



Department of Energy
Washington, DC 20585

March 16, 2006

Mr. Jim Henschel
Project Director
Bechtel National Incorporated
2435 Stevens Center Place
Richland, WA 99354

EA-2006-03

Subject: Preliminary Notice of Violation and Proposed Civil Penalty - \$198,000

Dear Mr. Henschel:

This letter refers to the Department of Energy's (DOE) Office of Price-Anderson Enforcement's (OE) recent investigation at the Waste Treatment and Immobilization Plant (WTP). The issues at WTP involved (1) inconsistencies between design documents and the authorization basis, (2) deficiencies in black cell vessel non-destructive evaluation requirements, (3) quality level inconsistencies, and (4) structural steel design deficiencies.

An Investigation Summary Report describing the results of that investigation was issued to you on January 19, 2006. An Enforcement Conference was held on February 7, 2006, in Germantown, Maryland, with you and members of your staff to discuss these findings. An Enforcement Conference Summary Report is enclosed.

Based upon our evaluation of all the evidence in this matter, including information presented by you and members of your staff during the Enforcement Conference, DOE has concluded that violations of DOE's "Nuclear Safety Management Rule" 10 CFR 830 have occurred. The violations are described in the enclosed Preliminary Notice of Violation (PNOV).

Rather than addressing each of the four issues that are the subjects of this PNOV separately, we have chosen to look at the issues in aggregate due to the common weaknesses observed through the course of our investigation. These weaknesses in your operations and associated violations of 10 CFR 830 requirements are captured in sections I through VI of this PNOV and include (I) work process violations (adherence to procedures), (II) work process violations (inadequacy of procedures), (III) training violations, (IV) violations associated with verification and approval of work, (V) violations induced by schedule pressure, and (VI) a quality improvement violation. In accordance with the "General Statement of Enforcement Policy," 10 CFR 820, Appendix A, each of the above mentioned areas and discussed in the attached PNOV have been classified as a Severity Level II problem for an aggregate base civil penalty of \$330,000.

In evaluating the mitigation factors of self-identification/timely reporting and causal analysis/corrective actions, we first separately evaluated each of the four issues under consideration for the degree to which BNI aggressively identified and reported the issues and how extensive and comprehensive the BNI causal analyses and associated corrective actions were. The final determination of mitigation to be applied was based on an aggregate assessment with respect to all six areas of weakness described above. Based on this evaluation, we have granted 40 percent mitigation of the base civil penalty of \$330,000, thus reducing the assessed civil penalty to \$198,000. The bulk of this mitigation is granted for your causal analyses and corrective actions taken, with very limited mitigation being provided for your self-identification and reporting associated with two of the four issues under consideration. We have reviewed the revised BNI *Engineering Material Coordinator* Guide issued on November 11, 2005, and found that substantive improvements have been made. However, the guide still contains language which may continue to cause confusion on the part of users as to whether the guide truly provides guidance or whether it is to be viewed as a requirements document. Further, the use of a centralized issues tracking system would significantly enhance the BNI capability to capture quality effecting issues and to proactively identify issues before they have a significant impact on design, construction, and eventual operation of the WTP.

We agree with your conclusion that the underlying cause for the areas of weakness delineated in the Investigation Summary Report is a less than adequate nuclear safety and quality culture and are encouraged by your commitment to address this problem. It is our belief that if this broader issue is not fully addressed, similar weaknesses will likely manifest themselves in almost every other area of your operations. During your presentation at the Enforcement Conference, you indicated that your nuclear safety and quality culture improvement initiatives would be completed by June 2006. Recognizing that significant improvement in nuclear safety culture at WTP will take time, our office views these initiatives as a first step in a process to bring about the desired change. Given the importance that our office places on this initiative, we would like to meet with you and members of your staff sometime in June 2006 to discuss the progress you have made in this endeavor and to further examine what steps are necessary to bring this initiative to full fruition. At that meeting, you should be prepared to discuss compensatory actions taken and planned to assure that work can continue to be done safely while the acknowledged nuclear safety culture issues at WTP are addressed.

You are required to respond to this letter and to follow the instructions specified in the enclosed PNOV when preparing your response. Your response should document any additional specific actions taken to date. While recognizing the value of issue specific corrective actions taken by BNI to address problems with training and procedural adequacy, our office remains concerned that BNI has not adequately addressed the broader site-wide generic problems associated with both training and procedural adequacy. Thus, we are particularly interested in your corrective actions taken or planned to address this concern. Corrective actions will be tracked in the reports filed in the Noncompliance Tracking System (NTS). You should enter into the NTS (1) any additional actions you plan to take to prevent recurrence and (2) the target completion dates of such actions.

After reviewing your response to the PNOV, including your proposed corrective actions entered into the NTS, DOE will determine whether further enforcement action is necessary to ensure compliance with DOE nuclear safety requirements. DOE will continue to monitor completion of corrective actions until these matters are resolved.

Sincerely,



Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Enclosures:
Preliminary Notice of Violation
Enforcement Conference Summary
List of Attendees

cc: R. Lagdon, US
R. Shearer, EH-1
A. Patterson, EH-1
A. Rankin, EH-1
L. Young, EH-1
R. Day, EH-6
Docket Clerk, EH-6
B. Loesch, EH-31
J. Rispoli, EM-1
C. Anderson, EM-2
D. Chung, EM-24
L. Vaughan, EM PAAA Coordinator
R. Schepens, DOE-ORP
P. Carrier, DOE-ORP PAAA Coordinator
M. Cochrane, BNI PAAA Coordinator
R. Azzaro, DNFSB

**Preliminary Notice of Violation
and
Proposed Imposition of Civil Penalty**

Bechtel National Incorporated (BNI)
Waste Treatment and Immobilization Plant

EA-2006-03

As a result of a Department of Energy (DOE) evaluation of issues at the Waste Treatment and Immobilization Plant (WTP), multiple violations of DOE nuclear safety requirements were identified. The issues included (1) inconsistencies between design documents and the authorization basis, (2) deficiencies in black cell vessel non-destructive evaluation (NDE) requirements, (3) quality level inconsistencies, and (4) structural steel design deficiencies at the WTP. These issues span the time period May 2002 through August 2005.

In accordance with 10 CFR 820, Appendix A, "General Statement of Enforcement Policy," the violations are listed below. Citations specifically citing the quality assurance criteria of 10 CFR 830.122 represent a violation of 830.121(a), which requires compliance with those criteria.

I. Work Process Violations (Adherence to Procedures)

10 CFR 830.122(e)(1) requires that contractors perform work "consistent with technical standards, administrative controls, and other hazard controls adopted to meet regulatory or contract requirements, using approved instructions, procedures, or other appropriate means."

Contrary to the above, personnel working on the WTP project failed on multiple occasions to perform work consistent with requirements stated in facility specific procedures over the period May 2002 through August 2005. These failures to adhere to established procedures included the following:

- A. 24590-WTP-3DP-G06B-00001, *Material Requisitions*, Revision 9, section 3.3.3, states that, "The Transmittal form shall be signed by the cognizant APEM/DEM, and shall be provided to the PDC." However, approximately 1000 transmittals used to provide drawings to fabricators were signed by persons other than the Area Project

Engineering Manager/Discipline Engineering Manager (APEM/DEM), including personnel who are not on the List of Qualified Individuals. In some cases, engineering submitted transmittals directly to fabricators without sending copies to Project Document Control (PDC).

- B. 24590-WTP-3DP-G04B-00046, *Engineering Drawings*, Revision 9, section 3.5.1, states that when changes are made to design drawings, these changes “shall be clearly identified, such as by placing a cloud around the change and marking with revision triangles.” However, on May 17, 2005, it was discovered that two isometric drawings were revised that, among other revisions, changed the quality level from commercial material (CM) to quality level (QL) without placing a revision cloud around the change. A subsequent extent of condition review identified an additional 61 drawings with quality level changes without properly clouding the change.
- C. 24590-WTP-3DP-G04T-00905, *Determination of Quality Levels*, Revision 3, section 3.3, states that, “The quality levels identified by this procedure shall be controlled on the following set of project documents: P&IDs, V&IDs, CS&A Drawings, Single Line Drawings, Equipment list for mechanical handling components, Equipment list for other components (secondary source).” However, on August 19, 2004, it was discovered that six steam ejector quality levels were downgraded from QL to CM on the material datasheet before the applicable upper tiered Piping and Instrumentation Diagram (P&ID) was revised to incorporate the changes.
- D. 24590-WTP-3DP-G04T-00901, *Design Change Control*, Revision 4, section 3.2, states that, “Design changes must be incorporated through one of the processes described below. Any of the following, when approved and issued, authorize and incorporate a design change. Document revision [. . .]. Drawing Change Notice.” However, on August 23, 2004, it was discovered that two isometric drawings had incorporated valves in the design that were added on a redline P&ID, without an approved Drawing Change Notice and with pipelines on each side of the valve assigned different quality levels. These changes to the lower tiered isometric drawings were issued ahead of the redline changes being incorporated into the upper tiered P&ID.
- E. 24590-WTP-3DP-G04T-00905, *Determination of Quality Levels*, Revision 3, section 3.3, states, “The quality levels identified by this procedure shall be controlled on the following set of project documents: P&IDs, V&IDs, CS&A Drawings, Single Line Drawings, Equipment list for mechanical handling components, Equipment list for other components (secondary source).” However, on July 27, 2004, it was discovered that four steam ejectors and eight jet pump pairs were downgraded from QL-2 to CM on the associated datasheets before the applicable P&IDs were revised to incorporate the change.
- F. 24590-WTP-3DP-G04T-00905, *Determination of Quality Levels*, Revision 3, section 3.5.2, states that, “Engineering drawings that support construction or procurement shall have a QA program designator displayed in a prominent location on the

drawing. [. . .] Quality level transitions from one QL to another are shown in the body of the drawing in conjunction with notes or flags. The quality level will be verified during the review process.” However, on September 21, 2004, and through a subsequent extent of condition review, it was discovered that 11 P&IDs, four Ventilation and Instrumentation Diagrams (V&ID), and nine single line diagram (SLD) drawings had missing or inadequate quality level transition flags or notes.

- G. 24590-WTP-3DP-G04B-00049, *Engineering Specifications*, Revision 6, section 3.4, states that, “The originator, checker, and the reviewer (from the AB review team) are responsible for reviewing applicable AB documents to the Design Criteria Database for input requirements, to ensure that numeric revisions of specifications comply with AB.” 24590-WTP-SRD-ESH-01-001-02, *Safety Requirements Document Volume II*, Revision 1e, Appendix H, section 6.0, requires that vessels in inaccessible areas (black cell vessels) have “Full volumetric inspection of the welds in the primary confinement boundary of vessels [. . .] to ensure that weld defects are discovered and repaired.” However, on January 22, 2004, it was discovered that one black cell vessel had been received and installed, and approximately 70 additional vessels were being fabricated or in the procurement process that did not comply with the Appendix H volumetric weld inspection requirements.
- H. 24590-WTP-3DP-G04B-00046, *Engineering Drawings*, Revision 8, section 3.1.1 states that, “Preliminary calculations may not be used as the basis for information on approved design drawing, except when specifically documented and approved in accordance with 24590-WTP-3DP-G04B-00037.” 24590-WTP-3DP-G04B-00037, section 3.1 requires that calculations shall be approved prior to issuing affected design output documents (drawings, specifications, etc.) as final design documents (Revision 0 or above).” However, on August 2, 2005, BNI discovered that Lab Building structural steel drawings had been issued on November 15, 2004, and January 12, 2005, as final documents before the corresponding calculations were approved.

Collectively, these violations constitute a Severity Level II problem.
Civil Penalty - \$33,000

II. Work Process Violations (Inadequacy of Procedures)

10 CFR 830.122(e)(1) requires that contractors perform work “consistent with technical standards, administrative controls, and other hazard controls adopted to meet regulatory or contract requirements, using approved instructions, procedures, or other appropriate means.”

Contrary to the above, several of the BNI established procedures designed to assure that personnel meet regulatory or contract requirements were inadequate to fulfill this purpose over the period May 2002 through August 2005. These inadequacies in BNI established procedures included the following:

- A. 24590-WTP-GPG-ENG-062, *Engineering Material Coordinator*, Revision 0, dated August 8, 2003, describes the process used by BNI to enable pipe spool fabrication, vendor response identification, and pipe spool coordination. However, the guide makes no reference to the application of assigned pipe spool quality levels, which is viewed as a fundamental aspect of the sorting process used by Engineering in transmitting isometric drawings to suppliers.
- B. 24590-WTP-3DP-G04T-00905, *Determination of Quality Levels*, requires that quality levels be controlled on upper tier documents. However, the procedure does not provide sufficient detail on how this is to be accomplished. Specifically, there is no reference as to when the quality level of upper and lower tier documents must align.
- C. BNI addresses the use of redline changes to P&IDs and V&IDs through an instruction (*Redline General Instructions for P&IDs and V&IDs*) and a guide (*Red-Lining Process for Primary Documents*). Both documents require approval of redline changes before downstream work can proceed. The guide states further that no downstream design document shall be approved before the primary design document incorporates the change. The use of mandatory language in the guide led to confusion on the part of some BNI personnel.
- D. 24590-WTP-3DP-G04T-00905, *Determination of Quality Levels*, section 1, states that "Quality level designation is required **only** for Engineering documents that support construction or procurement for permanent RRP-WTP facilities." Engineers and checkers assumed that since P&ID, V&ID, and SLD drawings are not used for procurement or construction, additional detail was not necessary. However, section 3.3 of the same procedure clearly requires that "The quality levels identified by this procedure shall be controlled on the following set of project documents: P&IDs, V&IDs, CS&A Drawings, Single Line Drawings, Equipment list for mechanical handling components, Equipment list for other components (secondary source)."
- E. 24590-WTP-3DP-G04B-00046, *Engineering Drawings*, Revision 0, section 3.2.2, states that, "Before submitting the drawing for checking, the originator shall review the drawing for compliance with the project AB requirements in the Design Criteria Database (DCD) and verify that the DIM is completed correctly." In October 2002, a BNI management assessment, 24590-WTP-MAR-ESH-02-020, identified numerous instances in which approved design drawings were not consistent with the then current version of the authorization basis (AB). Subsequently, in March 2003, a BNI management assessment, 24590-WTP-MAR-ENS-03-005, identified numerous instances in which design specifications were not consistent with the AB. Procedures governing the process for assuring that numeric revision drawings comply with AB were not sufficiently clear and detailed, and some of the requirements were contained in guidance documents.
- F. BNI used an informal process to implement AB changes into the existing design. The process involved revising the DCD and sending out a letter to those with a need to know that a change has been made to the DCD. It was a BNI management

expectation that personnel would evaluate the impact that the change would have on existing design and take appropriate action. However, this value added process was not formalized by procedure.

Collectively, these violations constitute a Severity Level II problem.
Civil Penalty - \$33,000

III. Training Violations

10 CFR 830.122(e)(1) requires that contractors "Train and qualify personnel to be capable of performing their assigned work."

Contrary to the above, training and qualification deficiencies contributed to the BNI failure to maintain design drawings and specifications to be consistent with the AB, and for numerous errors in Lab building structural steel calculations over the period May 2002 through August 2005. These inadequacies in the BNI personnel training and qualification program included the following:

- A. 24590-WTP-3DP-G04B-00046, *Engineering Drawings*, Revision 0, section 3.2.2, states that, "Before submitting the drawing for checking, the originator shall review the drawing for compliance with the project AB requirements in the Design Criteria Database (DCD) and verify that the DIM is completed correctly." However, the procedure was not fully understood by those responsible for implementing requirements in the procedure. Mandatory reading of the procedure was the only training required. Drawing originators and checkers used a trial-and-error approach if they did not fully understand the procedural requirements. Supervisors provided little guidance on the use of the procedure since they also did not fully understand the requirements contained in the procedure themselves.
- B. Lab structural steel calculation errors were made by new BNI personnel, who did not have adequate knowledge of the application of the Lab building design codes and standards. The deficiencies are described in more detail below.
 1. Numerous instances of errors in calculations 24590-LAB-SSC-S15T-00004 and 24590-LAB-SSC-S15T-00002 were identified in the weld and bolted connections for the structure steel design of diagonal members in the roof trusses of the Lab building. Examples of these errors included the failure to properly combine forces to correctly calculate weld capacities, and failure to include all required forces in bolted truss connections.
 2. Structural Design Criteria, Section 6.2 required the Lab building structural steel braced frames be detailed in accordance with the Uniform Building Code (UBC), UBC-97. BNI discovered that design drawings and calculations did not conform

to the provisions of UBC-97. The calculations were determined to be correct; however, the calculations and drawing did not contain the level of detail specified by the UBC.

Collectively, these violations constitute a Severity Level II problem.
Civil Penalty - \$33,000

IV. Verification and Approval of Work Violations

10 CFR 830.122(f)(4) requires that contractors “Verify or validate the adequacy of design products using individuals or groups other than those who performed the work.”

10 CFR 830.122(f)(5) requires that contractors “Verify or validate work before approval and implementation of the design.”

Contrary to the above, BNI personnel responsible for verification and approval of work products frequently failed to adequately execute this responsibility over the period May 2002 through August 2005. These failures to verify and approve work products included the following:

- A. 24590-WTP-GPG-ENG-062, *Engineering Material Coordinator*, Revision 0, dated August 8, 2003, describes the process used by BNI to enable pipe spool fabrication, vendor response identification, and pipe spool coordination. It is the process described in this guide that Engineering uses to assure that pipe spool designated as QL>CM is sent to a supplier qualified to fabricate the pipe spool. However, the guide is silent on the need to verify transmittals prior to release to aid in assuring that transmittal errors are detected. As a result, errors in the transmittal process frequently occurred. Further, the transmittal process supervisor relied on downstream inspections and verifications to catch mistakes should they occur. However, downstream inspections and verifications that were performed were not intended to verify the quality level of the pipe spools.
- B. 24590-WTP-3DP-G04B-00046, *Engineering Drawings*, Revision 9, section 3.4.2, states that, “The ADS/DEM’s Staff Supervisor shall: Review design drawings, including preliminary design drawings and sketches, to be issued for completeness, technical adequacy, conformance with project design requirements, and constructability of design.” However, Engineering management responsible for approving datasheets did not check the datasheet quality levels to assure consistency with that recorded on the P&IDs.
- C. 24590-WTP-3DP-G04B-00046, *Engineering Drawings*, Revision 0, sections 3.2 and 3.3, describes requirements for the review and approval of design drawings. These requirements are in place to assure, in part, that design drawings are in compliance with the AB. For reasons previously discussed (e.g., inadequacy of procedures,

training) BNI controls designed to detect design drawing noncompliance with the AB during the review and approval cycle were ineffective.

Collectively, these violations constitute a Severity Level II problem.
Civil Penalty - \$33,000

V. Schedule Pressure Induced Violations

10 CFR 830.122(a)(2) requires contractors to “establish management processes, including planning, scheduling, and providing resources for the work.”

Contrary to the above, some BNI personnel emphasized meeting scheduled milestones over work quality in the time period May 2002 through August 2005. Examples include the following:

- A. The number and rate at which isometric drawings have been issued by Engineering significantly increased over the life of the project to date. In addition, the complexity of the task increased due to an increase in the number of suppliers, placing an increased burden on those assigned the responsibility to assure that transmittals were made to those suppliers qualified to perform the desired fabrication. Despite these increasing demands, BNI engineering management did not assure that adequate human resources were added to this quality effecting task, ultimately contributing to ten transmittals having QL>CM isometric drawings issued to CM suppliers over a 17 month period.
- B. The issuance of lower tier design documents knowing that quality levels conflicted with associated upper tier design documents was viewed as an accepted practice by the design team, including the originating engineer, the checker and reviewer. This behavior was driven by the desire to meet schedule commitments over that of verbatim compliance with procedural requirements.
- C. Due to time constraints in processing Authorization Basis Change Notices (ABCN) needed to revise the SRD to include the requirements contained in Appendix H, BNI chose to use a process which decreased the Vessel Group involvement in review and approval of the changes. If the ABCN had not been approved prior to expiration of the Decision to Deviate, a stoppage of further vessel procurement would have occurred. In addition, Engineering chose (based on expediency and budget) not to revise the vessel design and fabrication specification to include the new Appendix H requirements. Instead, they opted to include notes added to the vessel equipment assembly drawing. These notes indicated the requirement to use the specification QL-1 requirements for nondestructive evaluation of the vessel, thereby circumventing the AB reviews normally given documents that implement AB requirements.

Collectively, these violations constitute a Severity Level II problem.
Civil Penalty - \$33,000

VI. Quality Improvement Violation

10 CFR 830.122 (c) requires that the contractor "... (1) Establish and implement processes to detect and prevent quality problems. (2) Identify, control, and correct items, services, and processes that do not meet established requirements. (3) Identify the causes of problems and work to prevent recurrence as a part of correcting the problem."

Contrary to the above, BNI processes to identify causes and correct quality problems were not effectively established and implemented over the time period May 2002 through August 2005.

The DOE investigation into design drawings that were inconsistent with the AB identified recurrent weaknesses in adherence to administrative controls, indicating ineffectiveness in the BNI corrective action management process in preventing recurrence of these types of inconsistencies. A summary of the longstanding nature of this problem at WTP is provided below:

In October 2002, a widespread problem with design drawings that were inconsistent with the AB was identified by BNI in management assessment, 24590-WTP-MAR-ESH-02-020. The causal analysis, 24590-WTP-RPT-G-02-003 issued on January 7, 2003, identified two root causes as: (1) procedures did not contain necessary requirements and details; and (2) training had not been completed or was inadequate. The causal analysis also identified that a contributing cause was inadequate attention to detail by personnel in complying with the procedures. Corrective actions to address these causes were identified in the causal analysis report and in 24590-WTP-CAR-QA-02-252. All of the corrective actions were completed and verified by March 25, 2003.

In January 2003, a DOE Office of River Protection (DOE-ORP) Assessment Inspection Report, 03-OSR-0033, reported findings that (1) changes made by BNI to WTP design documents were not consistent with the AB, and (2) the required safety evaluation, per Section 3.3.3.1 of the Integrated Safety Management Plan, had not been performed. The Integrated Safety Management Plan allowed BNI to make certain changes to the AB without DOE approval as long as they performed a safety evaluation. In this assessment, DOE identified examples where BNI failed to perform the required safety evaluation prior to changing the AB, and examples where the safety evaluation was performed but contained inadequate detail.

In April 2003, a BNI management assessment, 24590-WTP-MAR-ENS-03-005, again discovered that design specifications were not consistent with the AB. The assessment identified a wide-spread problem with specifications that were issued for procurement that did not identify the correct version (revision or year) of the applicable design standard listed in the AB Safety Requirements Document (SRD). BNI performed a review of these deficiencies and determined that they occurred in the same time frame as the design drawing discrepancies and that the causes and corrective actions

identified in 24590-WTP-RPT-G-02-003 were applicable to these deficiencies. BNI determined that no additional root cause analysis or corrective actions were necessary.

In September 2003, DOE-ORP identified in, Management Assessment Report A-03-RPPWTP-018, that the BNI actions in response to the January 2003, DOE-ORP assessment findings had generally been effective in fixing the generic problems identified. This report also identified several new findings that identified cases in which the required safety evaluations supporting AB changes had not been performed as required by RL/REG-97-13.

In December 2003, BNI conducted a management assessment, 24590-WTP-MAR-ENS-03-030, of 30 Corrective Action Reports (CAR) issued in 2003 that identified AB deficiencies. An OE review of these CARs identified that deficiencies related to the consistency of design documents and the AB occurred in 30 percent of the CARs, and failure to perform the required safety evaluation occurred in 40 percent of the CARs. The BNI assessment looked at the assigned apparent root and contributing causes for each CAR to identify trends. This review identified that procedure violations occurred in 70 percent of the CARs, and unclear or deficient procedures were found in 40 percent of the CARs.

In January 2004, BNI discovered that one black cell vessel had been received and installed, and approximately 70 additional vessels were being fabricated or in the procurement process, that did not comply with the AB SRD Appendix H volumetric weld inspection requirements. BNI issued CAR 24590-WTP-CAR-QA-04-0-007 and issued an associated root cause analysis report, 24590-WTP-RPT-QA-04-0001, on April 15, 2004. The causal analysis determined that the root causes were (1) inadequate communications between the vessel group and the engineering group related to changes to the AB SRD requirements in Appendix H, and (2) that the vessel group had inadequate knowledge of the AB requirements. All corrective actions were completed in October 2004.

In September 2004, DOE-ORP issued AB Maintenance Implementation Assessment Report A-04-ESQ-RPPWTP-009. This assessment found that BNI had continued to improve their AB maintenance processes, and no programmatic deficiencies were discovered. This report concluded that, in general, procedures were consistent with requirements and were properly implemented. In addition this report stated that the contractor's staff was knowledgeable and generally well trained, and documentation was adequate. However, this assessment also identified findings in the areas of (1) failure to perform the required safety evaluation of design changes, (2) safety evaluations that did not comply with all of the RL/REG 97-13 requirements, and (3) safety evaluations signed by unqualified personnel.

In March 2005, BNI issued a report, 24590-WTP-RPT-ENG-05-002, that documented their historical analysis of deficiencies related to the consistency between design documents and the AB. This review started with the January 2003, and April 2004 causal analysis reports and included selected deficiencies and assessments through

early 2005. BNI concluded that the original causal analyses were adequate and no further causal analysis was required to address subsequent deficiencies. This conclusion was based in part upon several DOE-ORP assessments, discussed above, which concluded that improvements in the AB maintenance process had occurred, and BNI's determination that the more recent deficiencies did not represent similar programmatic problems to those that occurred in 2002 and early 2003. Two of the CARs that were included in this assessment identified problems with AB consistency with design documents, and three CARs identified failure to perform safety evaluations or Environmental and Nuclear Safety reviews.

In October 2005, BNI issued a management assessment report, 24590-WTP-MAR-ENG-05-0010, that documented a review of the effectiveness of AB maintenance corrective actions. This assessment reviewed a sample of safety related equipment and material that had been received at WTP. BNI discovered some discrepancies between the AB and design documents for the selected equipment but determined that these discrepancies did not require any physical design changes to the equipment. Ten CARs were issued as a result of this assessment with nine of these CARs identified as low significance and isolated deficiencies, and one CAR, QA-05-115, identified as high significance. This CAR identified a procedural inconsistency with the AB. BNI concluded that their corrective actions related to AB maintenance had been effective in reducing the number of deficiencies substantially from 2002 and early 2003.

In December 2005, DOE-ORP provided the results of their assessment, 05-ESQ-078, of 13 safety and quality issues that had occurred between 2003 and mid 2005 at WTP. This assessment concluded that BNI had good assessment, causal analysis, and corrective action management processes, but that implementation of corrective actions had not always been adequate. One example of inadequate corrective action implementation provided in this report was BNI's failure to correct significant problems identified in their safety culture. Specifically, safety culture problems not corrected included weak discipline in procedure compliance that involved managers as well as workers, ineffective training processes, inadequate procedures, and an inadequate questioning attitude.

This violation constitutes a Severity Level II problem.

Civil Penalty - \$33,000

Pursuant to the provisions of 10 CFR 820.24, BNI is hereby required within 30 days of the date of this Preliminary Notice of Violation (PNOV), to submit a written reply to the PNOV by overnight carrier to the Director, Office of Price-Anderson Enforcement, Attention: Office of the Docketing Clerk, EH-6, 270 Corporate Square Building, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-12190. Copies should also be sent to the Manager of the DOE Office of River Protection and to the Assistant Secretary for Environmental Management. This reply should be clearly marked as a "Reply to a Preliminary Notice of Violation" and should include the following for each violation: (1) admission or denial of the alleged violations; (2) any facts set forth herein which are viewed by BNI to not be correct; and (3) the reasons for

the violations if admitted, or if denied, the basis for the denial. Corrective actions that have been or will be taken to avoid further violations shall be delineated with target and completion dates in DOE's Noncompliance Tracking System. In the event the violations set forth in this PNOV are admitted, this Notice will constitute a Final Order in compliance with the requirements of 10 CFR 820.24.

Any request for remission or further mitigation of civil penalty must be accompanied by a substantive justification demonstrating extenuating circumstances or other reasons why the assessed penalty should not be paid in full. Within 30 days after the issuance of the PNOV and civil penalty, unless the violations are denied, or remission or additional mitigation is requested, BNI shall pay the civil penalty of \$198,000 imposed under section 234a of the Act by check, draft, or money order payable to the Treasurer of the United States (Account 891099) mailed to the Director, Office of Price-Anderson Enforcement, Attention: Office of the Docketing Clerk, at the above address. If BNI should fail to answer within the time specified, the contractor will be issued an order imposing the civil penalty. Should additional mitigation of the proposed civil penalty be requested, BNI should address the adjustment factors described in section IX of 10 CFR 820, Appendix A.



Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

Dated at Washington, DC,
This 16th day of March 2006

Enforcement Conference Summary

Inconsistencies between Design Documents and the Authorization Basis, Deficiencies in Black Cell Vessel Non-destructive Evaluation Requirements, Quality Level Inconsistencies, and Structural Steel Design Deficiencies at the Waste Treatment and Immobilization Plant (WTP)

On February 7, 2006, the Department of Energy's Office of Price-Anderson Enforcement (OE) held an Enforcement Conference with Bechtel National Incorporated (BNI), in Germantown Maryland. The meeting was called to discuss the facts, circumstances, and corrective actions pertaining to (1) inconsistencies between design documents and the authorization basis, (2) deficiencies in black cell vessel non-destructive evaluation requirements, (3) quality level inconsistencies, and (4) structural steel design deficiencies at the WTP. Mr. Stephen Sohinki, Director of the Office of Price-Anderson Enforcement, called the meeting to order. Mr. Sohinki stated that OE had convened the meeting to (1) address the issues discussed in the January 19, 2006, Investigation Summary Report, (2) discuss corrective actions taken to prevent recurrence, and (3) discuss mitigation factors for OE consideration. Information and key areas discussed at the conference are summarized below. Material provided by BNI during the conference was incorporated into the docket.

Mr. David Walker, BNI President, began the BNI presentation by introducing the BNI personnel present at the meeting to include a brief outline of their professional experience. Mr. Jim Henschel, Project Director, provided an overview of the WTP to include cleanup challenges, a broad description of the WTP, the waste treatment process to be used in processing the waste, and the challenges finding and retaining staff with nuclear culture experience. Mr Henschel stated that BNI concurs with the eight areas of weakness as identified in the OE Investigation Summary Report and further stated that the cause for these weaknesses is rooted in a less than adequate nuclear safety and quality culture at WTP. Mr. Henschel concluded his remarks by outlining the steps taken and those planned to enhance the nuclear safety culture at the WTP. Mr. Leon Lamm, Manager of Engineering, then addressed each of the four issues under consideration. For each of the four issues, Mr. Lamm provided a description of the condition, the cause of the problems, completed corrective actions, planned corrective actions, and results of corrective actions taken. In summary, Mr. Lamm stated that each of the four issues was self-identified by BNI, none of the issues involved operational events, corrective actions taken have resulted in improvements in each area, and additional cultural improvement is needed to

achieve the degree of excellence expected by BNI and DOE. Mr. Henschel then provided points for consideration with regard to enforcement discretion and penalty mitigation. Mr. Henschel summarized the BNI presentation and concluded that BNI is committed to an improvement strategy and achieving excellence in everything BNI does. Mr. Henschel committed to achieving a nuclear safety culture at a level seen at commercial nuclear power plants. Mr Walker then concluded the BNI presentation by stating that the design and construction of the WTP is a tremendous challenge and that he believes that BNI has the technical expertise to meet this challenge. Mr. Walker reiterated the BNI commitment to get the job done safely.

Mr. Sohinki stated that DOE would consider the information presented by BNI together with the entire record when DOE undertakes its enforcement deliberations. Mr. Sohinki then adjourned the conference.

February 7, 2006

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Enforcement Conference List of Attendees

DOE – Office of Price-Anderson Enforcement

Stephen M. Sohinki, Presiding Officer
Howard Wilchins, Senior Litigator
Richard Day, Enforcement Specialist
Phillip Wilhelm, Enforcement Specialist
Steven Hosford, OE Consultant

DOE – Office of Environmental Management

Gary DeLeon, EM-3.2

DOE – Office of River Protection

Roy Schepens, Manager
John Eschenberg, Project Director
Pat Carier, PAAA Coordinator

Bechtel National Incorporated

David Walker, President
Jim Henschel, Project Director
Leon Lamm, Manager of Engineering
Steve Lynch, Deputy Manager of Engineering
George Shell, Quality Assurance Manager
Michael Cochrane, PAAA Coordinator