



U.S. Department of Energy
Office of River Protection

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

08-WTP-005

JAN 10 2008

Mr. L. J. Simmons, Project Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Dear Mr. Simmons:

CONTRACT NO. DE-AC27-01RV14136 – SURVEILLANCE REPORT S-07-WCD-RPPWTP-004 – THE WASTE TREATMENT AND IMMOBILIZATION PLANT (WTP) CONSTRUCTION OVERSIGHT AND ASSURANCE DIVISION (WCD) CALENDAR YEAR 2007 FOURTH QUARTER CONSTRUCTION SURVEILLANCE SUMMARY REPORT

This letter forwards the results of the U.S. Department of Energy, Office of River Protection WCD review of Bechtel National, Inc.'s (BNI) construction performance of the WTP for the period October 1, 2007 through December 31, 2007. A summary of the surveillance activities is documented in the attached report S-07-AMWTP-RPPWTP-004.

During this surveillance period, 11 Findings were identified. Four of the Findings were classified as non-cited and do not require written responses. Seven of the Findings require written responses and include: 1) Use of a split bolt to splice a temporary power grounding conductor when not allowed by the National Electrical Code (NEC) (a repeat Finding); 2) Installation of the wrong size conductors in a temporary power installation; 3) Failure to maintain NEC required working clearance in front of a permanent plant lighting panel; 4) Energizing a temporary power installation without addressing previously identified deficiencies; 5) Numerous errors in "as-built" field sketches after performing modifications to T52 Warehouse panelboard installations; 6) Failure to maintain NEC required clearance above a T52 Warehouse Main Distribution Panel; and 7) Approving a Supplier Deviation Disposition Request allowing the use of an alternate welding code without addressing Safety Requirements Document provisions. Section III of the attached report list these Findings and contain instructions for responding.

This letter is not considered to constitute a change to the Contract. In the event BNI disagrees with this interpretation, it must immediately notify the Contracting Officer orally, and otherwise comply with the requirements of the Contract clause entitled "52.243-7 Notification of Changes."

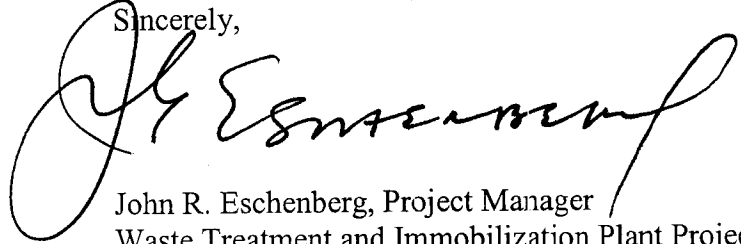
Mr. L. J. Simmons
08-WTP-005

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JAN 10 2008

If you have any questions, please contact me, (509) 376-3681.

Sincerely,

A handwritten signature in black ink, appearing to read "John R. Eschenberg". The signature is fluid and cursive, with a large initial "J" and "E".

John R. Eschenberg, Project Manager
Waste Treatment and Immobilization Plant Project

WTP:JWM

Attachment

cc w/attach:
D. Jantosik, BNI
D. Kammenzind, BNI
BNI Correspondence

U.S. DEPARTMENT OF ENERGY
Office of River Protection

INSPECTION: WCD CY 2007 Fourth Quarter Construction Surveillance Summary
Report

REPORT NO.: S-07-WCD-RPPWTP-004

FACILITY: Bechtel National, Inc. (BNI)

LOCATION: 2435 Stevens Center Place
Richland, Washington 99354

DATES: October 1, 2007 through December 31, 2007

INSPECTORS: J. Barger, Acceptance Inspector
B. Harkins, Facility Representative
E. Enloe, Site Inspector
M. Evarts, Site Inspector
W. Meloy, Site Inspector
R. Taylor, Site Inspector
D. Wallace, Site Inspector

APPROVED BY: J. Bruggeman, Acting Division Director
WTP Construction Oversight and Assurance Division (WCD)

WCD CY 2007 FOURTH QUARTER CONSTRUCTION SURVEILLANCE SUMMARY REPORT

I. Introduction

During the period October 1, 2007, through December 31, 2007, the U.S. Department of Energy (DOE), Office of River Protection (ORP), Waste Treatment and Immobilization Plant Project (WTP) Construction Oversight and Assurance Division (WCD) conducted construction inspections of important-to-safety (ITS) and non-ITS (Balance-of-Plant) activities during the construction of the WTP. These inspections were documented in surveillance reports and maintained electronically. There were 89 inspections of various construction activities, summarized below. A summary listing of the surveillance reports is included at the end of this report, copies of which are available upon request.

II. Significant Observations and Conclusion

- On numerous occasions, the Contractor (Bechtel National, Inc. [BNI]) was observed performing adequate fit-up and welding using the correct materials and filler metal, and qualified welders and weld inspectors in accordance with applicable Contract and engineering requirements. (Surveillance Reports 004-01, 004-02, 004-04, 004-05, 004-07, 004-11, 004-12, 004-14, 004-17, 004-22, 004-23, 004-24, 004-25, 004-27, 004-29, 004-31, 004-32, 004-36, 004-37, 004-38, 004-42, 004-45, 004-53, 004-55, 004-56, 004-57, 004-58, 004-61, 004-62, 004-69, 004-70, 004-71, 004-72, 004-73, 004-74, 004-83, 004-84, 004-85, 004-86, 004-88, and 004-89)
- On a number of occasions, pre-concrete placement inspections including verification of forms, rebar, embedment, and electrical grounding installations were found to meet Contract and design requirements and/or BNI was observed batching, placing, consolidating, and testing concrete in accordance with applicable Contract and engineering requirements. (Surveillance Reports 004-03, 004-06, 004-19, 004-28, 004-63, 004-75, 004-76, 004-78, and 004-79)
- On numerous occasions, BNI was observed installing temporary electrical power at various locations throughout the WTP site. Although BNI had hired an electrical code inspector to inspect completed temporary power installations before energization and, as a result, substantial improvements in complying with the National Electrical Code (NEC) have been noted, WCD inspectors, on occasion, continue to identify NEC electrical code violations. Depending on the nature of these violations, WCD has either characterized them as Findings or Non-cited Findings. To be characterized as a Non-cited Finding, the Finding must not be willful, programmatic, or a repeat of a previously identified Finding, have minor safety or cost impact; and be tracked by BNI's corrective action program. BNI is not required to submit a written response to Non-cited Findings. Below is a summary of the Non-cited Findings identified during this inspection period. Cited Findings are described in Section III of this report and will require written responses. (Surveillance Reports 004-08, 004-15, 004-21, 004-34, 004-39, 004-41, and 004-49)

- For the temporary 480 volt power distribution panel W14-H2 and mini load center MLC-W14, both located on the southeast end of the electrical shop, the grounding electrode conductor was not installed from the structure's disconnecting means (main disconnect switch MDS-GDR-018) to the metal structures; it terminated on the unistrut rack. This deficiency was minor and is being tracked by BNI's corrective action program as **Non-cited Finding S-07-WCD-RPPWTP-004-N01** for failure to comply with Section C.7(f) of the Contract (requirement to comply with the NEC). (Surveillance Report 004-30)
- For the temporary power distribution panel PDP-022 located on the -21' elevation (southwest corner) of the Low-Activity Waste (LAW) Facility, BNI installed a #6 AWG grounding electrode conductor when a #4 AWG grounding electrode conductor was required by the NEC. BNI agreed and immediately replaced the #6 AWG grounding electrode conductor with a #4 AWG conductor thus resolving the issue. Because this issue was associated with temporary power and corrected prior to energizing (and therefore had no safety implications), this issue was characterized as **Non-cited Finding S-07-WCD-RPPWTP-004-N04** for trending purposes and was both opened and closed in this report. (Surveillance Report 004-33)
- NEC Article 240.5(A) requires flexible cord and flexible cable to be protected by an overcurrent device in accordance with their ampacity as specified in Table 400.5(A) and Table 400.5(B).

Disconnect DS-3 associated with general distribution rack GDR-048 located on the northeast corner of the Analytical Laboratory (LAB), had four conductor #10 SOW cable (three-phase) fused at 30-amps; the allowable ampacity for this cable is 25 amps, per Table 400.5(A). The Contractor agreed and immediately replaced the #10 SOW with a four conductor #8 type W cable. This resolves this issue.

Failure to comply with Section C.7(f) of the Contract (requirement to comply with NEC) is considered a Finding. However, because this issue was associated with temporary power and corrected prior to energizing (and therefore had no safety implications), this issue will be characterized as **Non-cited Finding S-07-WCD-RPPWTP-004-N08** for trending purposes and was both opened and closed in this report. (Surveillance Report 004-67)

- The BNI roofing subcontractor (Cobra) was installing factory foam metal wall panels and roofing materials at the LAB in accordance with applicable Contract and engineering requirements. (Surveillance Report 004-09)
- Caliber Inc. was performing and documenting independent Washington Administrative Code-required Dangerous Waste Permit effecting construction inspection activities at the WTP Project. This work was being performed in accordance with their subcontract requirements. (Surveillance Report 004-10)
- BNI had accomplished hydrostatic/pneumatic testing of double-contained 3-inch schedule 40 stainless steel pipe in accordance with American Society of Mechanical Engineers (ASME) B31.3, 1996, *Process Piping*, BNI procedure 24590-WTP-GPP-CON-3504,

Pressure Testing of Piping, Tubing and Components, and work package BPU0157.
(Surveillance Report 004-16)

- 4,604 field weld check lists (FWCL) were reviewed and found to have been completed in accordance with 24590-WTP-MN-CON-01-001-08-01, *WD-3 - Welding Documentation Requirements*. Sixteen FWCLs contained errors. These errors were associated with description of material being welded and radiographic test (RT) lot history control, but did not result in non-conservative welding or RT practices. BNI was informed of the errors and was in the process of correcting them. These records will be reviewed when corrected as part of the ASME B31.3 Owner Inspector process. (Surveillance Reports 004-18, 004-43, and 004-81)
- A review of installation activities was performed on the liner plate installation subcontractor (Chicago Bride and Iron) in preparation for liner plate installation at the LAB C3 and C5 Cells. During this review, welding procedures, welder certifications, material traceability (liner plate), and testing personnel qualifications were examined and found acceptable. (Surveillance Report 004-20)
- Survey records indicated BNI installed underground co-axial Radioactive Liquid Waste Disposal System (RLD) and High-Level Waste (HLW) Lag Storage and Feed Blending Process System (HLP) lines located between the Pretreatment (PT) and HLW Facilities in a manner that satisfied the specified line slope design criteria. (Surveillance Report 004-26)
- BNI had incorporated the requirements of recommended practice number SNT-TC-1A, 2001, into the visual weld inspection program for field welding engineering (NEPQ), and quality control (24590-WTP-GPP-CON-7106, *Quality Control Personnel Certification*). The requirements for eye examinations, testing results, and final scores (general, specific, and practical), and resumes indicating prior work experience and continuing education had been met. The acceptance documents were included in individual certification packages for each Level II visual welding inspector. (Surveillance Report 004-44)
- BNI had accomplished hydrostatic/pneumatic testing in accordance with established requirements in accordance with National Fire Protection Association (NFPA) and ASME codes and 24590-WTP-GPP-CON-3504. System tests conformed to established requirements regarding leakage and time at pressure. (Surveillance Report 004-47)
- As currently implemented, BNI's program for handling and material chemical contact requirements for stainless steel and nickel-based alloys warranted improvement. Proper use was noted in some cases, but not in others. Furthermore, pass-down of requirements appeared to be inconsistent. In some cases, work packages contained proper references but others did not. Design/installation documents did not always reference or apply the requirements for materials used in contact with stainless steels and nickel-based alloys.

Cloth-backed tapes were found to be in compliance but paper-backed and vinyl tapes were not. For example, paper tapes were found in contact with stainless steel weld heat-affected zones, and chemically indeterminate vinyl tapes were found in contact with stainless piping. Training or worker awareness also was lacking.

Although inspection personnel had received adequate training, craft personnel had not. Training records for inspection personnel showed the relevant specifications and/or

procedures as required reading. Training records for craft personnel, however, did not indicate that they had received adequate training.

Once brought to their attention, BNI took remedial action to address this issue, specifically issuing a Weld Quality Bulletin and a Project Issues Evaluation Report (PIER)/Condition Report to address these issues.

Failure to implement the procedural and engineering specification controls for materials used in contact with stainless steel and nickel-based alloys is a Finding against the Quality Assurance Manual (QAM) regarding the requirement to follow documented instructions and procedures (QAM Policy Q-05.1, Section 3.1.1). However, this issue had minor safety significance, was not programmatic or repetitive, and was entered into BNI's corrective action program for resolution. Therefore, this issue met the requirements to be classified as a **Non-cited Finding (S-07-WCD-RPPWTP-004-N06)**. (Surveillance Report 004-50)

- Leak tests performed for C1 and C2 ductwork at the +3-foot elevation in the LAW Facility were performed in accordance with approved procedures and that the testing performed verified that the ductwork conformed to the leakage criteria specified in contract documents. (Surveillance Reports 004-51 and 004-52)
- BNI's nondestructive examination (NDE) subcontractor shot two welds using the Computerized Radiography method and documented them acceptable in accordance with the approved procedure; BNI adequately reviewed the images for quality of the welds in accordance with ASME B31.3. (Surveillance Report 004-54)
- BNI's oversight of Lisega Company, a pipe support fabricator, was generally adequate. Supplier quality representative reports indicated adequate verification activities were ongoing at this supplier facility and issues raised by the Supplier or BNI were being documented and, with one exception described below, addressed in an acceptable manner. Lisega's quality program was acceptable for the fabrication processes used to fabricate these pipe supports.

One Finding (describe in Section III below) was identified regarding disposition of a supplier deviation disposition request where BNI allowed the supplier to use ASME Section III Subsection NF NDE requirements instead of the Safety Requirements Document (SRD) required American Welding Society (AWS) D1.1 requirements, or to submit and obtain an approved authorization basis change request to allow modification to the SRD. (Surveillance Report 004-64)

- BNI's oversight of James C. White Company, an instrument tubing support fabricator, was adequate. Supplier quality representative reports indicated adequate verification activities were ongoing at this supplier facility and issues raised by the supplier or BNI were being documented and addressed in an acceptable manner. James C. White Company's quality program was acceptable for the relatively simple fabrication processes used to fabricate and assemble these tubing supports. (Surveillance Report 004-65)
- The BNI coating subcontractor (FD Thomas, Inc.) applied and examined special protective coatings for concrete in accordance with specifications, drawings, and procedures. Materials were acceptable; application was in accordance with the approved procedure 24590-CM-HC2-AFPH-00001-17-01, *Field Preparation and Coating Work Procedures for*

Waste Treatment Plant Construction Site, and specification 24590-WTP-3PS-AFPS-T0004, *Field Applied Special Protective Coatings for Concrete Surfaces*; subcontractor's quality control performed the requisite checks and measurements; personnel training and qualification were appropriate, and inspection records provided evidence that the work had been performed correctly. (Surveillance Report 004-68)

- The fire resistant coating installation subcontractor (Clayton Coatings, Inc.) applied and examined thin film intumescent fire resistant material (TFIFRM) in accordance with the specifications and procedures. Materials were acceptable; application was in accordance with the specifications, standard, and procedures; subcontractor's quality control performed the requisite checks and measurements; subcontractor personnel had been trained and certified for the examination method used; and inspection records showed that the work had been performed correctly. (Surveillance Report 004-77)
- Five reviewed aboveground piping inspection records (APIR) had been completed in accordance with BNI's procedure 24590-WTP-GPP-CON-3503, *Aboveground Piping Installation*. (Surveillance Report 004-82)
- BNI's pipe installers had been trained to the aboveground piping installation and foreign material exclusion (FME) control procedure activities associated with the cleaning and cleanliness of aboveground field welds at the WTP. (Surveillance Report 004-87)

III. Summary of Findings Requiring Written Response

During performance of assessments of BNI's construction activities, conducted from October 1, 2007, through December 31, 2007, WCD identified the following Findings requiring a response:

1. Contract DE-AC27-01RV14136, dated December 11, 2000, between DOE and BNI, Section C.7(f) requires BNI to comply with NEC.

Article 250.64(C) requires the grounding electrode conductor to be installed in one continuous length without a splice or joint, unless spliced by an irreversible compression-type connector or by an exothermic weld.

The grounding electrode conductor routed from 240-volt panelboard (installed on F. D. Thomas' dust collector trailer) was not installed in one continuous length to the grounding electrode. Note: This same deficiency was identified (and corrected by BNI) in Inspection Note A-07-AMWTP-RPPWTP-003-74 when this same equipment was installed on the east side of the LAB.

BNI replaced the split-bolt with an irreversible compression-type connector. This resolved this issue.

Failure to comply with the NEC is considered a Finding. Although this issue was associated with temporary power and corrected prior to energizing (and therefore had no safety implications), it was repetitive in that the exact deficiency was identified as a Non-cited Finding (A-07-AMWTP-RPPWTP-003-N14) and corrected on September 12, 2007, indicating corrective actions were not adequate to prevent

recurrence. Therefore, to solicit written actions from BNI to prevent recurrence, this NEC violation is cited as **Finding S-07-AMWTP-RPPWTP-004-F02**. (Surveillance Report 004-13)

2. NEC Article 240.6(A) requires flexible cable to be protected by an overcurrent device in accordance with their ampacity as specified in Tables 400.5(A) and 400.5(B).

Article 240.21 requires the overcurrent protection to be provided in each ungrounded conductor and be located at the point where the conductors receive their supply except as specified in 240.21(A) through (G). No conductor supplied under the provision of 240.21(A) through (G) shall supply another conductor under those provisions, except through an overcurrent protective device meeting the requirements of 240.4.

Article 240.21(B)(5) allows “outside taps of unlimited length where the conductors are located outdoors of a building or structure, except at the point of load termination, and comply with all of the following:

- (1) The conductors are suitably protected from physical damage.
- (2) The conductors terminate at a single circuit breaker or a single set of fuses that limit the load to the ampacity of the conductors. This single overcurrent device shall be permitted to supply any number of additional overcurrent devices on its load side.
- (3) The overcurrent device for the conductors is an integral part of a disconnecting means or shall be located immediately adjacent thereto.
- (4) The disconnecting means for the conductors is installed at a readily accessible location complying with one of the following:
 - a. Outside of a building or structure
 - b. Inside, nearest the point of entrance of the conductors
 - c. Where installed in accordance with 230.6, nearest the point of entrance of the conductors.”

During installation of the 150 KVA generator JO-53-041 feeding temporary power to T05 – Craft Change House east of Pretreatment Facility, BNI installed a four-conductor size 250 kcmil, type W cable (rated 310-amps) from the terminal lugs at the generator (400-amp overcurrent protection) to the junction box and spliced to the permanent 250 kcmil single conductors (rated 255-amps) installed from the junction box to the 225-amp main in panelboard T05-H1. The type W cable did not meet the requirements of the above tap rule. It did not terminate in a single circuit breaker or a single set of fuses, but supplied the single 250 kcmil permanent conductors. Also, the type W cable was lying on the ground and, therefore, was not suitably protected from physical damage.

Also, Article 300.3(B) requires all conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors be contained within the same cable or cord, unless otherwise permitted in accordance with 300.3(B)(1) through (4).

Contrary to the above, BNI installed the equipment grounding conductor (routed from the generator to the junction box) exterior of the cable.

Failure to ensure temporary power installed at the Craft Change House complied with NEC is considered **Finding S-07-WCD-RPPWTP-004-F03**. (Surveillance Report 004-35)

3. While performing a “Temporary Modification Assessment,” the following NEC violation was observed at the Water Treatment Facility:

- Article 110-26(a)(2) requires the width of the working space in front of the electric equipment to be the width of the equipment or 30 inches, whichever is greater.

The Contractor recently installed structural steel supports for cable trays per drawing 24590-CM-POA-MPGP-00001-01-00200. This activity resulted in violating the above working space requirement for lighting panelboard LTE-PNL-86001A. The width of the working space between the steel support and transformer LTE-XFMR-86001 was less than the required 30 inches. Lighting panelboard LTE-PNL-86001A was previously installed by a subcontractor in 2005. The Contractor agreed with this violation and issued construction deficiency report 24590-WTP-CDR-CON-07-0428 to track this deficiency. Failure to ensure panelboards installed at the Water Treatment Facility complied with requirements specified in Section C.7(f) of the Contract (requirement to comply with NEC), is considered a **Finding (S-07-WCD-RPPWTP-004-F05)**. (Surveillance Report 004-46)

4. Also associated with the above Water Treatment Facility panelboards, BNI’s NEC electrical inspector documented two deficiencies in report 24590-BOF-FIR-CON-05-150 associated with the installation of the panelboards (main distribution panelboard LVE-PNL-86001). Although field inspection report 24590-BOF-FIR-CON-05-151 was reserved to track follow-up of the deficiencies, these deficiencies were not addressed prior to energization of the panelboard. BNI’s NEC electrical inspection process did not include an adequate mechanism for clearly identifying on equipment that deficiencies were identified and needed addressing before energization.

BNI subsequently installed temporary power to this panelboard and the NEC inspector approved energization of the panelboard with no open inspection items listed. However, report 24590-BOF-FIR-CON-05-151 remained open and the deficiencies had not been resolved. Since the NEC inspector did not refer in report 24590-WTP-EIP-CON-06-006 to the deficiencies identified in report 24590-BOF-FIR-CON-05-150, it is evident the NEC inspector failed to consider the deficiencies when this authorization was granted.

The Contractor’s process failed to ensure all deficiencies associated with main distribution panelboard LVE-PNL-86001 had either been corrected or considered before concluding electrical equipment was safe to energize. Failure to establish an adequate method of controlling/inspecting this electrical equipment at the Water Treatment Facility, to ensure compliance with design and codes and ensure it was safe to energize, is considered a Finding (against the Contractor’s QAM Policy Q-05.1, Section 3.1.1 regarding the requirement to have and use documented instructions to perform activities affecting quality) (**Finding S-07-WCD-RPPWTP-004-F07**). (Surveillance Report 004-46)

5. Procedure 24590-WTP-GPG-CON-3102A, paragraph 3.3.2.1 states: “Field sketches should be checked, prior to approval. The checker should verify that references are listed and are correct and verify that the drawing content is clear, is correct to appropriate design requirements, and is complete.”

Following completion of the T52 Warehouse outage and panelboard installations associated with changing the neutral conductors (routed from Substation 2 to T-52 Warehouse MDP) to equipment grounding conductors, electrical field sketches were revised to indicate the as-built condition; however, a number of significant errors were identified with these revised sketches.

Based on these errors, BNI did not perform an adequate check of the field sketches updated as a result of the work. This is an example of failure to follow procedures and is considered a **Finding (S-07-WCD-RPPWTP-004-F09)** against the Contractor’s QAM Policy Q-05.1, Section 3.1.1 regarding the requirement to have and use documented instructions to perform activities affecting quality. (Surveillance Report 004-66)

6. NEC Article 110-26(f)(1) requires the space equal to the width and depth of the equipment and extending from the floor to a height of 6 feet above the equipment or to the structural ceiling to be dedicated to the electrical installation. No piping, ducts, or equipment foreign to the electrical installation shall be located in this zone.

However, a fire water sprinkler pipe was installed directly above the main distribution panel T52-MDP (about 2 feet above the panel). Failure to ensure the main distribution panel at the T52 Warehouse complied with requirements specified in Section C.7(f) of the Contract (requirement to comply with NEC) is considered a **Finding (S-07-WCD-RPPWTP-004-F10)**. (Surveillance Report 004-66)

7. The SRD states in Safety Criterion 4.1-2 that American National Standards Institute (ANSI)/American Institute of Steel Construction (AISC) N690-94, *Specification for the Design, Fabrication, and Erection of Steel Safety-Related Structures for Nuclear Facilities and AISC M016-89, Manual for Steel Construction – Allowable Stress Design*, Ninth Edition, are to be used for construction and erection of steel structures and the two referencing codes reference AWS D1.1 as the inspection code.

Lisega Inc., a pipe support supplier, had written a supplier deviation disposition request (SDDR), 24590-WTP-SDDR-PROC-05-00059, for an exemption from the engineering specification to allow visual weld inspection to be performed in accordance with ASME Section III, subsection NF. BNI approved the SDDR without obtaining an authorization basis change to allow the use of the ASME Section III code. Failure to implement this requirement of the SRD or submit and obtain an approved authorization basis change request to allow modification to the SRD is considered a **Finding (S-07-WCD-RPPWTP-004-F11)**. (Surveillance Report 004-64)

The ORP Manager requests BNI to provide a response to the above Findings, within 30 days of receipt of this report. The response should include:

- The causes of the Findings;
- The corrective actions that have been taken to control or remove any adverse impact from noncompliant conditions (remedial actions) and the results achieved;
- The corrective actions that will be taken to identify the extent of condition, correct the causes(s), and prevent further Findings; and
- The date when all corrective actions will be completed, verified, and compliance to applicable requirements achieved.

IV. List of Assessment Items Opened, Closed, and Discussed

Opened

S-07-WCD-RPPWTP-004-N01	Non-cited Finding	Grounding electrode conductor was not installed from the structure's disconnecting means (main disconnect switch MDS-GDR-018) to the metal structures (Surveillance Report 004-30)
S-07-WCD-RPPWTP-004-F02	Finding	Grounding electrode conductor routed from 240-volt panelboard (installed on F. D. Thomas' dust collector trailer) was not installed in one continuous length to the grounding electrode. (Surveillance Report 004-13)
S-07-WCD-RPPWTP-004-F03	Finding	At the T05 – Craft Change House east of Pretreatment Facility, BNI installed the equipment grounding conductor (routed from the generator to the junction box) exterior of the cable. (Surveillance Report 004-35)
S-07-WCD-RPPWTP-004-N04	Non-cited Finding	Installed a #6 AWG grounding electrode conductor when a #4 AWG was required (LAW temporary power). (Surveillance Report 004-33)
S-07-WCD-RPPWTP-004-F05	Finding	Failure to ensure panelboards installed at the Water Treatment Facility complied with NEC panelboard working space requirements. (Surveillance Report 004-46)
S-07-WCD-RPPWTP-004-N06	Non-cited Finding	Failure to implement handling and chemical contact requirements for stainless steel and nickel-based alloys. (Surveillance Report 004-50)

Opened

S-07-WCD-RPPWTP-004-F07	Finding	Failure to establish an adequate method of controlling electrical equipment with deficiencies. (Surveillance Report 004-46)
S-07-WCD-RPPWTP-004-N08	Non-cited Finding	DS-3, associated with general distribution rack GDR-048 located on the northeast corner of the LAB, had wrong sized fuse. (Surveillance Report 004-67)
S-07-WCD-RPPWTP-004-F09	Finding	Failure to follow procedures regarding checking revised field sketches. (Surveillance Report 004-66)
S-07-WCD-RPPWTP-004-F10	Finding	Failure to control the space around panelboards. (Surveillance Report 04-66)
S-07-WCD-RPPWTP-004-F11	Finding	Failure to implement the AWS D1.1 requirement for pipe support NDE in the SRD or obtain an approved authorization basis change. (Surveillance Report 04-64)

Closed

A-06-AMWTP-RPPWTP-004-A02	Assessment Follow-up Item	Follow-up on Contractor actions to address electrical conductor sizing issues (Table-310-16 vs. 310-20.) (Inspection Note 003-49)
A-07-AMWTP-RPPWTP-002-F02a, b, c, & d	Finding	Four examples of failure to specify SRD required NDE and positive material identification (PMI) for certain “black cell” and otherwise inaccessible piping requiring in-service inspections. (Surveillance Report 004-48)
A-07-AMWTP-RPPWTP-002-A03	Assessment Follow-up Item	Follow-up on BNI action to address lugs on piping in the HLW Facility where the piping may have corrosion concerns and PMI inspections were not performed. (Surveillance Report 004-59)
A-07-AMWTP-RPPWTP-002-F08a, b, & c	Finding	Three examples of failure to fully implement BNI’s measuring and testing equipment (M&TE) program. (Surveillance Report 004-40)

Closed

A-07-AMWTP-RPPWTP-003-F01	Finding	Failure of BNI to comply with NEC requirements- Substation 2 to T-52 Warehouse main distribution panelboard missing grounding conductors (Surveillance Report 004-66).
A-07-AMWTP-RPPWTP-003-N04	Non-cited Finding	Wireways were misidentified and should have been installed as pull boxes requiring supports. (Surveillance Report 004-80)
A-07-AMWTP-RPPWTP-003-F11	Finding	Engineering had not performed an adequate extent-of-condition nor incorporated the correct overcurrent protection (circuit breaker trip rating) for multiple feeders based on the conductor ampacity rating per Table 310-16. (Surveillance Report 004-60)
S-07-WCD-RPPWTP-004-N04	Non-cited Finding	Installed a #6 AWG grounding electrode conductor when a #4 AWG was required (LAW temporary power). (Surveillance Report 004-33)
S-07-WCD-RPPWTP-004-N08	Non-cited Finding	DS-3, associated with general distribution rack GDR-048, located on the northeast corner of the LAB, had wrong sized fuse (Surveillance Report 004-67)

V. List of Surveillance Reports Issued During the Assessment Period

<u>Surveillance Report Number</u>	<u>Inspection Subject</u>
S-07-WCD-RPPWTP-004-01	Weld inspection LAW
S-07-WCD-RPPWTP-004-02	Weld inspection LAB
S-07-WCD-RPPWTP-004-03	Concrete preplacement BOF
S-07-WCD-RPPWTP-004-04	Weld inspection BOF
S-07-WCD-RPPWTP-004-05	Weld inspection LAW
S-07-WCD-RPPWTP-004-06	Concrete placement BOF
S-07-WCD-RPPWTP-004-07	Weld inspection BOF
S-07-WCD-RPPWTP-004-08	Electrical temporary power BOF
S-07-WCD-RPPWTP-004-09	Roofing LAB
S-07-WCD-RPPWTP-004-10	Caliber-IQRPE program
S-07-WCD-RPPWTP-004-11	Weld inspection LAW
S-07-WCD-RPPWTP-004-12	Weld inspection LAW
S-07-WCD-RPPWTP-004-13	Electrical temporary power BOF

S-07-WCD-RPPWTP-004-14	Weld inspection LAW
S-07-WCD-RPPWTP-004-15	Electrical temporary power BOF
S-07-WCD-RPPWTP-004-16	Pressure testing BOF
S-07-WCD-RPPWTP-004-17	Weld inspection BOF
S-07-WCD-RPPWTP-004-18	Final weld records review
S-07-WCD-RPPWTP-004-19	Concrete placement HLW
S-07-WCD-RPPWTP-004-20	SS liner plate installation LAB
S-07-WCD-RPPWTP-004-21	Electrical temporary power PTF
S-07-WCD-RPPWTP-004-22	Weld inspection LAW
S-07-WCD-RPPWTP-004-23	Weld inspection LAW
S-07-WCD-RPPWTP-004-24	Weld inspection LAW
S-07-WCD-RPPWTP-004-25	Weld inspection LAW
S-07-WCD-RPPWTP-004-26	Survey records coax piping
S-07-WCD-RPPWTP-004-27	Weld inspection LAW
S-07-WCD-RPPWTP-004-28	Concrete preplacement HLW
S-07-WCD-RPPWTP-004-29	Weld inspection BOF
S-07-WCD-RPPWTP-004-30	Electrical temporary power BOF
S-07-WCD-RPPWTP-004-31	Weld inspection BOF
S-07-WCD-RPPWTP-004-32	Weld inspection LAW
S-07-WCD-RPPWTP-004-33	Electrical temporary power LAW
S-07-WCD-RPPWTP-004-34	Electrical temporary power HLW
S-07-WCD-RPPWTP-004-35	Electrical temporary power BOF
S-07-WCD-RPPWTP-004-36	Weld inspection PTF
S-07-WCD-RPPWTP-004-37	Weld inspection BOF
S-07-WCD-RPPWTP-004-38	Weld inspection LAW
S-07-WCD-RPPWTP-004-39	Electrical temporary power BOF
S-07-WCD-RPPWTP-004-40	Closure 07-002-F08 a, b, c
S-07-WCD-RPPWTP-004-41	Electrical temporary power BOF
S-07-WCD-RPPWTP-004-42	Weld inspection LAW
S-07-WCD-RPPWTP-004-43	Final weld records review
S-07-WCD-RPPWTP-004-44	Weld inspector qualification review
S-07-WCD-RPPWTP-004-45	Weld inspection BOF
S-07-WCD-RPPWTP-004-46	Electrical inspection Water Treatment Facility
S-07-WCD-RPPWTP-004-47	Pressure testing BOF
S-07-WCD-RPPWTP-004-48	Closure of 07-002-F02a-d
S-07-WCD-RPPWTP-004-49	Electrical temporary power BOF
S-07-WCD-RPPWTP-004-50	Control of chemicals on SS piping
S-07-WCD-RPPWTP-004-51	C1 ductwork leak testing LAW
S-07-WCD-RPPWTP-004-52	C2 ductwork leak testing LAW
S-07-WCD-RPPWTP-004-53	Weld inspection LAW
S-07-WCD-RPPWTP-004-54	Computerized radiography review
S-07-WCD-RPPWTP-004-55	Weld inspection LAW
S-07-WCD-RPPWTP-004-56	Pour cave shield plate installation
S-07-WCD-RPPWTP-004-57	Weld inspection LAW
S-07-WCD-RPPWTP-004-58	Weld inspection LAB
S-07-WCD-RPPWTP-004-59	Closure of 07-002-A03

S-07-WCD-RPPWTP-004-60	Closure of 07-003-F11
S-07-WCD-RPPWTP-004-61	Weld inspection LAW
S-07-WCD-RPPWTP-004-62	Weld inspection LAW
S-07-WCD-RPPWTP-004-63	Concrete placement LAW
S-07-WCD-RPPWTP-004-64	Supplier inspection Lisega Inc
S-07-WCD-RPPWTP-004-65	Supplier inspection JC White Co
S-07-WCD-RPPWTP-004-66	Closure of 07-003-F01
S-07-WCD-RPPWTP-004-67	Electrical temporary power BOF
S-07-WCD-RPPWTP-004-68	FD Thomas Inc coating Inspection LAB
S-07-WCD-RPPWTP-004-69	Weld inspection LAW
S-07-WCD-RPPWTP-004-70	Weld inspection BOF
S-07-WCD-RPPWTP-004-71	Weld inspection LAW
S-07-WCD-RPPWTP-004-72	Weld inspection LAW
S-07-WCD-RPPWTP-004-73	Weld inspection LAW
S-07-WCD-RPPWTP-004-74	Weld inspection LAW
S-07-WCD-RPPWTP-004-75	Concrete preplacement LAW
S-07-WCD-RPPWTP-004-76	Concrete placement LAW
S-07-WCD-RPPWTP-004-77	Thin film intumescent fire coatings
S-07-WCD-RPPWTP-004-78	Concrete preplacement HLW
S-07-WCD-RPPWTP-004-79	Concrete placement HLW
S-07-WCD-RPPWTP-004-80	Closure of 07-003-N04
S-07-WCD-RPPWTP-004-81	Final weld records review
S-07-WCD-RPPWTP-004-82	Review of final APIRs
S-07-WCD-RPPWTP-004-83	Weld inspection LAW
S-07-WCD-RPPWTP-004-84	Weld inspection BOF
S-07-WCD-RPPWTP-004-85	Weld inspection LAW
S-07-WCD-RPPWTP-004-86	Weld inspection BOF
S-07-WCD-RPPWTP-004-87	Pipe installer training records
S-07-WCD-RPPWTP-004-88	Weld inspection LAW
S-07-WCD-RPPWTP-004-89	Weld inspection LAW