



U.S. Department of Energy
Office of River Protection

P.O. Box 450
Richland, Washington 99352

03-AMWTP-119

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

Dear Mr. Henschel:

CONTRACT NO. DE-AC27-01RV14136 – INSPECTION REPORT A-03-AMWTP-RPPWTP-004 – ON-LOCATION INSPECTION REPORT FOR THE PERIOD AUGUST 22, 2003, THROUGH SEPTEMBER 25, 2003

This letter forwards the results of the U.S. Department of Energy, Office of River Protection (ORP) review of Bechtel National, Inc. (BNI) construction performance of the Waste Treatment and Immobilization Plant for the period August 22 through September 25, 2003. No Findings were identified. A summary of the inspection is documented in the enclosed inspection report.

Construction performance was good during this inspection period. Concrete placements and structural steel installations were being performed in accordance with the requirements of the design and applicable standards. Industrial health and safety performance continued to indicate BNI's strong emphases on worker safety.

If you have any questions, please contact me, or your staff may call Mike Thomas, Operations and Commissioning Team Leader, (509) 373-5014.

Sincerely,

Roy J. Schepens
Manager

AMWTP:JWM

Enclosure

cc w/encl:
W. R. Spezialetti, BNI
G. Shell, BNI

U.S. DEPARTMENT OF ENERGY
Office of River Protection

INSPECTION: On-location Inspection Report for the Period August 22, 2003 through September 25, 2003

REPORT NO.: A-03-AMWTP-RPPWTP-004

FACILITY: Bechtel National, Inc.

LOCATION: 2435 Stevens Center
Richland, Washington 99352

DATES: August 22 through September 25, 2003

INSPECTORS: J. McCormick-Barger, Sr. Regulatory Technical Advisor, Inspection Lead
B. Harkins, ORP Facility Representative
S. Pfaff, ORP Facility Representative
M. Evarts, Team Member
J. Mohatt, Team Member
D. Wallace, Team Member
D. Frey, Team Member

APPROVED BY: M. Thomas, Operations and Commissioning Team Leader
Office of the Assistant Manager for Waste Treatment and Immobilization
Plant (AMWTP)

EXECUTIVE SUMMARY

Introduction

During the period August 22, 2003, through September 25, 2003, the U.S. Department of Energy, Office of River Protection (ORP) Office of the Assistant Manager for Waste Treatment and Immobilization Plant (AMWTP) conducted inspections of important-to-safety (ITS) and non-ITS (Balance-of Plant) activities of the construction of the Waste Treatment and Immobilization Plant (WTP). These inspections were documented on inspection notes and maintained electronically. There were 59 inspections of various construction activities summarized below. Copies of the inspection notes are available upon request. The inspection construction activities covered the following areas:

- Forms, reinforcement steel, and embedded steel items and associated concrete placements
- Hydrostatic testing of installed piping
- Balance-of-Plant construction activities
- Industrial Health and Safety (IH&S)
- Electrical equipment, including conduit and race way, installations
- Structural steel installations
- Structural steel coating installation
- Grillage and stainless steel liner installations
- Concrete core drilling to investigate potential subsidence
- Previously identified Assessment Follow-up Items

Significant Observations and Conclusion

- Reinforcement steel installations and other attributes associated with the concrete placements for the Low Activity Waste (LAW) Facility, High Level Waste (HLW) Facility, Pretreatment Facility (PTF), and Balance-of-Plant (BOP) were performed, with one exception, in accordance with established procedures, specifications, and drawings. Qualified inspectors were performing Quality Control (QC) activities for this work, and QC activities were documented as required by procedures. The exception concerned a non-contact lab splice in the PTF Basemat 6 placement that exceeded the 6" maximum distance. This splice was corrected before the placement. (Inspection notes 004-01, 004-03, 004-08, 004-09, 004-10, 004-15, 004-19, 004-21, 004-24, 004-25, 004-29, 004-31,

004-34, 004-35, 004-42, 004-43, 004-44, 004-53, and 004-58)

- Rigid steel duct banks for Switchgear Building 91 were being installed in accordance with the design and 1999 National Electric Code (NEC) requirements. (Inspection Note 004-02)
- Several industrial health and safety inspections were conducted during the inspection period and included a general overview of site safety practices. These inspections also included focused reviews in the following areas: 1) Personnel air sampling of welders at the combo shop; 2) Hoisting and rigging plans for the PTF Receipt Vessel heavy lifts to move the vessels from the fabrication area to the west end of the PTF; 3) O/E vehicle maintenance facility ventilation testing; 4) Tower crane footwalk and landing upgrades; 5) Structural steel installations; 6) Pedestal crane operations; 7) Cooling tower water quality provisions; and 8) Switchgear building construction. The Contractor was complying with the requirements of ORP M 440.1-2, *Industrial Hygiene and Safety Regulatory Plan for the Waste Treatment Contractor*. (Inspection notes 004-13, 004-22, 004-48, and 004-49)
- The CB&I mobile offices did not meet National Electrical Code (NEC) requirements regarding the routing of electrical service conductors underneath the mobile buildings. Resolution of this NEC violation will be tracked as Assessment Follow-up Item A-03-AMWTP-RPPWTP-004-A01. (Inspection note 004-07)
- Conduit, grounding cables, splices, and grounding configuration for portions of the PTF basemat and Building 91 foundation beam were installed in accordance with design and 1999 NEC requirements. (Inspection notes 004-04, 004-18, 004-28, and 004-57)
- The coatings subcontractor was applying pre-approved coatings to specified LAW floor embeds to resolve deficiencies documented in NCR 24590-WTP-NCR-CON-02-147. Surface preparation was accepted by the subcontractor's QC. The subcontractor was working to approved procedures and paint applicators and the QC inspector were certified per project requirements. (Inspection note 004-05)
- Firewater System, Process Service Water, Demineralized Water, Raw Water, and Plant Cooling Water Supply hydrostatic tests were conducted in accordance with the appropriate specification and procedure. (Inspection notes 004-11, 004-14, 004-23, 004-33, 004-39, 004-40, 004-41, 004-46, and 005-56)
- Switchgear Building 87 cable tray and tray supports at the 9' elevation were being installed in accordance with the design and 1999 NEC requirements. (Inspection note 004-16)
- Switchgear Building 87 structural steel was being purchased, installed, and inspected in accordance with established requirements. (Inspection notes 004-26 and 004-47)

- PTF 1” rigid steel conduits for lighting circuits and power circuits at the PTF 7B basemat were installed in accordance with the design and 1999 NEC requirements. (Inspection notes 004-17 and 004-27)
- LAW building structural steel was being purchased and installed in accordance with the design and established requirements. (Inspection note 004-20)
- O&E Maintenance Shop 75KVA single phase transformer and two 120/240-volt panelboards were installed in accordance with the 2002 NEC. (Inspection note 004-30)
- LAW C3/C5 cell (-21’ elevation) grillage was installed and welded in accordance with the applicable design requirements. (Inspection note 004-32)
- An NEC violation was identified with the Apollo mobile office in that the power supplied to the office did not have a disconnect located within 30’ of the office as required by NEC Article 2002, Article 550.32. Resolution will be tracked as Assessment Follow-up Item A-03-AMWTP-RPPWTP-004-A02. (Inspection note 004-36)
- HLW core drilling to investigate potential subsidence was conducted in accordance with a Special Instruction and a Field Change Notice. A Field Change Request was issued to document the actual location of core drilling that deviated from the FCN specified location. The core holes will be filled as part of subsequent placements at the locations of the drilling. (Inspection note 004-37)
- Four Assessment Follow-up Items were closed during this assessment period. (Inspection notes 004-06, 004-12, 004-49 and 004-50)
- With the exception of deep punch marks on the shell of a CB&I fabricated tank, work performed on the tanks was being performed in accordance with established requirements. Follow-up on the Contractor’s action to address the punch marks will be tracked as Assessment Follow-up Item A-03-AMWTP-RPPWTP-004-A03. (Inspection note 004-45).
- The Contractor installed the Mini Power Center Rack (MPC-003) located south of Substation 7 in accordance with 2002 NEC. (Inspection note 004-52)

List of Assessment Items Opened, Closed, and Discussed

Opened

A-03-AMWTP-RPPWTP-004-A01	Assessment Follow-up Item	Follow-up on Contractor actions to resolve an NEC violation regarding CB&I mobile office service conductors passing under the structure. (Inspection note 004-07)
A-03-AMWTP-RPPWTP-004-A02	Assessment Follow-up Item	Follow-up on Contractor actions to address an NEC violation regarding not having a disconnect within 30' of the Apollo mobile office. (Inspection note 004-36)
A-03-AMWTP-RPPWTP-004-A03	Assessment Follow-up Item	Follow-up on Contractor actions to address a concern with deep punch marks on CB&I fabricated Feed Receipt Tanks. (Inspection note 004-45)

Closed

A-03-OSR-RPPWTP-006-A02	Assessment Follow-up Item	Follow-up on Contractor actions to address IH&S concerns associated with the Potain Tower Crane. (Inspection note 004-49)
A-03-OSR-RPPWTP-010-A03	Assessment Follow-up Item	Follow-up on Contractor actions to address issues regarding ladder ways associated with tower crane transition points. (Inspection note 004-06)
A-03-AMWTP-RPPWTP-001-A07	Assessment Follow-up Item	Follow-up on Contractor actions pertaining to Article 422.31(B) requirement for the Mask Wash Trailer T42 circuit breaker feeding the water heater to be capable of being locked in the open position. (Inspection note 004-50)
A-03-AMWTP-RPPWTP-003-A06	Assessment Follow-up Item	Follow-up on Contractor actions to address issue regarding incorrect grounding wire associated with the 400-amp disconnect at the O & E Maintenance Shop.

(Inspection note 004-12)

Partial Closure

A-03-OSR-RPPWTP-006-A07	Assessment Follow-up Item	Follow-up on Contractor actions to address issues regarding labeling of manholes covers. (Inspection note 004-38)
A-03-AMWTP-RPPWTP-003-A01	Assessment Follow-up Item	Follow-up on Contractor actions to address issues pertaining to Article 400.3 & 400.6 for flexible cables installed outdoors to be evaluated for the conditions (Item 1). (Inspection note 004-51)
A-03-AMWTP-RPPWTP-003-A02	Assessment Follow-up Item	Follow-up on Contractor actions to address CB&I NEC violations at the north center site of the PTF (Items 3, 10, 11, 12). (Inspection note 004-55)
A-03-AMWTP-RPPWTP-002-A04	Assessment Follow-up Item	Follow-up on Contractor actions to address Potain Tower Crane working clearances for control panels (Item 1). (Inspection note 004-59)