Safety, Quality, and Health, item (e)(2)(iv) dated December 11, 2000, stated, "The Contractor shall prepare and submit to DOE for review and approval the radiological, nuclear, and process safety deliverables (Table C.5-1.1, Deliverables 7.1) defined in Table S7-1, Radiological, Nuclear, and Process Safety Deliverables." The Table S7-1 deliverable identifies the Quality Assurance (QA) Program.

The Contractor's QA Program was defined in 24590-WTP-QAM-QA-01-001, "Quality Assurance Manual," Revision 4b, dated November 26, 2003, (QAM) and Policy Q-08.1 Identification and Control of Items, required physical identification of items be used to the maximum extent possible and marking transferred to each part of an identified item when subdivided and not obliterated or hidden by surface treatment.

Contrary to these requirements, the assessors identified one example of insufficient identification of items. At the Marshaling Yard, the assessors found five of 15 viewed Quality Level-1 structural steel clips that had been receipt inspected and accepted whose identification markings were partially obliterated. This condition was an example of failure to identify items and will be followed as Finding, **A-04-ESQ-RPP-WTP-004-F01**.

The U.S. Department of Energy, Office of River Protection, Manager requests the Contractor provide, within 30 days of the date of the cover letter that transmitted this Notice, a reply to the Finding above. The reply should include: 1) admission or denial of the Finding; 2) the reason for the Finding, if admitted, and if denied, the reason why; 3) the corrective steps that have been taken and the results achieved; 4) the corrective steps that will be taken to avoid further Findings; and 5) the date when full compliance with the applicable commitments in your authorization bases will be achieved. Where good cause is shown, consideration will be given to extending the requested response time.

U.S. DEPARTMENT OF ENERGY
Office of River Protection

ASSESSMENT: Procurement Program, Identification and Control of Items and Processes Program, and Quality Control Program

REPORT NO.: A-04-ESQ-RPP-WTP-004

FACILITY: Bechtel National, Inc.

LOCATION: 2435 Stevens Center
Richland, Washington 99352

DATES: March 15 through 19, 2004

INSPECTORS: J. Polehn, Lead Assessor, Sr. Regulatory Technical Advisor
J. Orchard, Deputy Lead Assessor
R. Gilbert, Team Member
P. Hernandez, Team Member
T. Shrader, Team Member
K. Vadlamani, Team Member
M. Evarts, Team Member
W. Ang, Team Member

APPROVED BY: P. Carier, Verification and Confirmation Official
Environmental Safety and Quality Division

Executive Summary

Introduction

From March 15 through 19, 2004, the U.S. Department of Energy, Office of River Protection (ORP), Office of Environmental Safety and Quality assessed the Waste Treatment and Immobilization Plant (WTP) Contractor's programs for procurement of materials and services, identification and control of items and processes, and Quality Control and their implementation. Included in the assessment was flow down of requirements from the Contract to the Contractor's suppliers (i.e., Subcontractors) for vessels and the Low Activity Waste (LAW) facility Heating, Ventilation, and Air Conditioning (HVAC) system.

Significant Issues and Conclusions

The assessors found the Contractor's programs for procurement of materials and services, identification and control of items and processes, and Quality Control continued to meet 24590-WTP-QAM-QA-01-001, "Quality Assurance Manual (QAM)," Revision 4b, dated November 26, 2003. The assessors also found adequate flow down of requirements from the Contract to the Subcontractors for vessels and the LAW facility HVAC system. However, the assessors also found weaknesses in the implementation of those programs as noted below.

- **Procurement of Materials and Services**

The Contractor failed to meet the requirements of the QAM for the procurement of HLW-MV-HOP-VSL-903, Submerged Bed Scrubber (SBS) Condensate Receiver Vessel, PWD-VSL-00033, Ultimate Overflow Vessel, and PWD-VSL-00043, High-Level Waste (HLW) Effluent Transfer Vessel. Prior to this assessment, the Contractor identified a failure to meet 24590-WTP-SRD-ESH-01-001-02, "Safety Requirements Document" volumetric nondestructive test requirements for HLW-MV-HOP-VSL-903. The Contractor also identified numerous nonconformances associated with the fabrication of the vessel not identified by the Subcontractor or by the Contractor's Supplier Quality Verification source inspectors. The Contractor initiated root cause evaluations for both conditions; the root cause evaluations were not complete at the time of this assessment. As a result, the assessors opened Assessment Follow-up Item A-04-ESQ-RPP-WTP-004-A01 to follow-up on the Contractor's performance of the missed nondestructive test examinations and other corrective actions resulting from the root cause evaluations.

For the LAW HVAC duct, the Contract Standard 3(b)(3) required the Contractor to prepare a Design Criteria Database (DCD) that contained design criteria extracted verbatim from the Contract cited Notice of Construction (NOC) source document. The Contractor was requested to identify in the DCD the NOC source document for the design criteria American Society of Mechanical Engineers AG-1, SA-41211 (d) live load requirement. It took the assistance of the Contractor's DCD Administrator to locate the information and the information was not provided until over a month after the assessment exit. Though no omissions in design were identified,

vulnerability exists in the usability of the DCD; this vulnerability was also identified and discussed in an earlier ORP assessment report (A-03-OSR-RPPWTP-019). Except for the two items identified above, Contractor and Subcontractor processes and practices related to design changes, requirements flow down, and information flow, for LAW HVAC duct work fabrication and installation met the requirements of the QAM. Contractor and Subcontractor staffs were found knowledgeable of the process and requirements.

- **Identification and Control of Items and Processes**

The assessors found one example of insufficient identification of items. At the Marshaling Yard, the assessors found five of 15 Quality Level-1 (QL) structural steel clips, MRR 09548, with identification markings partially obliterated. The clips were receipt inspected on November 4, 2003.

The condition noted above was identified as an example of failure to identify items as required by QAM Policy Q-08.1. The assessors identified this as Finding A-04-ESQ-RPP-WTP-004-F01. Except for this item, the Contractor's procedures and their implementation met the QAM requirements for Identification and Control of Items and Processes. The interviewed Contractor's staff was knowledgeable of the programs and procedures.

- **Quality Control**

The assessors focused on Quality Control for the SBS Condensate vessel and found the Contractor's Quality Control program met the QAM requirements and was being implemented. Specifically, the assessors reviewed whether the SBS Condensate vessel met the requirements of the engineering specifications and what actions were taken for identified nonconformances and how the nonconformances were dispositioned. Of the viewed 16 Nonconformance Reports (NCR) addressing the SBS Condensate vessel, all of the NCRs provided appropriate documentation and disposition. The Contractor and Subcontractor staff were adequately trained and qualified to perform Quality Control inspections. The interviewed Contractor's staff was knowledgeable of the Quality Control Program and procedures. No deficiencies were noted.

Assessment of the Implementation of the Waste Treatment and Immobilization Plant (WTP) Contractor's Programs for Procurement, Identification and Control of Items and Processes, and Quality Control

Assessment Purpose and Scope

During the period of March 15 through 19, 2004, the U.S. Department of Energy (DOE), Office of River Protection (ORP), performed an assessment of implementation of the WTP Contractor's, programs for procurement of materials and services, identification and control of items and processes, and Quality Control including flow down of requirements from the Contract to the Contractor's suppliers (i.e., Subcontractors) for vessels and the Low Activity Waste (LAW) facility Heating, Ventilation, and Air Conditioning (HVAC) system. The requirements for these programs were specified in 24590-WTP-QAM-QA 01-001, "Quality Assurance Manual" (QAM) and implementing procedures. These assessments were documented in Inspection Notes and have been maintained electronically. Copies of the Inspection Notes are available upon request. A second exit was provided to the Contractor on April 16, 2004, because the Contractor provided additional information on April 16, 2004, that permitted closure of two Findings that addressed the contents of the Design Criteria Database (DCD).

Significant Observations and Conclusions

Overall Conclusions

The assessors found the Contractor had programs for procurement of materials and services, identification and control of items and processes, and Quality Control that continued to meet 24590-WTP-QAM-QA-01-001, QAM, Revision 4b, dated November 26, 2003. The assessors also found adequate flow down of requirements from the Contract to the Contractor's suppliers (i.e., Subcontractors) for vessels and the LAW facility HVAC system. However, the assessors found weaknesses in the implementation of those programs as noted below.

Procurement of Materials and Services

The Contractor failed to meet the requirements of the QAM for the procurement of HLW-MV-HOP-VSL-903, Submerged Bed Scrubber (SBS) Condensate Receiver Vessel, PWD-VSL-00033, Ultimate Overflow Vessel, and PWD-VSL-00043, High-Level Waste (HLW) Effluent Transfer Vessel. Prior to this assessment, the Contractor self-identified a failure to meet 24590-WTP-SRD-ESH-01-001-02, "Safety Requirements Document" volumetric nondestructive test requirements for HLW-MV-HOP-VSL-903. The Contractor also self-identified numerous nonconformances associated with the fabrication of the vessel not identified by the Subcontractor or by the Contractor's Supplier Quality Verification source inspectors. The Contractor initiated root cause evaluations for both conditions. The root

cause evaluations were not complete at the time of this assessment. As a result, the assessors opened Assessment Follow-up Item A-04-ESQ-RPP-WTP-004-A01 to follow-up on the Contractor's performance of the missed nondestructive test examinations and other corrective actions resulting from the root cause evaluations. (Inspection Notes 004-01.)

- For the LAW HVAC duct flow down of requirements, the Contract Standard 3(b)(3) required the Contractor to prepare a DCD that contained design criteria extracted verbatim from the Contract cited Notice of Construction (NOC) source document. The Contractor was requested to identify in the DCD the NOC source document for the design criteria American Society of Mechanical Engineers AG-1, SA-41211 (d) live load requirement. Although the DCD was in compliance with contractual requirements in this instance, there is vulnerability in its application. To locate the NOC cited Code Compliance Matrix in the DCD, the DCD administrator had to be consulted and the information was not provided until over a month after the first assessment exit. During the assessment, design engineers were unable to locate the Code Compliance Matrix within the Database (i.e., the links to the NOC were incomplete). End users of the DCD, design engineers most notably, would require detailed knowledge of all of the requirements in advance of the DCD requirements search in order to utilize the DCD. The usefulness of the DCD as a tool to aid in the capture of all requirements is degraded without complete links between all requirements and the design elements. This vulnerability was discussed in an earlier ORP assessment report.¹ (Inspection Notes 004-02.)
- Contractor and Subcontractor processes and practices related to design changes, requirements flow down, and information flow, for LAW HVAC duct work fabrication met the requirements of the QAM. Contractor and Subcontractor staffs were knowledgeable of the process and requirements. (Inspection Notes 004-03.)

Identification and Control of Items and Processes

- The assessors found an example of insufficient identification of items. At the Marshaling Yard, the assessors found five of 15 Quality Level-1 (QL) structural steel clips, MRR 09548, with identification markings partially obliterated. The clips had been receipt inspected on November 4, 2003.

The condition noted above was an example of failure to identify nonconforming items as required by QAM Policy Q-08.1. The assessors identified this as Finding A-04-ESQ-RPP-WTP-004-F01. (Inspection Notes 004-04.)

- The assessor reviewed Measuring and Test Equipment (M&TE) procedures, M&TE equipment lists, databases, logs, calibration stickers and reports. The assessor inspected

¹ ORP letter from R. J. Schepens to J. P Henschel, BNI, "Inspection Report A-03-OSR-RPPWTP-019 – Design Process and As Low As Reasonably Achievable (ALARA) Design Inspection for the Period November 3-12, 2003," 03-OSR-0420, dated December 10, 2003, Design Requirements Sections.

M&TE storage areas, observed distribution of equipment, and interviewed employees. The Contractor calibrated, stored, and distributed M&TE in accordance with QAM Policy Q-12.1, Control of Measuring and Test Equipment. (Inspection Notes 004-04.)

Quality Control Inspections

- The assessors focused on Quality Control of the SBS Condensate vessel and found the Contractor's Quality Control program met the QAM requirements and was implemented. Specifically, the assessors reviewed whether the SBS Condensate vessel met the requirements of the engineering specifications and what actions were taken for identified nonconformances and how the nonconformances were dispositioned. Of the viewed 16 Nonconformance Reports addressing the SBS Condensate vessel, all of them provided appropriate documentation and disposition. The Contractor and Subcontractor staff were adequately trained and qualified to perform Quality Control inspections. The interviewed Contractor's staff was knowledgeable of the Quality Control Program and procedures. No deficiencies were noted. (Inspection Notes 004-06.)

(Closed) Assessment Follow-up Item A-03-OSR-RPP-WTP-009-A01

The Contractor was previously unable to find a Subcontractor for QL pipe supports and initiated a dedication procedure for procurement of commercial grade pipe supports and subsequent inspections and upgrade of the pipe support to QL-1. Assessment Follow-up Item (AFI) A-03-OSR-RPP-WTP-009-A01 identified the need to perform ORP inspections of the completed evaluation package to ascertain if appropriate critical attributes were identified for all important-to safety (ITS) applications of the pipe supports, and to ascertain if appropriate inspections and acceptance criteria were specified for the critical attributes of various types of pipe supports.

The assessors examined Commercial Grade Dedication Package 24590-WTP-CGD-C-02-003, Revision 3, for pipe supports. The package required sampling tests and inspections of critical attributes for pipe supports. The assessors discussed the dedication procedure and the Material Requisitions (MRs) with Contractor Quality Assurance (QA) personnel. The Contractor informed the assessors that Subcontractors for Quality Level (QL) pipe supports had been found. The Contractor stated no commercial grade pipe supports had been procured for QL application. The Contractor informed the assessors action had been initiated to cancel 24590-WTP-CGD-C-02-003, Revision 3. An e-mail dated March 19, 2004, "Cancellation of CGD for Pipe Supports," provided evidence cancellation of 24590-WTP-CGD-C-02-003, Revision 3, "Commercial Grade Item Evaluation," had been initiated. The Contractor informed the assessors that QL pipe supports would be procured using QL MRs and Purchase Orders. The assessors closed AFI A-03-OSR-RPP-WTP-009-A01. (Inspection Notes 004-05.)

List of Assessment Items Opened, Closed, and Discussed

Opened

A-04-ESQ-RPP-WTP-004-A01	Follow-up	Follow-up of Contractor corrective actions to resolve significant QL-1 vessel deficiencies item and nondestructive test requirements (Inspection Notes 004-01.)
A-04-ESQ-RPP-WTP-004-F01	Finding	One example of failure to follow procedures for identification of items. (Inspection Notes 004-04.)

Closed

A-03-OSR-RPP-WTP-009-A01	Follow-up	Follow-up of Contractor actions for commercial grade dedication of ITS pipe supports. (Inspection Notes 004-05.)
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Discussed

None.