



U.S. Department of Energy
Office of River Protection

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

MAY 11 2007

06-WTP-204

Mr. C. M. Albert, Project Manager
Bechtel National, Inc.
2435 Stevens Center Place
Richland, Washington 99354

Dear Mr. Albert:

CONTRACT NO. DE-AC27-01RV14136 – TRANSMITTAL OF THE U.S. DEPARTMENT OF ENERGY (DOE), OFFICE OF RIVER PROTECTION (ORP) DESIGN OVERSIGHT REPORT: WASTE TREATMENT AND IMMOBILIZATION PLANT (WTP) ENGINEERING DIVISION (WED) ASSESSMENT OF THE DESIGN/CONSTRUCTION COMPLETION PROCESS FOR SYSTEM TURNOVER (D-07-DESIGN-032)

ORP conducted a Design Oversight of the Design/Construction Completion Process for System Turnover from November 6 through 16, 2006, and is transmitting the resulting attached report.

The assessment team concluded Bechtel National, Inc. (BNI) did not always follow approved procedures for the closeout of their subcontracts which is considered a Finding for failure to follow the approved procedure (D-07-DESIGN-032-F01). The assessment team also concluded BNI does not provide a documented list of design inputs traceable to the completion of each system Design Verification Report (DVR) as required by the BNI Quality Assurance Manual. This is also considered a Finding (Finding D-06-Design-032-F04).

In addition, the assessment team had several follow-up items and observations involving the design program, which are documented in the report in Section 5.0 of this report and need to be addressed for clarification of the design completion process.

BNI should inform the WTP Project Manager of actions to be taken to address these issues and the dates for resolution within 30 days of receipt of this letter.

This letter is not considered to constitute a change to the Contract. In the event the Contractor 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."

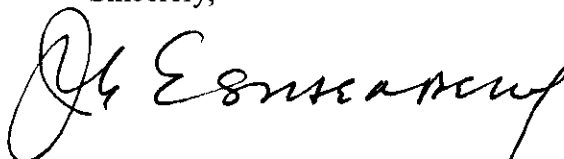
MAY 11 2007

Mr. C. M. Albert
06-WTP-204

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If you have any questions, please contact me, or your staff may contact Robert W. Griffith, Acting Director, WTP Project Engineering Division, (509) 372-2821.

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:JEA

Attachment

cc w/attach:
W. S. Elkins, BNI
M. Lewis, BNI
L. Lamm, BNI
D. Pisarcik, BNI
S. C. Lynch, BNI
D. Jantosik, BNI
BNI Correspondence

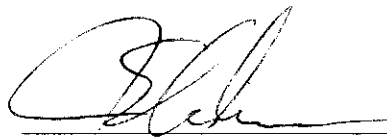
DOE ORP DESIGN OVERSIGHT REPORT

WTP ENGINEERING DIVISION ASSESSMENT OF THE DESIGN/CONSTRUCTION COMPLETION PROCESS FOR SYSTEM TURNOVER

November 06-16, 2006

Design Oversight: D-07-DESIGN-032

Team Lead:

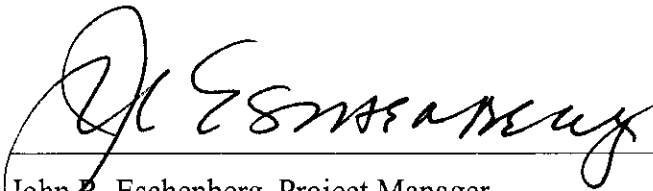


James E. Adams, WTP Design Oversight Engineer

Team Members:

Mark Ramsay, WTP Engineer
Rick Woods, ORP WTP Consultant

Approval:



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

EXECUTIVE SUMMARY

The U.S. Department of Energy (DOE), Office of River Protection (ORP) staff conducted a Design Oversight of the design/construction completion process for turnover of systems during the period of November 06 through 16, 2006, with the following specific objectives:

1. Review the design program to determine when the design of a system was considered completed sufficiently to comply with the Contract Standard 3 Section (b)(2).
2. Review the construction, procurement, and acceptance testing program to obtain definition of construction completion sufficient to comply with the Contract Standard 4 Sections (f)(1) and (f)(3), and thus trigger the turnover process.
3. Review the construction program to determine how configuration management is being maintained when the design is changed.
4. Sample the implementation of the procedures supporting these programs and processes for any system which has been declared design/construction complete.
5. Determine the effectiveness of the construction and design training for the processes involved in the design/construction complete process used for turnover of systems.

OVERALL CONCLUSIONS

Construction Program

BNI Construction was required to complete the final acceptance of a subcontract in accordance with their procedure 24590-WTP-GPP-CON-4103, *Subcontractor Surveillance, Acceptance and Closeout*. However, BNI's demobilizations of the subcontractors for the cooling tower and steam plant were not performed in accordance with the procedure (CON-4103), which required final acceptance of work prior to demobilization. This is considered a **Finding** for failure to follow approved procedures and will be tracked by ORP as **D-07-DESIGN-032-F01**.

Design Completion Program

Since no system was considered by BNI to be design or construction complete at the time of the assessment, it was not feasible to assess the implementation of the procedure requirements for design completion. To compensate for this lack of design or construction completion, the assessment team identified two Assessment Follow-up Items (AFIs) as follows:

- **AFI D-07-DESIGN-032-A01** to document the need for ORP to confirm the Design Verification Report (DVR) is completed prior to a quality system turnover in a future assessment.
- **AFI D-07-DESIGN-032-A02** to document the need for ORP to verify the requirements verification process is being conducted per the governing BNI procedure (24590-WTP-3DP-G04T-00903, *System Descriptions and Test Acceptance Criteria*) at system turnover in a future assessment.

The assessment team determined the design inputs list used for design verification was the information contained in the Contractor's Design Criteria Database (DCD), but this information

was not on a system basis and was not linked by reference or attachment to the system DVR. Therefore, to approve a DVR based on confirmation that the design outputs are consistent with the design inputs on a system basis, the list of design inputs used to approve the DVR must be documented. This lack of a system-oriented documentation of design inputs traceable to a completed DVR will be tracked by ORP as **Finding D-07-DESIGN-032-F02**.

Although not part of the original planning for this assessment, the assessment team determined the completed design process did not include an integrated system transient analysis to verify the approved design will meet design functional requirements, under both normal and off-normal conditions, and prior to the commissioning test program. The Contractor relied on the completion of the DVR and the requirements verification matrix (RVM), which were based on design review, design verification, and the completed system test results, to verify adequate design. The assessment team identified **Observation D-07-DESIGN-032-O01** to document ORP's concern that the Contractor's present approach may not be sufficiently comprehensive to ensure the plant will meet its performance requirements, particularly during and after operational transients.

Design and Construction Training Programs

The assessment team conducted personnel interviews of a sampling the construction (20%) and design (5%) engineering forces relative to their understanding of the procedures reviewed in this assessment. Design engineering staff did not exhibit a good understanding of the design verification and requirements verification processes associated with the completion and verification of the safety and functional adequacy of a system design, although they had completed the associated required reading. This item would normally require a Finding against the training program. However, since the Nuclear Safety and Quality Imperative (NSQI) is pursuing efforts to improve the training program, DOE identified **AFI D-07-DESIGN-032-A03** to document the need to reassess this area in a future assessment following BNI implementation of NSQI training-related corrective actions.

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Appendix A: WTP Engineering Division Assessment Plan for the Design/Construction
Completion Process for System Turnover

LIST OF ACRONYMS

AFI	Assessment Followup Item
BNI	Bechtel National, Inc.
C&T	Commissioning and Test
DCD	Design Criteria Database
DI	desk instruction
DOE	U.S. Department of Energy
DVM	design verification matrix
DVR	design verification report
FY	fiscal year
ORP	Office of River Protection
QAM	Quality Assurance Manual
RVM	Requirements Verification Matrix
WED	WTP Engineering Division
WTP	Waste Treatment and Immobilization Plant

1.0 INTRODUCTION

A major component of the U.S. Department of Energy (DOE), Office of River Protection (ORP) mission is the design and construction of the Waste Treatment and Immobilization Plant (WTP) Project in the 200 East Area of the Hanford Site. The WTP design and construction contractor is Bechtel National, Inc. (BNI, the Contractor). As part of its oversight responsibilities, ORP performs various assessments of BNI activities during the design and construction phase. One type of assessment is the design review of various systems and processes, called a design oversight, performed by the WTP Engineering Division (WED).

This design oversight provides compliance to DOE O 226.1, *Implementation of Department of Energy Oversight Policy*, Section 4.0, and supports the scheduled assessments via the ORP *Integrated Assessment Program* (ORP M 220.1), Revision 4. The fiscal year (FY) 2007 assessment schedule provides for this assessment.

The design oversight consisted of document reviews and BNI management and staff interviews. The team clarified and evaluated the initial information through early November 2006 and prepared the report in late December 2006. The preliminary report was informally reviewed by BNI for factual accuracy before issuing the final report.

2.0 BACKGROUND

The process of adequately completing the design and subsequently completing the construction for system turnover is critical to a viable transition to commissioning and testing of the WTP. On September 30, 2006, BNI presented the status of the engineering and construction work status, utilizing terminology such as design and construction completion over the next 24 months. This assessment is intended to provide some insight as to whether system design completion, and the subsequent construction completion, will accomplish this endpoint of properly preparing the system for turnover to effectively start the commissioning and test phase. For this reason, ORP is interested in obtaining the definition of design completion and the process steps involved in achieving the completion of the design phase, as well as understanding how the construction program will maintain configuration management into the test phase through the turnover process.

3.0 OBJECTIVES, SCOPE, AND APPROACH

3.1 Objectives

ORP conducted this design oversight as part of its responsibility as the WTP owner to provide effective oversight of the Contractor per DOE procedure, ORP M 220.1, *Integrated Assessment Program*, and ORP Desk Instruction (DI) 220.1, Rev. 1, per the approved Assessment Plan (D-06-Design-032, Rev. 1). The assessment plan had the specific objectives to:

1. Review the design program to determine when the design of a system was considered completed sufficiently to comply with the Contract Standard 3 Section (b)(2).
2. Review the construction, procurement, and acceptance testing program to obtain definition of construction completion sufficient to comply with the Contract Standard 4 Sections (f)(1) and (f)(3), and thus trigger the turnover process.
3. Review the construction program to determine how configuration management is being maintained when the design is changed.

4. Sample the implementation of the procedures supporting these programs and processes for any system which has been declared design/construction complete.
5. Determine the effectiveness of the construction and design training for the processes involved in the design/construction complete process used for turnover of systems.

3.2 Scope

This assessment will review the BNI program for completing the design, as required in the Contract, and the subsequent construction of that design sufficient for system turnover. In addition, this assessment will review the configuration management process used by the Construction organization to control the construction during a period that the design continues to evolve after its initial release. The assessment team will also interview construction and design engineering staff to determine the effectiveness of training on the topics being assessed.

3.3 Approach

ORP conducted oversight within the guidelines of ORP DI 220.1, *Conduct of Design Oversight*, Rev. 1. Information was collected from various BNI and DOE documents, and interviews with BNI design and construction staff were conducted (see Section 6.0 for a full listing of reviewed documents and personnel contacted). The approved design oversight plan, "WTP Engineering Division Assessment Plan of the Design/Construction Completion Process for System Turnover," is provided in Appendix A.

4.0 CONSTRUCTION AND DESIGN COMPLETION PROGRAMS AND IMPLEMENTATION RESULTS

4.1 Construction Completion Program

The assessment team reviewed procedures, interviewed management and staff, reviewed schedules and turnover documentation to determine if any system was considered construction complete. In addition, the process for implementing subcontractor closeout was reviewed. While the assessment team determined that BNI had not declared construction to be completed on any systems, three subcontractors had requested closeout of their subcontracts, which involved entire systems. BNI procedure 24590-WTP-GPP-CON-4103, *Subcontract Surveillance, Acceptance and Closeout*, Rev. 0, stated the Demobilization Checklist was to be completed after the closeout checklist was completed, following the final acceptance by the Contractor issuing a Notice of Final Acceptance. Two subcontracts, the cooling tower and the steam plant, were sampled for compliance to the procedure, since these subcontracts appeared to be complete or near complete based on the "24 Month Look Ahead/Path Forward." Based on a review of documentation for the cooling tower subcontract, the assessment team determined a Demobilization Checklist had been signed-off for this subcontractor (Thompson Mechanical). However, the Open Items by Contractor/Subcontractor for All Item Types (punchlist report) dated November 1, 2006, contained four pages of open items for the cooling tower subcontract. While BNI did acknowledge the steam plant subcontractor (Universal Mechanical) had demobilized, the assessment team could find no approved Demobilization Checklist for this subcontractor. A Notice of Final Acceptance was not issued to either subcontractor by BNI.

The assessment team concluded BNI had not properly closed out these two subcontracts, even though the subcontractors had demobilized. During interviews with BNI construction subcontract management personnel, it was confirmed that these two subcontractors had

demobilized without completing the prescribed procedural documentation. Specifically, BNI Construction did not complete the final acceptance of the subcontract, as required by BNI procedure 24590-WTP-GPP-CON-4103, Rev 0, *Subcontractor Surveillance, Acceptance and Closeout*, when it approved the Demobilization Checklists for the two subcontracts associated with the cooling towers and steam plant. Procedure 24590-WTP-GPP-CON-4103 required issuance of a notice of Final Acceptance prior to completion of the Demobilization Checklist and subsequent to demobilizing of the subcontractor. The Notice of Final Acceptance, by procedure, is issued after all technical and contractual items have been completed. Procedure 24590-WTP-GPP-CON-4103, Section 2.1.13 stated the subcontractor Demobilization Checklist is a BNI document used to confirm that all subcontract requirements have been satisfied prior to demobilization of subcontractor's material, equipment, and facilities from the jobsite. Procedure 24590-WTP-GPP-CON-4103, Section 2.3.6 stated that commercial closeout of the subcontract follows technical closeout of the subcontract. Technical closeout includes verification that items on the punchlist were completed and non-conforming conditions dispositioned and closed.

The BNI Quality Assurance Manual (QAM, 24590-WTP-QAM-01-007, Rev 7) Policy Q-05.1 *Instructions, Procedures, and Drawings*, Section 3.4, "Compliance with Implementing Documents", states:

"All individuals at the project shall comply with the implementing documents. However, when work cannot be accomplished as described in the implementing documents... the work shall not proceed. Work shall not be resumed until the implementing document is changed in accordance with the ...correct work practices."

Contrary to the above QAM requirement, BNI's demobilizations of the subcontractors for the cooling towers and steam plant were not performed in accordance with the procedure (CON-4103), which required final acceptance of work prior to demobilization. Specifically, BNI subcontractor, Thompson Mechanical, completed a Demobilization Checklist and was demobilized from the cooling tower subcontract prior to all technical and contractual items being completed, and a Notice of Final Acceptance issued. A second subcontractor, Universal Mechanical, was demobilized without either a Notice of Final Acceptance or a Demobilization Checklist being completed. This is considered a Finding for failure to follow approved procedures and will be tracked by ORP as **Finding D-07-DESIGN-032-F01**.

The assessment team concluded the third subcontract, dealing with the simulator software, was properly closed out by BNI engineering and commissioning and test personnel in accordance with BNI procedure 24590-WTP-GPP-GPX-00701, *Close-out* and RPT-SIM-05-001, *Aspen Subcontractor Acceptance Test Closure Plan*.

4.2 Design Completion Program

4.2.1 Design Completion

The assessment team reviewed the procedures associated with design completion; specifically those associated with the design verification matrix (DVM) and the requirements verification matrix (RVM). Section 6.2 provides a complete listing of the references used by the assessment team during this review. The DVM and RVM processes appeared to the assessment team to constitute the approach used by BNI to verify the safety and functional adequacy of quality systems. Based on an interview with the Design Process and Procedures Manager, the assessment team determined the BNI design organization did not consider any system's design to be completed at this time and no procedure defined what constituted design completion.

QAM Policy Q-03.1, Section 3.6.1 stated: “Design verification shall be performed to determine the adequacy of the design.” In addition, the timing of design completion is determined from QAM Policy Q-03.1, Section 3.6.3, which stated: “Design verification shall be performed prior to releasing the design for procurement, manufacture, construction, or release to another organization for other design activities except where timing cannot be met such as when insufficient data exists.” Based on the QAM Policy Q-03.1 requirements, the assessment team concluded a quality system could not be considered design complete until the design verification was completed and approved.

BNI procedure 24590-WTP-3DP-G04B-00027, *Design Verification*, Section 3.1.2, stated: “Design verification of identified SC, SS, and IHLW product quality-affecting items shall be performed prior to releasing the design for procurement, manufacture, construction, or release external to RPP-WTP Engineering for other design activities except where this timing cannot be met such as when insufficient data exists.” Based on this requirement, the assessment team concluded that design completion for a quality system could not be accomplished without approval of the associated DVR. Thus, a system design should not be released to another organization for other design activities (such as Commissioning and Test [C&T]) until design verification was established via the DVR. As required by BNI procedure 24590-WTP-3DP-G04B-00027: “the unverified portion of the design shall be clearly identified and controlled on the DVM, and open action items tracked through either a project action tracking system or discipline database.” Since no system was considered by BNI to be design or construction complete at the time of the assessment, it was not feasible to assess the implementation of the procedure requirements. The assessment team identified **Assessment Follow-up Item (AFI) D-07-DESIGN-032-A01** to document the need for ORP to confirm the Design Verification Report is completed prior to a quality system turnover in a future assessment.

In addition to system design completion being tied to the design verification process, the assessment team determined the BNI procedure for the development and approval of system descriptions (24590-WTP-3DP-G04T-00903, *System Descriptions and Test Acceptance Criteria*) provided a controlled process for verifying a design is functionally adequate. This included verification that all functional requirements of the system are included in the approved design through the Requirements Verification Matrix (RVM), which satisfied Contract Standard 3, Section (b)(2) and Standard 4, Section (f)(1)(3) relative to a system meeting its functional requirements. Since no system was design or construction complete, the assessment team identified **AFI D-07-DESIGN-032-A02** to document the need for ORP to verify the requirements verification process is being conducted per procedure at system turnover in a future assessment.

4.2.2 Documentation of Design Inputs

The assessment team interviewed Design Lead Engineers and determined the Contractor did not document the list of design inputs to the system design verification report. The assessment team reviewed the QAM for requirements for the documentation of design inputs and identified the following applicable QAM statements (underlining added for emphasis):

- QAM Q-03.1, Section 3.2.1 stated: “Applicable design inputs shall be identified and documented and their selection reviewed and approved by those responsible for the design.”
- QAM Q-03.1, Section 3.2.2 stated: “The design input shall be specified and approved on a timely basis to the level of detail necessary to permit the design activities to be carried

out in a correct manner and to provide a consistent basis for making design decisions, accomplishing design verification measures, and evaluating design changes.”

- QAM Q-03.1, Section 3.4.6 stated: “The final design, including approved design output documents and approved changes shall relate to the design input through documentation in sufficient detail to permit design verification...”
- QAM Q-03.1, Section 3.6.1 stated: “Design verification shall be performed to determine the adequacy of the design.”
- QAM Q-03.1, Section 3.6.3 stated: “Design verification shall be performed prior to the releasing the design for procurement, manufacture, construction, or release to another organization for other design activities except where timing cannot be met, such as when insufficient data exists.”
- QAM Q-03.1, Section 3.7.1.A stated: “The design inputs were correctly selected and incorporated into the design.”
- QAM Q-03.1, Section 3.7.1.F stated: “The necessary design inputs and verification requirements are specified in the design documents or in supporting procedures or instructions.

Based on these QAM requirements, the assessment team concluded that:

- Design inputs need to be identified and approved on a timely basis to permit design activities, including design verification.
- Design inputs need to be incorporated into the design and specified in the design documents.
- The final design will relate to the design input through documentation in sufficient detail to permit design verification.
- Design verification (DV) had to be completed, based on the final, safe and functionally adequate design, prior to the release to another organization for other design activities such as Commissioning and Test (who are verifying the final design and using that design to operate and maintain the facility).

The assessment team further concluded that, in order to turn over a system to C&T, the system design needed to be safe and functionally adequate. The design verification and requirements verification processes provide the adequacy verification. The input used to provide functional design adequacy is listed in the system description and is under configuration management. Currently, the design inputs list used for design verification is the information contained in the Contractor’s Design Criteria Database (DCD), but this information is not on a system basis and is not linked by reference or attachment to the system DVR. Therefore, to approve a DVR based on confirmation that the design outputs are consistent with the design inputs on a system basis, the list of design inputs used to approve the DVR must be documented.

Contrary to the requirements of the QAM, the assessment team determined the Contractor does not document the design inputs on a system basis and use this documentation to reference or attach to the design verification report (DVR) to verify the adequacy of the final design. This lack of a system-oriented documentation of design inputs traceable to a completed DVR will be tracked by ORP as **Finding D-07-DESIGN-032-F02**.

4.2.3 Design Transient Analysis

Although not part of the original planning for this assessment, the assessment team interviewed BNI lead system engineers and determined the completed design process did not require an integrated system transient analysis to verify the approved design will meet design functional requirements, under both normal and off-normal conditions, and prior to the commissioning test program. The Contractor relies on the completion of the DVR and the RVM, which are based on design review, design verification, and the test program results, to verify adequate design. ORP will track this item as **Observation D-07-DESIGN-032-O01** to document ORP's concern that the Contractor's present approach may not be sufficiently comprehensive to ensure the plant will meet contract performance requirements, particularly during and after operational transients.

4.3 Design and Construction Training Programs

The assessment team interviewed 6 construction field engineers and 6 design engineering personnel relative to their understanding of the procedures reviewed in this assessment. The construction field engineering work forces demonstrated a good working knowledge of the processes covered by the procedures. Design leads and management displayed good understanding of the overall design program integration and knowledge of the processes and procedures in which they were directly involved. However, design engineering staff did not exhibit a good understanding of the design verification and requirements verification processes associated with the completion and verification of the safety and functional adequacy of a system design, although they had completed the associated required reading. This item would normally require a Finding against the training program. However, since the Nuclear Safety and Quality Imperative (NSQI) is pursuing efforts to improve the training program, DOE identified **AFI D-07-DESIGN-032-A03** to document the need to reassess this area in a future assessment following BNI implementation of NSQI training-related corrective actions.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Findings

- **Finding D-07-DESIGN-032-F01:** BNI did not properly follow their procedure for the demobilization of subcontractors.
- **Finding D-07-DESIGN-032-F02:** BNI does not have a discretely defined list of design inputs documented and traceable to the completion of the design verification report.

5.2 Assessment Follow-Up Items

- **AFI D-07-DESIGN-032-A01:** ORP will confirm the Design Verification Report is being completed prior to quality system turnovers in a future assessment.
- **AFI D-07-DESIGN-032-A02:** ORP will verify the requirements verification process is being conducted at system turnover in accordance with BNI procedures in a future assessment.
- **AFI D-07-DESIGN-032-A03:** Reassess the BNI training program for improvements resulting from the Nuclear Safety and Quality Imperative (NSQI) in a future

assessment following BNI implementation of NSQI training-related corrective actions.

5.3 Observations

- **Observation D-07-DESIGN-032-001:** The Contractor's present design verification approach may not be sufficiently comprehensive to ensure the plant will meet contract performance requirements, particularly during and after operational transients.

6.0 PERSONNEL CONTACTED AND REFERENCES

6.1 Personnel Contacted

BNI Construction

M. Brown
K. Chandran
P. Hirshman
T. Hughes
L. Ivey
T. Minor
S. Neubauer
M. Stewart
J. Wright

BNI Engineering

A. Childers
B. Harchberger
J. Julyk
H. Klem
G. Kloster
G. Lucke
M. McLean
H. Moorman
J. Olson
D. Piscarik
S. Saunders
D. Ullrics
W. Underhill
B. Worthington

6.2 References

24590-BOF-3PS-AKBS-T0002, *Performance Specification for the Simulator Building*, Rev 0, dated September 30, 2002.

24590-WTO-GPP-CON-4101, *Construction Subcontract Management*, Rev 8, dated June 29, 2005.

24590-WTP-3DP-G03B-00001, *Design Process*, Rev 6, dated August 01, 2005.

24590-WTP-3DP-G04B-00027, *Design Verification*, Rev 8, dated April 25, 2006.

24590-WTP-3DP-G04B-00037, *Calculations*, Rev 10, dated April 25, 2006.

24590-WTP-3DP-G04B-00046, *Engineering Drawings*, Rev 16, dated November 7, 2006.

24590-WTP-3DP-G04B-00047, *Engineering Drawings*, Rev 15A, dated August 10, 2006.

24590-WTP-3DP-G04T-00901, *Design Change Control*, Rev 10, dated April 25, 2006.

24590-WTP-3DP-G04T-00903, *System Descriptions and Test Acceptance Criteria*, Rev 8, dated August 03, 2006.

24590-WTP-3DP-G04T-00907, *Design Change Package*, Rev 0, dated April 25, 2006.

24590-WTP-3DP-G04T-00913, *Review of Engineering Documents*, Rev 5, dated August 28, 2006.

24590-WTP-GPP-CON-1601, *Control of Punchlist Items*, Rev 0, dated December 14, 2005.

24590-WTP-GPP-CON-1602, *System Area Completion and Turnover*, Rev 0, dated March 16, 2005.

24590-WTP-GPP-CON-3106, *Construction Deficiency Reporting & Control*, Rev 5, dated December 29, 2004.

24590-WTP-GPP-CON-3110, *Construction Design Change Management*, Rev 1, dated November 02, 2005.

24590-WTP-GPP-CON-4103, *Subcontract Surveillance, Acceptance, and Closeout*, Rev 0, dated July 29, 2004.

24590-WTP-GPP-CON-7105, *Subcontractor Submittals*, Rev 2, dated October 14, 2004.

24590-WTP-GPP-GPX-00305, *Subcontract/Purchase Order Formation*, Rev 4, dated December 4, 2006.

24590-WTP-GPP-GPX-00605, *Terminations for Convenience and Default*, Rev 1, dated November 4, 2002.

24590-WTP-GPP-GPX-00701, *Close-out*, Rev 1, dated November 4, 2002.

24590-WTP-GPP-SIM-001, *Modification Requests and Configuration Management of WTP Simulator*, Rev 1, dated February 9, 2006.

24590-WTP-PL-MG-01-002, *Configuration Management Plan*, Rev 4, dated May 16, 2006.

24590-WTP-PL-PO-05-002, *Aspen Subcontract Acceptance Test Closure Plan*, Rev 0, dated March 30, 2005.

24590-WTP-RPT-SIM-05-001, *WTP Training Simulator Phase 2 Site Acceptance Test Report*, Rev 0, dated October 25, 2005.

ORP M 220.1, *Integrated Assessment Program*, Rev 4, dated January 3, 2006.

ORP Desk Instruction DI 220.1, *Conduct of Design Assessment*, Rev 1, dated January 2006.

“WTP Path Forward Design and Procurement Plans for the Next 24 Months,” dated September 20, 2006.

Appendix A

**WTP ENGINEERING DIVISION ASSESSMENT PLAN FOR THE
DESIGN/CONSTRUCTION COMPLETION PROCESS FOR SYSTEM
TURNOVER**

DESIGN PRODUCT OVERSIGHT PLAN REVISION 1

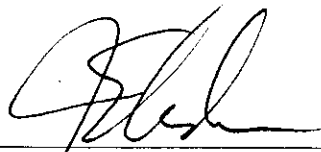
**WASTE ENGINEERING DIVISION ASSESSMENT OF THE
DESIGN/CONSTRUCTION COMPLETION PROCESS FOR SYSTEM
TURNOVER**

December 03, 2006

Design Oversight: D-07-DESIGN-032

Team Lead: James E. Adams

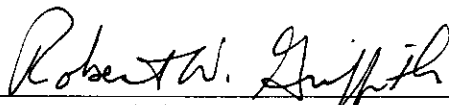
Submitted by:



James E. Adams, Team Lead
WTP Engineering Division

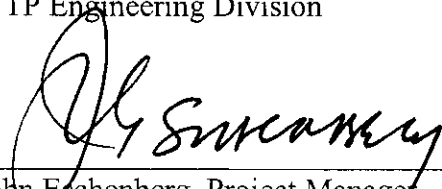
Date 5/1/07

Concurrence:



Robert W. Griffith., Acting Director
WTP Engineering Division

Date 5/2/07



John Eschenberg, Project Manager
Waste Treatment and Immobilization Plant Project

Date 5/16/07

1.0 BACKGROUND, PURPOSE AND OBJECTIVES

1.1 Background

The Waste Engineering Division (WED) has responsibility for the design oversight at the Waste Treatment and Immobilization Plant Project (WTP). BNI recently made a presentation to the Defense Nuclear Facilities Safety Board titled, "WTP Path Forward Design and Procurement Plans for the Next 24 Months," which included design and construction completion milestones during this period. The process of completion of design and construction for system turnover is an important program supporting the transition to commissioning and testing of the WTP. This assessment will review the BNI program for defining the processes of completing the design and construction phases sufficient for system turnover as well as the review the configuration management of the design during construction, the design change process following the declaration of system construction complete, and the effectiveness of training to support design/construction completion for turnover to the Commissioning and Training (C&T) organization.

1.2 Purpose

This design oversight assessment will focus on the programs and processes used to complete the design and construction phases to support turnover from construction to the C&T organization. In addition, the assessment will review the construction program to understand how construction maintains configuration management in the field while design is still evolving after issuing the design for construction. An example system will be reviewed to determine if the processes are adequately defined and functioning properly. Also, this oversight will review the design change process used following turnover.

1.3 Objectives

The following are the specific objectives of this oversight:

1. Review the design program to determine when the design of a system was considered completed sufficiently to comply with the Contract Standard 3 Section (b)(2) and allow turnover for testing.
2. Review the construction, procurement, and acceptance testing program to obtain definition of construction completion sufficient to comply with the Contract Standard 4 Sections (f)(1) and (f)(3), and thus trigger the turnover process.
3. Review the construction program to determine how configuration management is being maintained while design engineering is potentially changing the design after issued for construction.
4. Sample the implementation of the procedures supporting these programs and processes for any system which has been declared design/construction complete.
5. Determine the effectiveness of the construction and design training for the processes involved in the design/construction complete process used for turnover of systems.

2.0 PROCESS

This oversight shall be conducted within the guidelines of ORP M 220.1 and the ORP Desk Instruction DI 220.1, "Conduct of Design Oversight," Revision 1, dated January 13, 2006.

2.1 Scope

This oversight will include review of all project plans, procedures, and records associated with the completion of the design via the flowdown process, as well as plans, procedures, and records associated with the completion of construction at the system level. Example system(s) may be assessed if declared complete or in the process of being declared complete.

2.2 Preparation

1. Identify the Contractor point of contact for the review.
2. Obtain a list of design procedures and construction procedures involved with the completion of a system for turnover from Bechtel National, Inc. (BNI).
3. Obtain the construction schedule for any systems being considered for completion within the next year.
4. Obtain any punchlists, walkdown notes, surveillances, Corrective Action Reports (CAR), assessments, or other documents pertaining to system completion of the identified systems from item 3.
5. Obtain a list of the BNI individuals responsible for conducting system level reviews within subcontractors, construction, design, and commissioning organizations.

2.3 Document Review

The oversight will review the requested documentation and prepare lines of inquiry for use in interviews and field observations as well as further document request. This should take place prior to the assessment entrance if at all possible but in any case, prior to start of field assessment. Notes should be retained identifying the document title and number reviewed and any results of the review for use in preparing assessment notes which will be written by each team member as input to the report.

De-brief the U.S. Department of Energy, Office of River Protection (ORP) and Contractor management periodically as required. The team lead will prepare a draft report that summarizes the activities and the results, conclusions, and recommendations of the review, and issue the Draft Design Oversight Report for review and comment by ORP management and cognizant Contractor personnel. The final report will resolve comments received on the draft report.

3.0 SCHEDULE OF ACTIVITIES

Table 2 summarizes the schedule for completion of this oversight.

4.0 DOCUMENTATION

The final report of this task shall contain the sections and content as summarized in ORP DI 220.1, "Conduct of Design Oversight." Revision 1.

The issues identified in this oversight shall be listed in the final report. Each issue shall be assigned a type of issue and an item number for tracking to resolution through the Consolidated Action Reporting System (CARS). These shall also be tracked to resolution by Contractor through the Correspondence Control Number (CCN) that will be assigned to the transmittal of the report from ORP to Contractor.

5.0 CLOSURE

The team lead with concurrence of the Director shall confirm that the items from this oversight are adequately resolved.

Task# ORP-WTP-2006-0233

E-STARS™ Report
 Task Detail Report
 05/11/2007 0821

TASK INFORMATION			
Task#	ORP-WTP-2006-0233		
Subject	(Concur 06-WTP-204) TRANSMITTAL OF U.S. DEPARTMENT OF ENERGY (DOE), OFFICE OF RIVER PROTECTION (ORP) DESIGN OVERSIGHT REPORT: WASTE ENGINEERING DIVISION ASSESSMENT OF THE DESIGN/CONSTRUCTION COMPLETION PROCESS FOR SYSTEM TURNOVER (D-06-DESIGN-032)		
Parent Task#		Status	CLOSED
Reference		Due	
Originator	Licht, Sarah	Priority	High
Originator Phone	(509) 373-0068	Category	None
Origination Date	12/20/2006 1314	Generic1	
Remote Task#		Generic2	
Deliverable	None	Generic3	
Class	None	View Permissions	Normal
Instructions	Hard copy of the correspondence is being routed for concurrence. Once you have reviewed the correspondence, please approve or disapprove via E-STARS and route to the next person on the list. Thank you. bcc: MGR RDG file WTP OFF file WTP RGD file M. K. Barrett, AMD J. E. Adams, WTP J. R. Eschenberg, WTP R. W. Griffith, WTP L. F. Miller, WTP		
ROUTING LISTS			
1	Route List		Inactive
	<ul style="list-style-type: none"> ● Adams, Jim E - Review - Concur - 12/26/2006 1401 <i>Instructions:</i> ● Miller, Lewis F - Review - Withdrawn - 05/01/2007 1444 <i>Instructions:</i> ● Short, Jewel Jeff - Review - Withdrawn - 05/01/2007 1424 <i>Instructions:</i> ● Eschenberg, John R - Review - Concur with comments - 05/02/2007 1530 <i>Instructions:</i> ● Schepens, Roy J - Review - Withdrawn - 05/01/2007 1424 <i>Instructions:</i> ● Eschenberg, John R - Approve - Approved - 05/11/2007 0820 <i>Instructions:</i> ● Griffith, Robert W - Review - Concur - 05/01/2007 1403 		

RECEIVED

MAY 11 2007

DOE-ORP/ORPCC

Task# ORP-WTP-2006-0233	
	<i>Instructions:</i>
	<ul style="list-style-type: none"> ● Barrett, Michael K - Review - Concur with comments - 05/07/2007 1038 <i>Instructions:</i>
	<ul style="list-style-type: none"> ● Olinger, Shirley J - Review - Concur - 05/09/2007 0935 <i>Instructions:</i>
ATTACHMENTS	
Attachments	<ol style="list-style-type: none"> 1. 06-WTP-204.attach.DesignOversightReport-D-06-DESIGN-032.doc 2. 06-WTP-204.JEA.albert.doc
COLLABORATION	
COMMENTS	
Poster	Eschenberg, John R (Licht, Sarah) - 05/02/2007 0305
	Concur
	Griffith concurred on behalf of Eschenberg. 5/2/07
Poster	Barrett, Michael K (Licht, Sarah) - 05/07/2007 1005
	Concur
	Mike concurred on 5/2/07.
TASK DUE DATE HISTORY	
<i>No Due Date History</i>	
SUB TASK HISTORY	
<i>No Subtasks</i>	

-- end of report --

Task# ORP-WTP-2006-0233

E-STARS™ Report
 Task Detail Report
 05/01/2007 0228

TASK INFORMATION			
Task#	ORP-WTP-2006-0233		
Subject	(Concur 06-WTP-204) TRANSMITTAL OF U.S. DEPARTMENT OF ENERGY (DOE), OFFICE OF RIVER PROTECTION (ORP) DESIGN OVERSIGHT REPORT: WASTE ENGINEERING DIVISION ASSESSMENT OF THE DESIGN/CONSTRUCTION COMPLETION PROCESS FOR SYSTEM TURNOVER (D-06-DESIGN-032)		
Parent Task#		Status	Open
Reference		Due	
Originator	Licht, Sarah	Priority	High
Originator Phone	(509) 373-0068	Category	None
Origination Date	12/20/2006 1314	Generic1	
Remote Task#		Generic2	
Deliverable	None	Generic3	
Class	None	View Permissions	Normal
Instructions	Hard copy of the correspondence is being routed for concurrence. Once you have reviewed the correspondence, please approve or disapprove via E-STARS and route to the next person on the list. Thank you. bcc: MGR RDG file WTP OFF file WTP RGD file M. K. Barrett, AMD J. E. Adams, WTP J. R. Eschenberg, WTP R. W. Griffith, WTP L. F. Miller, WTP		

ROUTING LISTS

1	Route List	Active
	<ul style="list-style-type: none"> Adams, Jim E - Review - Concur - 12/26/2006 1401 <i>Instructions:</i> 	
	<ul style="list-style-type: none"> Miller, Lewis F - Review - Awaiting Response <i>Instructions:</i> 	
	<ul style="list-style-type: none"> Short, Jewel Jeff - Review - Withdrawn - 05/01/2007 1424 <i>Instructions:</i> 	
	<ul style="list-style-type: none"> Eschenberg, John R - Review - Awaiting Response <i>RW 93 for JRE 5/2/07</i> <i>Instructions:</i> 	
	<ul style="list-style-type: none"> Scheneps, Roy J - Review - Withdrawn - 05/01/2007 1424 <i>Instructions:</i> 	
	<ul style="list-style-type: none"> Eschenberg, John R - Approve - Awaiting Response 	
	<ul style="list-style-type: none"> Griffith, Robert W - Review - Concur - 05/01/2007 1403 	

Rec'd 5/2/07

*RW 93 5/2/07
 - see next page for more concurrence.*

Task# ORP-WTP-2006-0233	
	<i>Instructions:</i>
	<ul style="list-style-type: none">Barrett, Michael K - Review - Awaiting Response <i>Instructions:</i>
	<ul style="list-style-type: none">Olinger, Shirley J - Review - Awaiting Response <i>Instructions:</i>
ATTACHMENTS	
Attachments	<ol style="list-style-type: none">06-WTP-204.attach.DesignOversightReport-D-06-DESIGN-032.doc06-WTP-204.JEA.albert.doc
COLLABORATION	
COMMENTS	
	<i>No Comments</i>
TASK DUE DATE HISTORY	
	<i>No Due Date History</i>
SUB TASK HISTORY	
	<i>No Subtasks</i>

M
MAY 5-2-07 add disclaimer
KB SJO

-- end of report --