



U.S. Department of Energy
Office of River Protection

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

05-WED-052

JAN 17 2006

Mr. J. P. Betts, Project Manager
Bechtel National, Inc.
2435 Stevens Center
Richland, Washington 99352

Dear Mr. Betts:

CONTRACT NO. DE-AC27-01RV14136 – TRANSMITTAL OF U.S. DEPARTMENT OF ENERGY (DOE), OFFICE OF RIVER PROTECTION (ORP) DESIGN OVERSIGHT REPORT: REVIEW OF CONTRACTOR PROCESS FOR CONFIGURATION MANAGEMENT (CM) (D-05-DESIGN-020)

DOE ORP conducted a design oversight of the Bechtel National, Inc. (BNI) "*WTP Configuration Management Plan*" (CM Plan), 24590-WTP-PL-MG-002, Revision 3, and is transmitting the resulting report by attachment to this letter. The oversight was performed in accordance with the subject Contract (Section C, Clause C.3 and Standard 3). The oversight report concluded the CM Plan and its associated implementing procedures are being effectively implemented, with no adverse findings.

ORP identified three minor issues listed below that will be monitored by ORP until addressed and closed. See the attached report for complete discussion.

1. Revise the CM Plan to indicate the Component Identification System (CIS) provides CM only for configured items involved with operations, maintenance, and testing. (AFI A-05-AMWTP-DESIGN-020-A01)
2. Update the CM Path Forward for issues identified by BNI and ORP requiring corrective actions needed for the CM program implementation. (Observation A-05-AMWTP-DESIGN-020-O02)
3. Formalize and perform a Root Cause Analysis for the improvement of quality data for CIS. (AFI A-05-AMWTP-DESIGN-020-A-03)

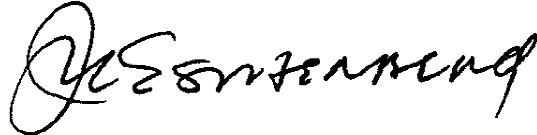
The technical direction herein is considered to be within the limitations of Contract Clause H.1 "Technical Direction" and does not meet any of the conditions described in paragraph (b)(1) through (4) of the clause. In the event the Contractor disagrees with this interpretation, it shall not proceed but shall notify the Contracting Officer immediately orally and in writing within five working days in accordance with the Contract (Section H, Clause H.1 "Technical Direction").

Mr. J. P. Betts
05-WED-052

-2-

If you have any questions, please contact me, or your staff may call Bill Hamel, Director, Waste Treatment and Immobilization Plant Project, Engineering Division, (509) 373-1569.

Sincerely,

A handwritten signature in black ink, appearing to read "John R. Eschenberg". The signature is written in a cursive, somewhat stylized font.

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

WED:JEA

Attachment

cc w/attach:

M. Ensminger, BNI
J. P. Henschel, BNI
S. C. Lynch, BNI
D. J. Pisarcik, BNI
G. Shell, BNI

Attachment
05-WED-052

DOE ORP DESIGN OVERSIGHT REPORT

REVIEW OF CONTRACTOR PROCESS FOR CONFIGURATION MANAGEMENT (CM)

November 2005

Design Oversight: D-05-DESIGN-020

WED:JEA
November 22, 2005

U.S. Department of Energy, Office of River Protection

DOE ORP DESIGN OVERSIGHT REPORT

REVIEW OF CONTRACTOR PROCESS FOR CONFIGURATION MANAGEMENT (CM)

November 2005

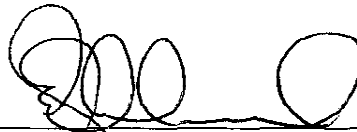
Design oversight: D-05-DESIGN-020

Team Lead:



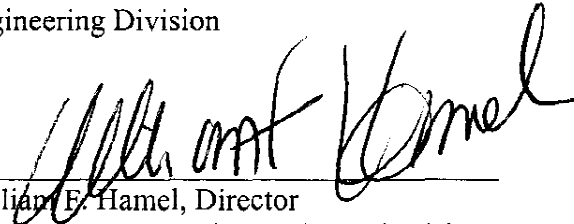
James E. Adams, Design Oversight Engineer
Waste Treatment and Immobilization Plant
Engineering Division

Reviewer:



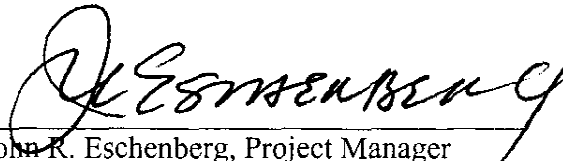
John E. Orchard, SSO
Waste Treatment and Immobilization Plant
Engineering Division

Concurrence:



William E. Hamel, Director
Waste Treatment and Immobilization Plant
Engineering Division

Approved:



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

Executive Summary

The DOE ORP staff conducted a design oversight to:

1. Review the current CM Plan and supporting implementing procedures for implementation effectiveness and incorporation of Bechtel National, Inc. (BNI) identified issues to the CM Plan via the 2004 CM Path Forward (CMPF) commitments.
2. Evaluate the problems associated with the Component Information System (CIS) database and determine if it has a negative trend requiring Contractor attention.
3. Evaluate a sampling of the components installed in the facility (by walkdown in field and by database comparisons) to verify the information in CM databases are consistent with the other design media such as the *Infoworks* database and the design drawings (as-builts).
4. Review the effectiveness of BNI oversight of the CM Plan by review of management assessments, QA audits, QC surveillances, and Subcontractor oversight associated with the CM program.
5. Review a sampling of the drawings on the controlled stick files for comparison to the CM database *Infoworks*.

Overall Conclusion:

Design oversight report D-05-DESIGN-020 concluded the CM Plan and its associated implementing procedures are being effectively implemented, with no adverse findings. However, CM Plan and procedures require clarification defining the purpose of the CM database Component Information System (CIS). Recent procedures changes require CIS to only identify configured items (CIs) which are components involved in the operations, maintenance, and testing of the facility. This is in conflict with the CM Plan. Assessment Follow-up Items (AFI) A-05-AMWTP-DESIGN-020-A01 will track the CM Plan clarification.

In addition, the BNI "2005 CM Management Assessment" identified issues, which need to be incorporated into the 2005 CM Path Forward (CMPF). This Observation A-05-AMWTP-DESIGN-020-O02 tracks the update of the CMPF.

The design oversight also concluded the BNI Engineering and Quality Assurance organizations provided assessments and independent audits, which documented recurring issues with the data in CIS. The BNI evaluation of this data resulted in a verbal commitment to perform a formal Root Cause Analysis to identify causes and corrective actions to improve the CIS data quality for response to Correction Actions Reports already in place. The formalization and completion of this commitment is tracked by AFI A-05-AMWTP-DESIGN-020-A-03.

Objective 1a: (Implementation effectiveness of the CM Plan)

The design oversight reviewed the overall BNI CM Plan and implementing procedures, documentation associated with the corrective action program, and the BNI *2005 CM Management Assessment* to determine the CM Plan compliance and implementation effectiveness.

The design oversight concluded the majority of the CM Plan was being effectively implemented by existing procedures. The design oversight review of procedure 24590-WTP-3DP-G03B-004, Revision 4, *Standard Component Numbering* determined the definition of what configured items were tracked by CIS had been changed in June 2005, by the corrective action response to CAR-05-035. This revision limited CIS to identifying and controlling components for operations, maintenance, and testing versus tracking and controlling all configured items (CI) as stated in the CM Plan. The new wording of *Standard Component Numbering* stated, "Some components do not require entry in the CIS/*INtools*/SETROUTE databases, because unique identification of these components is not required for the operation, testing, and maintenance of the facility." This statement contradicted the CM Plan statement, "Engineering maintains the CIS and *INtools* databases for identifying and controlling configured items and supporting data." The design oversight interviewed engineering management in the factual accuracy review of the report and determined a proposed Finding did not have to be written, since components are a subset of configured items, making the statement partially true. However, because the CM Plan implies all CIs are identified and controlled by CIS, this statement was considered misleading. The clarification to the CM Plan will be tracked by AFI A-05-AMWPT-DESIGN-020-A01.

Objective 1b: (Incorporation of BNI identified issues to the 2005 CM Path Forward [CMPF] commitments)

The design oversight reviewed the CM Plan and implementing procedures, a sampling of four commitments in the 2004 CMPF listing of commitments, and the BNI *2005 CM Management Assessment*.

The design oversight concluded the CM Plan continued to be modified through commitments listed in the CMPF updates. The majority of past CMPF items were been included, but some still remained open. At least one, previously closed, needed to be re-opened. However, when the design oversight requested the current update to the CMPF for a current listing of issues and deficiencies needing corrective action based on BNI *2005 CM Assessment*, it was not yet available. Hence, Observation A-05-AMWPT-DESIGN-020-002 will track the update of the CMPF.

Objective 2: (Evaluate the problems associated with the Component Information System [CIS] database for determination of a negative trend requiring Contractor attention)

The design oversight reviewed the *2005 CM Management Assessment*, as well as BNI surveillances and CARs performed over the past two years, for trending of the issue.

The design oversight review of the *2005 CM Management Assessment* noted a two-year history of problems with the CIS database. This was documented by several organizations (OSR, BNI Engineering, BNI Quality Assurance) in various reports (inspections/assessments, surveillances, management assessments, etc.) with corrective actions and recommendations initiated and implemented. These problems typically relate to missing or inaccurate data. Many actions were completed, the majority of which had focused on process revisions and correcting the specifically identified conditions. However, the potential or actual impact of the identified

Review of Contractor Process for Configuration Management (D-05-Design-020)

conditions on downstream quality-affecting activities was not evaluated and addressed, nor were the barriers to prevent recurrence (process checking requirements) evaluated.

Due to recent recurrence of these issues, as documented in CARs 24590-WTP-QA-05-217, 05-099, and 05-186, the design oversight concluded actions taken to date, were not effective in preventing CIS data problems. These recurrences create the basis of a negative trend that needs to be addressed, potentially via a Root Cause Analysis (RCA), to ensure the CM program databases clearly define and implement their respective roles for the identification, tracking, and control of CM information for configured items and components. This is essential to both maintain control of CM during design and construction, as well as support operational CM via the database Component Maintenance Management System (CMMS). During the factual accuracy review by BNI, engineering management announced a RCA was being initiated for the CIS trend. This issue will be tracked by AFI A-05-AMWTP-DESIGN-020-A03, to verify the RCA is performed and the results used to modify the CM Plan, implementing procedures, and associated databases.

Objective 3: (Verification of CIS database consistency with the other design media)

The design oversight performed a field walkdown of the components in the Cooling Tower and Support System using the subcontractor's certified as-builts. In addition, a document review was performed between the design as shown on P&IDs (design CM provided by Infoworks) and the components (as tracked by CIS and *INtools* data bases) for the Process Service Air (PSA) system.

The design oversight walk down of the Cooling Towers found minor discrepancies between the as-built prints and the components as installed (comments were provided to the Contractor on walk down notes). However, since the subcontractor had not completed turnover to BNI, no action is required now. No discrepancies were noted in the document review of the PSA system.

Objective 4: (Effectiveness of BNI oversight of the CM Program)

The design oversight reviewed the engineering management assessment (MA) schedule and reports, the QA audit schedule and reports, and the associated corrective action reports (CAR) and their closeout surveillance reports relative to CM. The design oversight team also interviewed engineering and QA management for their interpretation of the results of the data for developing trends.

The design oversight concluded the BNI engineering and QA organizations provided assessments and independent audits, containing useful input for corrective actions. However, the team also concluded the current CM oversight data should have been sufficient for BNI to adjust the CM Plan and clarify the implementing procedures to improve the quality of the CIS data based on the CARs already in place. During the factual accuracy review, the Contractor notified the team that a RCA was initiated to determine and correct the issues associated with the CIS database. This item is included in AFI A-05-RPPWTP-020-A-03.

Objective 5: (Review a sampling of the drawings on the controlled stick files for comparison to Infoworks)

The design oversight performed a walkdown of the site-controlled stick files of Project and Administrative Document Control (PADC). Five of the ten controlled stick files site (Balance of Facility (BOF) Technical, BOF Craft, Low Activity Waste (LAW) Technical, LAW Craft, and High Level Waste (HLW) Technical) as well as the supporting controlled copies of the design changes kept with the drawing files. Over 50 prints were reviewed.

The design oversight found no discrepancies in the controlled stick files or the associated supporting design changes notices.

Table of Contents

1.0	INTRODUCTION	1
2.0	BACKGROUND	1
3.0	OBJECTIVES, SCOPE AND APPROACH	2
3.1	Objectives	2
3.2	Scope.....	2
3.3	Approach.....	2
4.0	RESULTS	3
4.1	Overall CM Program Compliance	3
4.2	CM Program Effectiveness	5
4.3	BNI Oversight of the CM Program.....	6
5.0	OPEN ITEMS AND RECOMMENDATIONS.....	7
6.0	REFERENCES AND PERSONNEL CONTACTED	7
6.1	References.....	7
6.2	Personnel Contacted.....	9
	Appendix A - Oversight Plan.....	11
	Appendix B - Assessment Note D-05-DESIGN-RPPWTP-0020-01	17
	Appendix C - Assessment Note D-05-DESIGN-RPPWTP-0020-02	24
	Appendix D - Assessment Note D-05-DESIGN-RPPWTP-0016-03	35

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) in the 200 East Area of the Hanford Site. The design and construction contractor for the WTP is Bechtel National, Inc. (BNI). 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 Order 226.1, *Implementation of Department of Energy Oversight Polic*, Section 4.0, via the periodic assessment of Configuration Management (CM) required by DOE Order 420.1A, *Facility Safety*, Section 4.5.1.2, and scheduled via the ORP Integrated Assessment Program, ORP M 220.1, Revision 3, on the Annual Integrated Schedule.

This design oversight focused on Configuration Management (CM) Plan effectiveness for tracking and control of the design via the identification and control of configured items (CI). The CM program base requirements are identified in the *Configuration Management Plan* 24590-WTP-PL-MG-01-002, Revision 3, dated February 20, 2004, which is based on compliance to the Safety Requirements Document (SRD) Implementing Standard, *ISO 10007: 1995 (E) Quality Management-Guidelines for Configuration Management*. The implementing procedures named within the CM Plan and focus primarily on configured item and component numbering, which were identified, tracked, and controlled via the CM databases CIS, *INtools*, and *Infoworks*.

The formal phase of the October 2005 design oversight consisted of document reviews, field walk downs, and BNI management and staff interviews. The team clarified and evaluation the initial information through early October 2005 and prepared the Report in late November 2005. The Preliminary Report was informally reviewed by BNI for factual accuracy before issuing the Final Report.

2.0 BACKGROUND

The WTP Project continues with design and construction in a reduced work mode to facilitate the revision of the seismic loads required by the new interim seismic ground motion criteria. The Contractor self-committed to performing assessments of CM each year and placed program issues needing clarification and resolution in the Configuration Management Path Forward (CMPF) each year. The last BNI CM assessment was performed in September 2005 and published as 24590-WTP-MAR-ENG-05-0012. This design oversight report evaluates the BNI CM assessment and included direct field oversight.

In addition to the CM Plan program review for implementation effectiveness, this design oversight reviewed an apparent trend of BNI Corrective Action Reports (CAR), discussed in the *BNI 2005 CM Assessment*, to determine if the root cause of the problem has been accurately identified.

Based on the requirements detailed in Section 1.0 above, ORP management requested WED to perform an assessment of the BNI CM Plan and implementing procedures with respect to their implementation at this point in the Project.

3.0 OBJECTIVES, SCOPE AND APPROACH

3.1 Objectives

ORP conducted this design oversight as part of its responsibility as the WTP owner to ensure that the CM program implementation followed the approved CM Plan and implementing procedures. The specific objectives of this oversight are to:

- Review the current CM Plan and supporting implementing procedures for implementation effectiveness and the incorporation of BNI-identified issues via the 2004 CM Path Forward (CMPF) commitments.
- Evaluate the problems associated with the Component Information System (CIS) and *INtools* databases and determine if a negative trend requiring Contractor attention exist.
- Evaluate a sampling of the components installed in the facility (by walkdown in the field and by database comparisons) to verify the information in the CIS database and *INtools* is consistent with the other design media such as the *Infoworks* database and the design drawings (as-builts).
- Review the BNI oversight effectiveness by review of management assessments, QA audits, QC surveillances, subcontractor oversight, and the BNI annual CM assessment.
- Review a sampling of the drawings on the controlled stick files for comparison with the *Infoworks* database.

3.2 Scope

This oversight included a review of the CM Plan and implementing procedures, CM program oversight schedules and reports, and the associated Corrective Action Reports (CAR). Also included in this Design oversight, were interviews with Contractor management and staff, a walk down review of field conditions for CM, and a review of field controlled prints files for correlation to the CM database *Infoworks*.

3.3 Approach

ORP conducted oversight within the guidelines of ORP PD 220.1-12, "Conduct of Design oversight." Information was collected from various BNI and DOE documents, and interviews with BNI design staff were conducted. See Section 6 for a full listing of reviewed documents and personnel contacted.

The approved design oversight plan, "Review of Contractor Configuration Management/Field Document Control Processes" is provided in Appendix A.

The design review team initiated six steps to obtain the information required to meet the Design oversight objectives. The order of review and depth of each step was left to the reviewer's discretion.

- 1) Evaluate of the Contractor's CM Plan and implementing procedures' compliance and effectiveness for the CM element "Configured Item Identification and Control".
- 2) Evaluate the BNI CM Plan and procedures for the incorporation of CMPF commitments.
- 3) Review the field CM status of the BOF Cooling Tower and Support System by walk down and determine if field conditions are in accordance with CM design documents.
- 4) Analyze of the BNI 2005 *CM Assessment* and the associated Corrective Action Reports to determine if corrective action trends exist for CIS and *INtools*.
- 5) Review the BNI CM program oversight effectiveness by reviewing the FY 05 oversight documentation and field conditions.
- 6) Compare site-controlled print files with *Infowork* CM database.

4.0 RESULTS

4.1 Overall CM Program Compliance

CM Program Compliance

The design oversight reviewed the CM Plan, associated implementing procedures, the completed actions of the CMPF, and recent corrective action reports to determine the compliance and effectiveness of implementation of the CM Plan element, "Configure Item Identification and Control."

The design oversight reviewed the CM Plan, Section 5.0, the associated implementing procedure 24590-WTP-3DP-G03B-0004, *Standard Component Numbering*, and the design guides 24590-WTP-GPG-M-046, *Design Guide for Component Information System* and 24590-WTP-GPG-J-018, *Design Guide: INTools Database*. The review of the CM Plan indicated "configure items" were identified and controlled using the Component Information System (CIS) and *INtools*. However, the implementing procedure *Standard Component Numbering* and the CIS and *INtools* design guides indicated only "component" identification and control were addressed via the design guides for CIS and *INtools* databases.

The design oversight review of *Standard Component Numbering* procedure, Section 3.3 determined the definition of what configured items (CI) were entered into CIS was recently revised. The procedure now states "Some components do not require entry in the CIS/*INtools*/SETROUTE databases because unique identification of these components is not

required for the operation, testing, and maintenance (OTM) of the facility.” This procedure revision resulted in OTM components being the subset of CIs which were identified and controlled in the CIS database. This revision was based on the corrective actions listed in CAR-05-035, which was accepted by QA and closed on June 21, 2005 (involved pipe spool component tag numbers [CTN] not being loaded into the CIS database). The Engineering Processes group concluded this condition was acceptable, because the pipe spools were CIs, but were not required for OTM of the facility. The CIs (pipe spools) became line numbers identified on the P&IDs after installation. The CM for the line numbers is controlled by *Infowork* control of the P&ID revision versus CIS tracking of the CI. The response went on to state other components assigned CTN’s did not require entry into CIS because unique identification of these component types was not required for OTM of the facility. Examples of these components were pipe spools, HVAC ducting, and pipe supports.

The design oversight concluded the CM Plan, Section 5.3 statement, “Engineering maintains the CIS and *INtools* databases for identifying and controlling configured items and supporting data,” conflicted with the *Standard Component Numbering*, Section 3.3 statement, “Some components do not require entry in the CIS/*INtools*/SETROUTE databases because unique identification of these components is not required for the operation, testing, and maintenance of the facility.”

The Engineering Process management was interviewed for clarification and stated CIS was not intended to identify and control all configured items, but rather only those CIs components required for OTM, as stated in the component numbering procedure. The remainder of CIs are identified and controlled for CM via the design documents controlled by the CM database *Infoworks*.

The design oversight concluded the definition of what constitutes a “configured item” (SSC supporting design CM) differs from the definition of “component” (required for OTM purposes supporting operational CM). The distinction between these terms is not clearly differentiated in the CM Plan and subsequent implementing procedures, creating confusion relative to the purpose of CIS. The Assessment Follow-up Item (AFI) A-05-AMWTP-DESIGN-020-A01 will track the clarification of the CM Plan, relative to which CI’s are entered and controlled by CIS.

CM Plan Update for CMPF Compliance

The design oversight also reviewed the CM Plan and the 2004 CMPF commitment listing for incorporation of CMPF commitments to support future CM needs. The review also covered recently incorporated program changes.

The design oversight review of a sampling of four CMPF issues and their associated documents against the status described in *Configuration Management Assessment – September 2005* determined that, with one exception, the actions taken adequately addressed the CMPF issues. The exception was CMPF Issue 3.1 associated with RITS 04-402. This item needs to be placed back on the CMPF listing. (Observation A-05-AMWTP-DESIGN-020-O02)

The design oversight concluded the CM Plan continued to be modified through commitments listed in the CMPF updates based on Contractor self-assessment and ORP assessments. The

majority of past CMPF items were included, but some still remain; while others needing to be re-listed. However, when the design oversight requested the current update to the CMPF for incorporation of issues and deficiencies based on the BNI self assessment, audits and corrective action reports, it was not available. Observation A-05-AMWTP-DESIGN-020-O02 will track the update of the CMPF for inclusion of issues.

4.2 CM Program Effectiveness

The design oversight performed a series of reviews to determine if the CM Plan was implementation effectiveness. These included the following:

- A balance of facility (BOF) system walk down using selected subcontractor as-built drawings
- A temporary power distribution walk down using as-built sketches
- A CM document comparison of a partially completed BOF system for complete and accurate component identification information in the CM databases
- A corrective action report trend analysis of the CIS database
- A corrective action report trend analysis of the *INtools* database
- A field controlled print file walkdown for comparison to the *Infoworks* database.

The design oversight also interviewed construction, engineering and QA management and staff regarding the results of these walkdowns and document comparisons to determine if a negative CM implementation trend had developed.

Walkdowns

The design oversight walkdown effort concluded the subcontractor as-built drawings accurately displayed the field condition of the components examined. Although some discrepancies were noted between as-designed and as-built, as well as between as-built drawings and CM database printouts, the correlation was very close. Considering that the formal labeling process had not yet been implemented and the turnover program had not yet completed the turnover of the system, the existing condition was considered adequate at this point in the construction program. This assessment identified no issues requiring formal tracking with minor notations of discrepancies documented in walkdown reports given to BNI and ORP management.

Database Comparison to Drawings

The design oversight also compared the P&IDs drawings with the *INtool* printout for the Plant Service Air System to determine the CM correlation between the approved P&IDs and the CM database information. The design oversight review of selected configured items/components in approved design drawings and CM databases identified of no discrepancies.

Trend Analysis

The design oversight reviewed BNI surveillances, audits, management self-assessments, and corrective action reports to determine if a negative trend existed in implementation of the CM Plan relative to CM databases (e.g., CIS, *INtools*, and *Infoworks*)

CIS Database:

The BNI oversight documents indicated a history of problems with CIS over the last two years. This was documented by several organizations (OSR, BNI Engineering, BNI Quality Assurance) in various reports (inspections/assessments, surveillances, management assessments, etc.) with corrective actions and recommendations initiated and implemented. These problems typically relate to missing or inaccurate data. Many actions were completed, the majority of which focused on revising processes and correcting the identified conditions. In most cases the potential or actual impact of the identified conditions on downstream quality-affecting activities was not evaluated and addressed, nor were the barriers to prevent recurrence (process checking requirements) evaluated.

The design oversight review of the CIS database information for the two BOF systems did not discover any significant new information validating the CIS data quality issues previously identified by BNI. However, the CAR review did indicate CIS problems were recurring in the latter part of 2005 (24590-WTP-QA-05-035, 05-099, 05-186, and 05-217). These CARs were not analyzed as part of the BNI CM Assessment. The design oversight concluded actions taken were not effective in preventing CIS data problems and CIS had a negative trend. This negative trend needs to be addressed, potentially via a Root Cause Analysis. During the factual accuracy interviews the Contractor announced a Root Cause Analysis for CIS data problems was being initiated. This will be tracked by AFI A-05-AMWTP-DESIGN-020-A03

INtools Database:

The design oversight utilized the same process for the analysis of *INtools* as was used for the trend analysis of CIS and concluded *INtools* was functioning effectively as a CM database and did not have a negative trend based on corrective action history.

Infoworks Database:

The design oversight performed a walkdown of the controlled stick files of field PADC. Five controlled stick files were reviewed (BOF Technical, BOF Craft, LAW Technical, LAW Craft, and HLW/PRT Technical). Each of these stick files contained 20 to 40 controlled drawings. The reviewer examined one print for every other stick file by random selection to record the print number, revision, and posted changes. The field notes were then checked to the *Infoworks* status. The reviewer also verified a hard copy of the design changes listed was contained in the books kept with the files. Over 50 prints were reviewed with no discrepancies found, and the design change documents were located in the books next to the prints.

4.3 BNI Oversight of the CM Program

The design oversight reviewed the engineering management assessment (MA) schedule, relevant MA, the QA audit schedule and relevant audits, and the associated Corrective Action Reports (CARs) and their closeout surveillance reports relative to the topic of configuration management. The assessors also interviewed the engineering and QA management for their interpretation of the results of the data for developing trends.

The design oversight concluded the BNI engineering and QA organizations had provided assessments and independent audits containing useful input for corrective actions. The BNI data evaluation has resulted in a commitment to perform a formal Root Cause Analysis to identify causes and corrective actions to improve the quality of the CIS data for response to current CARs. Assessment Follow-up Item A-05-RPPWTP-DESIGN-020-A-03 tracks the completion of the RCA and the incorporation of its results to the CMPF.

5.0 OPEN ITEMS AND RECOMMENDATIONS

Open Items:

A-05-AMWTP-DESIGN-020-A01: This AFI tracks CM Plan and associated procedures revisions necessary for the clarification to the CM Plan specifying CIS does not track and control all CIs, but is limited to components for operations, maintenance, and testing as stated in the response to CAR-05-035. All other CIs are tracked and controlled by design documents and are provided CM through *Infoworks*.

A-05-AMWTP-DESIGN-020-O02: This observation tracks the update of the CMPF for issues needing to be addressed for the upgrade and implementation of the CM Plan based on the BNI and ORP CM assessments.

A-05-AMWTP-DESIGN-020-A03: This AFI tracks the completed Root Cause Analysis dealing with the input of quality information into the CM database CIS. This information should be verified to be of a quality nature to provide quality data for controlled use by downstream users. Closure requires the BNI to place actions associated with the RCA in the CMPF.

6.0 REFERENCES AND PERSONNEL CONTACTED

6.1 References

- 24590-WTP-PL-MG-01-002, Revision 3, *WTP Configuration Management Plan*, dated February 20, 2004
- 24590-WTP-GPG-M-046, Revision 3, *Design Guide for Component Information System*, dated August 26, 2004
- 24590-WTP-3DP-G04T-00901, Revision 5, *Design Change Control* (only the sections dealing with the Change Document List [CDL] process), dated November 11, 2004
- 24590-WTP-GPP-CON-4103, Revision 0, *Subcontract Surveillance, Acceptance, and Closeout*, dated July 29, 2004
- 24590-WTP-GPP-CON-6201, Revision 4, *Equipment Preservation and Maintenance*, dated June 30, 2005
- 24590-WTP-3DP-G04B-00047, Revision 3, *Engineering Deliverables to Construction and Startup/Commissioning*, December 23, 2004
- 2450-WTP-3DP-G04B-00058, Revision 4, *Supplier Engineering and Quality Verification Documents*, dated August 8, 2005

- 24590-WTP-3DP-G03B-0004, Revision 4, *Standard Component Numbering*, dated June 16, 2005
- 24590-WTP-LIST-CON-04-0001, Revision 5, *Systems Under Construction Custody*, dated September 14, 2005
- 24590-WTP-PL-ENG-04-0003, Revision 5, *2005 Engineering Processes Surveillance Plan and Schedule*, dated July 20, 2005
- 24590-WTP-MAR-ENG-05-0012, *Configuration Management Assessment-September 2005*, dated October 14, 2005
- 24590-WTP-SC-QA-01-00, Revision 11, *WTP Quality Assurance Internal Audit Schedule*, dated April 27, 2005
- 24590-WTP-IAR-QA-04-011, Revision 0, *Field Engineering*, dated October 18, 2004
- 24590-WTP-IAR-QA-04-013, Revision 0, *Quality Control*, dated October 29, 2004
- 24590-WTP-IAR-QA-04-010, Revision 1, *Design Execution Audit*, dated January 04, 2005
- 24590-WTP-MAR-ENG-04-0016, Revision 0, dated 12/21/04, *CIS Management Assessment Report – CIS Implementation*
- DocSearch results for CDL's issued on WTP, dated October 24, 2005
- CMPF 2.1 – Standard component tag design; 24590-WTP-3PS-M000-T0014, Revision 0, dated 9/7/04, *Engineering Specification for Labeling of Permanent Plant Components*
- CMPF 3.1 – Spare parts control; 24590-WTP-RITS-QAIS-04-402, Revision 0, dated 5/18/04, Spare and replacement parts material control process; CCN: 083001, dated 8/6/04; 24590-WTP-CAR-QA-05-146, Revision 0, dated 7/12/05
- CMPF 1.4 – Engineering deliverables to Commissioning; 24590-WTP-3DP-G04B-00047, Revision 3, dated 12/23/04, *Engineering Deliverables to Construction and Startup/Commissioning*
- CMPF 5.1 – SSC turnover; 24590-WTP-GPP-CON-3607, Revision 1, *Operation of Systems Under Construction Custody*
- 24590-CM-HC1-MECM-0001-27-09
- 24590-CM-HC1-MECM-0001-03-1
- 24590-BOF-M6-PSA-00004, Revision 3, dated January 13, 2005, *P&ID-BOF Plant Service Air System Heat-of-Compression Dryers*
- 24590-BOF-M6N-PSA-00020, dated October 14, 2005, *Drawing Change Notice – Chiller Compressor Plant Instrument Addition*
- 24590-BOF-M6-PSA-00005, Revision 3, dated January 13, 2005, *P&ID-BOF Plant Service Air System Air Receivers*
- 24590-CM-POA-MCCA-00001-01-29, Revision 00F, dated May 11, 2005, *Sahara Air Products Heat of Compression Dryer HC-10,000 w/ 10" Line Size P&ID, and companion sheets 2 and 3 displaying mechanical and instrument tags*
- 24590-CM-POA-MCCA-00001-01-25, Revision 00E, dated March 23, 2005, *P&ID - Overview*
- INTTools Report for PSA Instruments dated October 20, 2005
- CIS Report for PSA Components dated October 20, 2005
- 24590-WTP-CAR-QA-04-096, Revision 0 (Level 2), dated July 19, 2004, *Fire Service Water (FSW System)*

- 24590-WTP-CAR-QA-04-134, Revision 0 (Level 1), dated August 19, 2004, CIS updates
- 24590-WTP-CAR-QA-05-202, Revision 0, dated August 30, 2005, Failure to issue CDL for design change
- 24590-WTP-CAR-QA-04-238, Revision 0 (Level 2), dated December 14, 2005, Less than 100% data entry into CIS
- 24590-WTP-SV-QA-04-627, Revision 0, dated December 23, 2004, Effectiveness Follow-up for CAR 03-144, Revision 1
- 24590-WTP-CAR-QA-05-083, Revision 0 (Level 4), dated Jun 13, 2005, Gaps in the margin of quality level information from design documents to procurement documents
- 24590-WTP-RCA-MGT-05-0002, Revision 1, Root Cause Analysis for Quality Level Implementation, dated August 18, 2005
- 24590-WTP-CAR-QA-05-099, Revision 0 (Level 2), dated June 2, 2005, Required data in the controlled state in CIS is inaccurate
- 24590-WTP-SV-QA-05-422, Revision 0, dated July 14, 2005, Follow-up to CAR 04-238 and SV-QA-04-627
- 24590-WTP-CAR-QA-05-035, Revision 0 (Level 2), dated March 10, 2005, Pipe spool CTN numbers not in CIS database
- 24590-WTP-RITS-QAIS-05-705, dated July 21, 2005, Define and implement proper controls for quality-affecting activities requiring the use of CIS data
- 24590-WTP-SV-QA-05-422, Revision 0, dated July 14, 2005, Follow-up to CAR 04-238 and SV-QA-04-627
- 24590-WTP-CAR-QA-05-186, Revision 0 (Level 2), dated August 11, 2005, Components on subcontractor as-built drawing (for Cooling Towers) not entered in CIS
- 24590-WTP-CAR-QA-05-217, Revision 0 (Level 2), dated September 15, 2005, Discrepancies between P&ID and CIS
- 24590-WTP-RITS-QAIS-05-705, dated July 21, 2005, Define and implement proper controls for quality-affecting activities requiring the use of CIS data
- 24590-WTP-GPG-J-018, Revision A, dated May 30, 2003, *Design Guide: INTools Database*
- 24590-WTP-CAR-QA-04-080, Revision 0 (Level 2), dated June 11, 2004, Discrepancy on data in INTools
- 24590-WTP-CAR-QA-04-214, Revision 0, dated November 16, 2004, Instrument datasheet versus P&ID data
- 24590-WTP-SV-QA-05-286, Revision 0, dated June 22, 2005, Follow up to CAR 24590-WTP-CAR-QA-04-214, *INTools* versus primary design document
- 24590-WTP-RITS-QAIS-05-795, dated August 16, 2005, Supplier design component identification process gap

6.2 Personnel Contacted

J. Pullen, Engr.
J. Forrest, Engr
C. Lasley, Engr.

Review of Contractor Process for CM Assessment (D-05-Design-020)

M. Hoffman, Engr
P. Talmage, QA
M. Wilson, Engr
J. Hummer, Engr
M. Delamare, Engr
B. Busch, Engr
D. Kammenzind, QA
M. Ehlinger, QA
S. Lynch, Engr
H. Moorman, Engr
D. Piscarik, Engr
J. Hummer, Engr
L. Haven, Construction
T. Minor, Construction
J. Wright, Construction
E. Palmer, PADC
D. Threthaway, PADC
R. Ashley, Construction
B. Lynch, C&T
J. Schott, C&T
D. Wallace, PAC
D. Eggenbraten, Engr
T. Hughes, Construction

Review of Contractor Process for CM Assessment (D-05-Design-020)

Appendix A - Oversight Plan

DESIGN PRODUCT OVERSIGHT PLAN

**REVIEW OF CONTRACTOR CONFIGURATION
MANAGEMENT/FIELD DOCUMENT CONTROL PROCESSES**

October 16, 2005

Design oversight: D-05-DESIGN-020

Team Lead: James E. Adams

Submitted

_____ Date _____
James E. Adams, Team Lead
WTP Engineering Division

Concurrence

_____ Date _____
William F. Hamel, Director
WTP Engineering Division

Approval

_____ Date _____
John Eschenberg, Project Manager
Waste Treatment and Immobilization Plant

1.0 BACKGROUND, PURPOSE AND OBJECTIVES

1.1 Background

The River Protection Project Waste Treatment Plant (RPPWTP) Facilities are continuing the facilities' design and construction in a reduced work mode due to the Revised Ground Motion Implementation Plan (RGM Plan). The Contractor had just completed the annual configuration management (CM) self-assessment.

The DOE ORP scheduled the design oversight of CM program through the FY 06 Integrated Assessment Schedule to verify the project design, construction, and commissioning programs maintain CM through the BNI Configuration Management Plan (CM Plan) and implementing procedures.

The recent ORP WED Design Oversight Report D-05-DESIGN-016 *Non-Conformance Reporting* determined the RGM Plan effectively utilized NCRs as control process for continued work while the seismic loadings were being recalculated allowing limited facility work to continue. However, during the assessment, a significant CAR (CAR-QA-05-083) required the completion of a Root Cause Analysis, which impacted the quality of the configuration management (CM) database Component Information System (CIS) (quality levels of components conflicting between primary design documents). The RCA also defined problems with the accuracy of some of the CIS information. This design oversight focused on identifying CM process issues based on a review of field document control prints, the *Infoworks* database, the CIS database, various design media, and the installed condition of balance-of- facility and important-to-safety components for selected systems.

1.2 Purpose

This design oversight purpose is to confirm BNI effectively implements the CM Plan using approved implementing procedures to design and construct systems.

1.3 Objectives

The specific objectives of this oversight are:

- 1) Review the current CM Plan and supporting implementing procedures for implementation effectiveness and incorporation of Bechtel National, Inc. (BNI) identified issues to the CM Plan via the 2004 CM Path Forward (CMPF) commitments.
- 2) Evaluate the problems associated with the Component Information System (CIS) database and determine if it has a negative trend requiring Contractor attention.
- 3) Evaluate a sampling of the components installed in the facility (by walkdown in field and by database comparisons) to verify the information in CM databases are consistent with the other design media such as the *Infoworks* database and the design drawings (as-builts).

- 4) Review the effectiveness of BNI oversight of the CM Plan by review of management assessments, QA audits, QC surveillances, and Subcontractor oversight associated with the CM program.
- 5) Review a sampling of the drawings on the controlled stick files for comparison to the CM database *Infoworks*.

2.0 PROCESS

This oversight shall be conducted within the guidelines of ORP PD 220.12, issued February 12, 2003, "Conduct of Design oversight."

2.1 Scope

This oversight will review the configuration managed (CM) processes and the CM database used to support the topic. This will include procedures, databases, design drawings, and oversight documents that describe the CM processes and products.

This oversight will also include monitoring the BNI CM Plan internal functioning to assess effectiveness in maintaining adequate design CM.

2.2 Preparation

- a. Identify the BNI point of contact for the review.
- b. Establish the scope and elements of the design processes under review.
- c. Identify and review the Contract and requirements source documents.
- d. Review background information as provided by BNI and identified through review of available databases.
- e. Review previously performed BNI design review reports, documentation, open issues, and the plans for and status of their resolution.
- f. Review the applicable design processes and a sample of the resulting design deliverables.
- g. Table 1 lists information requested from the Contractor to initiate this oversight.

2.3 Review and identify, resolve or document issues

Evaluate the selected attributes and develop lines of inquiry and specific questions to explore with cognizant BNI personnel to meet the oversight objectives. This phase will be documented in summary tables shown in ORP PD 220.12, issued February 12, 2003, "Conduct of Design oversight," Attachment 9.4, Appendix A. This effort will include participating in any applicable internal BNI reviews and discussions. The output from this phase of the oversight will be a

completed summary table with BNI responses to the questions and lines of inquiry, and a list of remaining open issues needing further evaluation by BNI for resolution.

2.4 Reporting

Debrief ORP and BNI management periodically as required. Prepare a draft report that summarizes the activities, the results, conclusions and recommendations of the review. Issue the Draft Design oversight Report for review and comment of 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 oversight completion schedule.

4.0 DOCUMENTATION

The final report of this task shall contain the sections and content summarized in ORP PD 220.12, issued February 12, 2003, "Conduct of Design oversight," Attachment 9.4, "Design oversight Report Outline."

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

5.0 CLOSURE

The team leader shall confirm, with concurrence of the Director, open items from this oversight are adequately resolved.

Table 1 – Initial Information Requirements

1.	Oversight documents from both QA and engineering associated with the CM program. This includes surveillances, management assessments, QA audits, Corrective Action Reports, subcontractor audits/surveillances/etc, on the NCR process.
2.	Listing and status of CARs associated with CM with any Root Cause Analysis.
3.	Listing of approved system descriptions providing CM to design.
4.	Listing of major installed configured components for selected systems and the as-built drawings for systems selected for walk down.
5.	Presentation on CIS explaining how CIS is validated and the current status of validating for installed components as per CAR-05-083.
6.	Most recent version of Configuration Management Plan and referenced implementing procedures.

Review of Contractor Process for CM Assessment (D-05-Design-020)

Table 2 – Schedule

Activity Description	Responsibility	Complete By
Develop Design Product Oversight Plan.	Team Lead	10/03/05
Identify team members.	Hamel	10/03/05
Obtain documents from Contractor and do field walkdowns of selected systems.	Team	10/11-14/05
Kick-off meeting with BNI Discipline Engineering Managers to outline objectives, scope, schedule, and establish points of contact.	Team	10/17/05
Field document control review.	Adams	10/18-20/05
Review BNI CM documents, participate in relevant Contractor internal meetings and meet with Contractor as required.	Davis/ Orchard/ Adams/ Cooper	10/17/05- 10/24/05
Prepare draft design oversight report.	Team	10/28/05
ORP and BNI review of report.	Team and Contractor	11/30/05
Resolve comments and issue final report including close out with BNI.	Team	12/04/05

Review of Contractor Process for CM Assessment (D-05-Design-020)

Appendix B - Assessment Note D-05-DESIGN-RPPWTP-0020-01

DESIGN OVERSIGHT NOTE

Design oversight Note Number: D-05-DESIGN-020-01

Design oversight Name(s): Richard Cooper Dates of Inspection: October 17 - 28, 2005

Areas/Item(s) Inspected: Configuration Management Program Compliance

The Design oversight reviewed the Configuration Management (CM) Plan, associated implementing procedures, the completed actions of the Configuration Management Path Forward (CMPF), and recent corrective action reports to determine the effectiveness of implementation of the CM Plan element "Configure Item Identification and Control". The CM Plan and the CMPF were also reviewed for progress on developing and implementing processes to assure CM is maintained during and after construction turnover.

Observations and Assessments

The Design oversight reviewed the following documents to verify the CM Plan was being effectively implemented by approved procedures:

- 24590-WTP-PL-MG-01-002, Revision 3, dated February 20, 2004, *WTP Configuration Management Plan*
- 24590-WTP-GPG-M-046, Revision 3, dated August 26, 2004, *Design Guide for Component Information System*
- 24590-WTP-3DP-G04T-00901, Revision 5, dated November 11, 2004, *Design Change Control* (only the sections dealing with the Change Document List [CDL] process)
- 24590-WTP-CAR-QA-05-202, Revision 0, dated August 30, 2005, Failure to issue CDL for design change
- 24590-WTP-GPP-CON-4103, Revision 0, dated July 29, 2004, *Subcontract Surveillance, Acceptance, and Closeout*
- 24590-WTP-GPP-CON-6201, Revision 4, dated June 30, 2005, *Equipment Preservation and Maintenance*
- 24590-WTP-3DP-G04B-00047, Revision 3, December 23, 2004, *Engineering Deliverables to Construction and Startup/Commissioning*
- 2450-WTP-3DP-G04B-00058, Revision 4, dated August 8, 2005, *Supplier Engineering and Quality Verification Documents*
- 24590-WTP-3DP-G03B-0004, Revision 4, dated June 16, 2005, *Standard Component Numbering*
- 24590-WTP-LIST-CON-04-0001, Revision 5, dated September 14, 2005, Systems Under Construction Custody
- DocSearch results for CDL's issued on WTP, dated October 24, 2005
- 24590-WTP-CAR-QA-05-035, Revision 0 (Level 2), dated March 10, 2005, Pipe spool CTN numbers not in CIS database
- 24590-WTP-RITS-QAIS-05-705, dated July 21, 2005, Define and implement proper controls for quality-affecting activities requiring the use of CIS data

- 24590-WTP-SV-QA-05-422, Revision 0, dated July 14, 2005, Follow-up to CAR 04-238 and SV-QA-04-627

Configured Item Identification and Control

The Design oversight reviewed the CM Plan, Section 5.0 and associated implementing procedures 24590-WTP-3DP-G03B-0004, Standard Component Numbering, and 24590-WTP-GPG-M-046, Design Guide for Component Information System to differentiate between the terms “configured item” and “component” to determine how “configured items” and “components” were identified, tracked, and controlled under the CM Plan.

The WTP CM Plan defined “configured item” as “a structure, system, or component (SSC) that was specifically identified in the design process as an entity whose physical and functional characteristics can be separately managed to achieve overall plant performance that complies with the design basis.” Configured items (CI) included:

- “SSC – WTP site, facilities, and structures, systems, and components (SSC’s are treated as unique entities subject to CM when physically installed in the designated location or when physically identified by marking, labeling, or tagging) with a unique identification number assigned to the SSC in an approved design document

The Design oversight review of 24590-WTP-GPG-M-046, *Design Guide for Component Information System*, determined “components” and “subcomponents” were defined by unique Component Tag Numbers (CTN) in CIS per the below definitions.

- Component – uniquely identified hardware to be installed at a specific location – may be individual devices (such as instruments or electro-mechanical equipment) or an assembly/skid.
- Subcomponent – uniquely identified piece of a component that must be acted upon by an individual for isolation, manipulation, control, adjustment, or maintenance, typically one level down from the component. Not all pieces of a component are subcomponents.

The Design oversight determined the definition of component (as discussed above) was revised in the Standard Component Numbering Section 3.3 statement “Some components do not require entry in the CIS/INtools/SETROUTE databases because unique identification of these components is not required for the operation, testing, and maintenance of the facility.” This now makes the components a subset of the term configured item (with most components identified and tracked in the CIS database). This revision was based on the corrective actions in CAR-05-035, which involved pipe spool CTN numbers not being loaded into the CIS database. Engineering Processes concluded this condition was acceptable, because the subject CIs were not required for operation, testing, or maintenance of the facility (although the piping does have pressure codes information for in-service inspection). The response went on to state other components assigned CTN’s do not require entry into CIS because unique identification of these component types is not required for the operation and maintenance of the facility. Examples of these components were pipe spools, HVAC ducting, and pipe supports. Procedure 24590-WTP-3DP-G03B-00044, “Standard Component Numbering” was revised to make this distinction, and

now contain this restrictive interpretation. The CAR was accepted by QA and closed on June 21, 2005.

The Design oversight review of the CM Plan statement "Engineering maintains the CIS and *INtools* databases for identifying and controlling configured items and supporting data," determined the Standard Component Numbering procedure's statement in section 3.3 appeared to conflict with the CM Plan Section 5.3.

The Design oversight provided the report to Contractor Engineering management for factual accuracy relative to these questions to get clarification on the intentions of the CM Plan and implementing procedures in this area. The Contractor provided the clarification that CIS does not track and control all configured items, but rather only those components required for operations, maintenance and testing as stated in the component numbering procedures. The remainder of CIs are tracked and controlled via the design documents controlled by the CM database *Infoworks*.

The Design oversight concluded the definition of what constitutes a "configured item" (SSC supporting design CM) differs from the definition of "component" (required for operation, maintenance and test purposes supporting operational CM). The distinction between these terms is not clearly differentiated in the CM Plan and subsequent implementing procedures, thus creating some amount of confusion relative to the purpose of CIS. The clarification of the program and associated procedures relative to use of CIS for numbering components and maintaining quality CM data for components for the Component Maintenance Management Systems (CMMS) downstream user (supporting operational CM) issue will be tracked by Assessment Follow-up Item (AFI) A-05-AMWTP-DESIGN-020-A01.

CM Plan and Implementing Documents

The Design oversight also reviewed the CM Plan and the CMPF for incorporation of CMPF commitments to support future CM needs and the effectiveness of newly included program changes.

1) Configuration Management Path Forward (CMPF)

This CMPF was originated by the Contractor for the last two years to consolidate problems with CM, and to track CM recommendations for the startup/commissioning phase of the project. The following CMPF Issues and their associated documents were reviewed against the status described in 24590-WTP-MAR-ENG-05-0012, dated 10/14/05, Configuration Management Assessment – September 2005:

- CMPF 1.4 – Engineering deliverables to Commissioning; 24590-WTP-3DP-G04B-00047, Revision 3, dated 12/23/04, Engineering Deliverables to Construction and Startup/Commissioning
- CMPF 2.1 – Standard component tag design; 24590-WTP-3PS-M000-T0014, Revision 0, dated 9/7/04, Engineering Specification for Labeling of Permanent Plant Components
- CMPF 3.1 – Spare parts control; 24590-WTP-RITS-QAIS-04-402, Revision 0, dated 5/18/04, Spare and replacement parts material control process; CCN: 083001, dated 8/6/04;

24590-WTP-CAR-QA-05-146, Revision 0, dated 7/12/05, At this time the project is not documenting the decisions relating to classifying components

- CMPF 5.1 – SSC turnover; 24590-WTP-GPP-CON-3607, Revision 1, Operation of Systems Under Construction Custody

With one exception, the actions taken adequately addressed the CMPF issues. The exception was CMPF Issue 3.1 associated with RITS 04-402. The “current condition” was described as follows:

Spare parts, controlled as subcomponents or piece parts of equipment (e.g., the spare is not in CIS or identified on design documents) need to be controlled to maintain the equipment within design.

The action required developing a material control process for such items to ensure that spare parts are properly identified and related to installed components. The issue as well as the RITS shows “complete” on the CMPF.

The Evaluation Summary for this item in the CM Assessment notes the Acquisition Services Supply Chain (ASSC) group developed a numbering schema to address this issue that would be controlled in the Computerized Maintenance Management System (CMMS), and which was described in CCN 083001, dated 8/6/04. This “white paper” purportedly closed out the RITS but described a plan for addressing the issue with no implementation of the plan. Review of this issue in the CMPF notes the quality levels and seismic classifications of mechanical and instrument subcomponents and piece parts are made using Engineering design guides – this information and the basis for it are not entered into CMMS, CIS, or *INTools*, nor does it use the numbering schema described in the cited CCN “white paper.” The CM Assessment further cites CAR 05-146 (project is not documenting decisions related to classifying components) as containing action to investigate the best method to make information available for use in CMMS, and this pending action will be subsumed in the 2005 CMPF. The assessor reviewed the cited CAR and could not find the aforementioned action.

The Design oversight concluded the CM Plan continued to be modified though commitments listed in the CMPF updates based on Contractor self assessment and ORP assessments. The majority of part CMPF items have been included but some still remain with others needing to be re-listed. However, when the Design oversight requested the current update to the CMPF for incorporation of issues and deficiencies based on Contractor self assessment, audits and corrective action reports, but it was not available till November 2005. Hence, Observation A-05-AMWTP-DESIGN-020-002 will track this until the update of the CMPF is issued in November 2005, at which time it will be compared to this report for inclusion of issues.

2) Implementation of New Programs in the CM Plan

The Contractor developed and implemented several processes that effectively support CM during the Construction phase of the Project. In addition, several new processes were developed in anticipation of supporting Startup/Commissioning and some have been implemented. The CM

Plan also contains “place holders” for future processes supporting Startup/Commissioning. Among these are:

- Plans, procedures, or guides for control of quality information in databases owned/shared by Engineering, Commissioning and Training, and Environmental and Nuclear Safety – needed to support technical evaluation of proposed design changes to waste compliance and throughput, external interface agreements, and operating and maintenance considerations
- Equivalent Change process and procedures
- Temporary Modification process and procedures
- Commissioning and Training work control process and procedures
- Design Change Package process and procedures
- Cold and Hot Commissioning process and procedures

Several of the above items are contained in the past CMPF listings with a few of these procedures not yet completed but are imminent to issuance.

The Design oversight reviewed a process change related to maintaining CM that was implemented through the Design Change Control process in November 2004 - the Change Document List (CDL). The CDL notifies Construction when a design change initiated by Engineering affects the physical configuration of a subcontractor/supplier provided SSC that has already been turned over to Construction. From inception of the CDL process to October 24, 2005, 199 CDL's had been issued on WTP - the majority of these involved revising isometric drawings or modifying/canceling pipe supports.

The Design oversight reviewed CAR's from late 2004 and 2005 to identify any related to CDL implementation. A single CAR was found (CAR-05-202, A CDL was not issued for a design change) pertaining to problems with CDL's. The design change involved system PWD in the PTF facility where changes were made to the temperature and pressure of specific lines that had already been coated, installed, and tested to previously issued design parameters. The cause and extent of condition discussions in the CAR were focused on the fact that when the CDL process was first described in WTP procedures, it did not require a CDL for changes to inspection and test requirements. This drove creation of a corrective action to align the Design Change Control and CDL Instructions to make it clear that changes to inspection and test requirements call for issuance of CDL's. The Design oversight questioned whether changes to isometrics (other than for the installed underground piping) resulting from the original design change should have also warranted origination of a CDL. The BNI review revealed the subject isometrics were on hold pending changes to their related P&ID's at the time of the original design change. Because of this, no change to received or installed piping (except for installed underground piping) resulted from the original design change, and no CDL was required (except for the one concerning the change to hydrostatic test pressure).

Conclusion

The Design oversight concluded the Configuration Management Plan and its associated implementing procedures are being effectively implemented with no adverse findings. However, the BNI Corrective Action Program has documented some issues showing confusion in the

Review of Contractor Process for CM Assessment (D-05-Design-020)

program and procedures that require clarification for the implementation of the CM database Component Information System (CIS). The Contractor has committed to a Root Cause Analysis to determine the needed implementation changes to clarify the program and implementation for CIS, which will be tracked by Assessment Follow-up Items (AFI) A-05-AMWTP-DESIGN-020-01. In addition, the BNI 2005 CM Management Self Assessment had identified issues for correction to the program which have not been placed on the 2005 CMPF yet. Observation A-05-AMWTP-DESIGN-020-002 will track this until the update of the CMPF is issued in November 2005.

Review of Contractor Process for CM Assessment (D-05-Design-020)

Appendix C - Assessment Note D-05-DESIGN-RPPWTP-0020-02

ASSESSMENT NOTE**Inspection Note Number: D-05-DESIGN-020-02****Assessors Name(s): Richard Cooper Dates of Inspection: October 17 - 27, 2005****Areas/Item(s) Inspected: CM Implementation (Design CM)**

The Design oversight performed a series of implementation reviews to determine if the CM Plan was effectively being implemented. These included the following:

- A walk down of a balance of facility (BOF) system using selected subcontractor as-built drawings
- A walk down of the temporary power distribution for CM of as-builts sketches
- A CM document comparison for another partially completed BOF system for completeness and accuracy of component identification information in the CM databases Component Information System (CIS) and the instrument database INtools relative to these components.
- A trend analysis of corrective action reports for the CIS database
- A trend analysis of corrective action reports for the *INtools* database
- A walk down of field controlled print files for comparison to the CM database *Infoworks*
- The Design oversight interviewed Construction, Engineering and Quality Assurance management and staff relative to the results of this walk down and document comparison to determine if a negative trend had developed relative to the effectiveness of CM implementation.

Observations and AssessmentsSystem Walk Down

The Design oversight walked down selected drawings (one isometric and one electrical distribution panel labeling) for a recently completed balance of facility (BOF) system (Cooling Tower and Support System). This walk down was used for verification of completeness and accuracy of the as-built drawings to the field conditions.

The following Subcontractor certified as-built prints were used in the walk down of the Cooling Tower and Support systems:

- 24590-CM-HC1-MECM-0001-27-09
- 24590-CM-HC1-MECM-0001-03-1

The results of this walk down of mechanical and electrical equipment associated with the cooling towers determined the following:

- Equipment tag numbers did not agree with information on the as-built prints (PCV-V-12322 and 12210),
- Two valves had tags in the field, but were not labeled on print (PCV-V-12234/12244),

- One installed instrument was not labeled and was not shown on the prints (down stream of valve PCW-V-12237),
- Electrical equipment labels on motor control centers (LVE-MCC-83001A and 1B) did not agree with the equipment descriptions shown on the prints.

The Contractor's representation indicated, during a debriefing interview, the equipment had been walked-down by BNI and confirmed to be consistent with the prints. The Contractor later explained the system had not yet been turned over from the subcontractor and the permanent labeling had not yet been placed.

The Design oversight's review of the BNI *2005 CM Self Assessment* determined the Contractor had also discovered no instruments (Subcontractor drawings 24590-CM-HC1-MECM-00001-27-40 R/00E and 24590-CM-HC1-MECM-00001-27-39 R/00F) had been entered in *INTools* (hence the instruments were not in CIS either) for this same system. This was documented on August 16, 2005 as RITS 05-795, "Supplier design component identification process gap," which has not yet been disposition for closure. The Contractor determined the Supplier Engineering and Quality Verification Documents procedure required CIS be updated when supplier/subcontractor drawings serve as the source of information for components, but did not require updating *INTools* to capture equivalent information for instruments. The corrective actions for RITS 05-795 were not known at the time of the assessment.

Temporary Electrical Distribution Walk Down

The Design oversight also performed a walk down on October 19, 2005 (walk down report attached) of the temporary electrical distribution system used for construction purposes.

The walk down was performed with the construction field engineer responsible for the construction electrical as-built drawings 24590-BOF-CON-E-05-001 Sheets 1-5 with the latest revision of October 17, 2005. As noted in the walk down notes, discrepancies were identified. This issue was brought to the attention of the ORP facility representative and the Field Engineering Manager.

The Design oversight determined the field sketch as-built prints were being upgraded to support the lock and tag program and construction operations of temporary systems for construction. The interview with the Lock and Tag Authority indicated no lock and tags would be issued if the prints didn't match the panels. This issue requires no action from this assessment.

The Design oversight walk down effort concluded, although some discrepancies were noted between as-designed and as-built, as well as between as-built drawings and CM database printouts, the correlation was very close. Noting that the formal labeling process had not been implemented, and the turnover program had not yet fine-tuned the system documentation, the existing condition was considered adequate at this point in the construction program. No issues were identified for this assessment with minor notations of discrepancies documented in walk down reports given to the Contractor and ORP management.

System CM Document Comparison

The Design oversight also compared the P&IDs with the *INTool* printout for the Plant Service Air System to determine the CM correlation between the approved P&IDs and the CM database information, to determine whether the CM Plan was being effectively implemented by the Contractor:

- 24590-BOF-M6-PSA-00004, Revision 3, dated 1/13/05, P&ID-BOF Plant Service Air System Heat-of-Compression Dryers
- 24590-BOF-M6N-PSA-00020, dated 10/14/05, Drawing Change Notice – Chiller Compressor Plant Instrument Addition
- 24590-BOF-M6-PSA-00005, Revision 3, dated 1/13/05, P&ID-BOF Plant Service Air System Air Receivers
- 24590-CM-POA-MCCA-00001-01-29, Revision 00F, dated 5/11/05, Sahara Air Products Heat of Compression Dryer HC-10,000 w/ 10” Line Size P&ID, and companion sheets 2 and 3 displaying mechanical and instrument tags
- 24590-CM-POA-MCCA-00001-01-25, Revision 00E, dated 3/23/05, P&ID - Overview
- INTTools Report for PSA Instruments dated 10/20/05
- CIS Report for PSA Components dated 10/20/05

The assessor reviewed instruments and components (only valves) on P&ID 24590-BOF-M6-PSA-00004, Revision 3, P&ID 24590-BOF-M6-PSA-00005, Revision 3, and the associated DCN 24590-BOF-M6N-PSA-00020, and compared these to Contractor-provided printouts from CIS and INTTools. The review revealed a large number of apparent discrepancies, which were later resolved by the Contractor providing the current design documents.

The Design oversight review of selected configured items/components in approved design drawings and CM databases eventually resulted in identification of no discrepancies. As an Observation, the Design oversight was disappointed in the quality of the CM database printouts initially provided by the Contractor for the review was information only and was not properly posted with the latest CM information on the print. No follow-up or tracking will be done for this Observation.

Trend Analysis of Corrective Action Program Data Relative to Completeness and Accuracy of CM Databases

The assessors reviewed Contractor surveillances, audits, management self assessments, and corrective action reports to determine if a negative trend existed in implementation of the CM Plan relative to CM Databases (e.g., CIS, *INTools*, and *InfoWorks*)

Component Information System (CIS) Analysis

Background

CIS is the Configuration Management (CM) database for WTP equipment (other than instruments) and as such, is required to be maintained complete and accurate. CIS' principal CM

functions are to assign unique Component Tag Numbers (CTN) to configured items and establish relationships between these and other components, design documents and drawings. "Working" and "Controlled" design information associated with configured items is input and maintained in CIS. When changes to the design of systems and/or configured items are made via revised design documents, information in CIS must be updated to align with the revised design. Data from CIS is used by downstream applications and project teams to determine design rigor, procurement methodology and construction standards, as well as for planning purposes. From a more detailed perspective, several important design values are calculated and assigned by CIS based on fields that are automatically and manually populated (Quality Level, piping insulation thickness, hydrostatic test pressure, and shop paint code). Inaccurately entered data in these instances may result in incorrect QL, insulation thickness, hydrostatic test pressure, and specification of protective coatings for piping.

The Computerized Maintenance Management System (CMMS) is a database that is being populated with data from CIS, as well as other databases. CMMS is used to manage preservation maintenance on temporary and installed equipment in the Construction phase, and will be used to manage plant maintenance on installed equipment through the Startup and Commissioning phase. Therefore, the accuracy and completeness of configured item data in CMMS will have a direct influence on assuring the correct maintenance activities are scheduled so ITS and non-ITS SSC's are maintained consistent with their design bases.

The following documents were reviewed:

- 24590-WTP-PL-MG-01-002, Revision 3, dated 2/20/04, WTP Configuration Management Plan
- 24590-WTP-GPG-M-046, Revision 3, dated 8/26/04, Design Guide for Component Information System
- 24590-WTP-CAR-QA-05-035, Revision 0 (Level 2), dated 3/10/05, Pipe spool CTN numbers not in CIS database
- 24590-WTP-MAR-ENG-04-0016, Revision 0, dated 12/21/04, CIS Management Assessment Report – CIS Implementation
- 24590-WTP-CAR-QA-04-096, Revision 0 (Level 2), dated 7/19/04, Fire Service Water (FSW System)
- 24590-WTP-CAR-QA-04-134, Revision 0 (Level 1), dated 8/19/04, CIS updates
- 24590-WTP-CAR-QA-04-238, Revision 0 (Level 2), dated 12/14/04, Less than 100% data entry into CIS
- 24590-WTP-SV-QA-04-627, Revision 0, dated 12/23/04, Effectiveness Follow-up for CAR 03-144, Revision 1
- 24590-WTP-CAR-QA-05-035, Revision 0 (Level 2), dated 3/10/05, Pipe spool CTN numbers not in CIS database
- 24590-WTP-CAR-QA-05-083, Revision 0 (Level 4), dated 5/13/05, Gaps in the margin of quality level information from design documents to procurement documents
- 24590-WTP-CAR-QA-05-099, Revision 0 (Level 2), dated 6/2/05, Required data in the controlled state in CIS is inaccurate
- 24590-WTP-SV-QA-05-422, Revision 0, dated 7/14/05, Follow-up to CAR 04-238 and SV-QA-04-627

- 24590-WTP-MAR-ENG-05-0012, dated 10/14/05, Configuration Management Assessment – September 2005
- 24590-WTP-CAR-QA-05-186, Revision 0 (Level 2), dated 8/11/05, Components on subcontractor as-built drawing (for Cooling Towers) not entered in CIS
- 24590-WTP-CAR-QA-05-217, Revision 0 (Level 2), dated 9/15/05, Discrepancies between P&ID and CIS
- 24590-WTP-RITS-QAIS-05-705, dated 7/21/05, Define and implement proper controls for quality-affecting activities requiring the use of CIS data

The following is a Contractor oversight summary, shown in chronological order, of problems documented with the completeness and accuracy of CIS:

- **CAR 04-096, Revision 0 (Level 2), dated 7/19/04, “Fire Service Water (FSW System)”** – FSW was operating to support construction with components not labeled or entered in CIS. CAR closed 1/6/05.
- **CAR 04-134, Revision 0 (Level 1), dated 8/19/04, “CIS updates”** – CIS not updated for change in quality level and seismic category for black cell vessel steam ejectors. CAR closed 1/7/05
- **24590-WTP-MAR-ENG-04-0016, Revision 0, dated 12/21/04, “CIS Management Assessment Report – CIS Implementation”** – performed as follow up to actions taken in response to CAR 03-144 and RITS items 04-401 and 04-1073. MA concluded that actions, performance, and data quality associated with CIS implementation on project, completed and planned, are adequate to support WTP as it moves forward. However, the MA found there was less than 100% compliance for data entry in the minimum required data fields, documenting this in CAR 04-238.
- **CAR 04-238, Revision 0 (Level 2), dated 12/14/04, “Less than 100% data entry into CIS”** – actions prescribed/taken were largely remedial to identify and provide the missing data. Although the cause appeared to be “procedural noncompliance on the part of personnel responsible for data entry into CIS,” the only action to directly address it was a reminder to engineering staff about data entry expectations disseminated in a monthly Engineering Quality Presentation, January 2005. A further action was to continue monitoring for missing CIS data via existing metrics. CAR closed 4/7/05.
- **24590-WTP-SV-QA-04-627, Revision 0, dated 12/23/04, “Effectiveness Follow-up for CAR 03-144, Revision 1”** (included review of MAR-ENG-04-0016 on CIS implementation) – concluded that actions have been effective in improving the completeness and quality of data in CIS, to the extent that improvements are real and lasting. It stated additional independent surveillance is needed to ensure remaining CIS quality, data completeness, and functionality problems are adequately and timely addressed.
- **CAR 05-035, Revision 0 (Level 2), dated 3/10/05, “Pipe spool CTN numbers not in CIS database”** – concluded that this was acceptable, because the subject components were not

required for operation, testing, or maintaining the facility. The procedure for standard component numbering was revised to clarify this. CAR closed 6/21/05.

- **CAR 05-083, Revision 0 (Level 4), dated 5/13/05, "Gaps in the margin of quality level information from design documents to procurement documents"** – This is a broad-based issue on which a RCA was performed (however, not directed at identifying causes for data problems in CIS). The RCA performed an assessment of design process vulnerability of the quality level as it flows through the design process. The assessment identified opportunities to:
 - Incorrectly enter the QL in an application (some involve checking and some do not)
 - Fail to update QL information to remain consistent with approved design
 - Alter information in an application after the design is issued creating an inconsistency

Although none of the vulnerabilities were known to have caused adverse QL implementation, they were treated as contributing causes with recommended actions to address them. Three actions related to CIS:

- Halt updates of data into project databases (CIS, *INtools*, *SetRoute*) using Oracle batch imports
- Identify all components in CIS with more than one QL assignment and correct this to reflect the valid value, and modify the process to assure that a change in QL on one drawing is also reflected on other drawings showing the affected components
- Create validation reports that compare *SetRoute* to CIS

Failure modes and effects analysis was also performed on the design process vulnerabilities, concluding that several consequences had no barriers to prevent them from occurring.

In addition, CAR-05-083 Action 24 was an action to screen all tagged SSC's against CIS and *INtools* to verify there are no discrepancies between QL holds or design status for SSC's on order, in inventory, or installed (to be completed by 12/15/05 and after other Vulnerability Assessment recommendations from the RCA are implemented).

- **CAR-05-099, Revision 0 (Level 2), dated 6/2/05, "Required data in the controlled state in CIS is inaccurate"** – 208 individual components with incorrect data affecting 306 records were found. Causes included (1) batch inserts of data into the controlled state of CIS and (2) incomplete checking of records when moving from the working to the controlled state in CIS. Most of the actions are pending, with the due dates extended twice – one action includes elevating awareness of accountability for personnel having a role processing data in CIS, which is planned for implementation in November 2005 (due date is 11/30/05).
- **24590-WTP-SV-QA-05-422, Revision 0, dated 7/14/05, "Follow-up to CAR 04-238 and SV-QA-04-627"** – scope was to verify the input, output, change, and error controls in CIS were effectively providing reliable data quality. The SV identified additional instances of non-compliance and drew several conclusions:

- Actions taken to date have not effectively addressed the extent of condition and fixed the quality of CIS data
- Actions taken failed to address the input, output, and change controls for ensuring the quality of legacy and current data
- Actions taken to prevent recurrence did not do so because they only “monitored” recurrence
- Behavioral aspects associated with data entry were not adequately addressed

CAR 05-099, generated by Engineering, was cited as the document that would address data quality errors in CIS. Two recommendations were made:

- RITS-QA-05-704 – potential conditions adverse to quality could occur if *INtools* data is used for quality-affecting activities prior to being approved and moved to the controlled state in CIS
- RITS-QA-05-705 – define and implement proper controls for quality-affecting activities requiring utilization of CIS data (outputs and data transfers to other electronic systems, defining definitions and use of data across systems)

The SV was “unsat” and recommended follow-up SV’s in this area.

- **24590-WTP-MAR-ENG-05-0012, dated 10/14/05, “Configuration Management Assessment – September 2005”** – a performance-based assessment focusing on adequacy and effectiveness of planning, implementing, and overseeing the CM program, as well as process improvement initiatives. Two CAR’s were issued for inconsistencies between CIS and P&ID component tag numbers:
 - **CAR-05-186, Revision 0 (Level 2), dated 8/11/05, “Components on subcontractor as-built drawing (for Cooling Towers) not entered in CIS”** – cause was cited as inattention to detail by the responsible engineer, as well as a process problem with P&ID/CIS software that made it incapable of providing line numbers for vendor P&ID’s. This was identified as a result of the BNI review of the effectiveness of its actions in addressing ORP’s AFI A-04-ESQ-RPPWTP-011-A01, “Failure to document known deficiencies relative to subcontractor CM input to CIS on contractor deficiency tracking systems.” The software problem was fixed, and the extent of condition review for other contractor P&ID submittals is pending (due date 11/7/05)
 - **CAR-05-217, Revision 0 (Level 2), dated 9/15/05, “Discrepancies between P&ID and CIS”** – repeat problems with the FSW P&ID versus component data in CIS, supposedly corrected via previously closed CAR 04-096

The MA also reviewed 63 CAR’s related to CM, originated over the period June 2004 through May 2005, to determine if any discernable patterns or adverse trends were present. With the exception of the adverse trend involving inadequate quality level implementation documented in CAR 05-083, no other adverse trends were identified. The assessor noted that CAR-04-238 was not listed as one of the CAR’s reviewed, even though it fell within the

stated review period. The MA also reviewed CM-related surveillances (SV) conducted by QA and Engineering Performance Assurance, to determine if the surveillances adequately covered CM functional elements. The MA concluding the surveillances had provided adequate coverage. However, the Design oversight concluded the manner in which the CAR's were segregated for review, and the lack of consideration of recent SV's for determining if CM-related performance patterns or adverse trends existed, appeared to contribute to not identifying the adverse trend associated with CIS data completeness and quality.

The Design oversight determined CIS had a history of problems over the last two years, which have been documented by several organizations (OSR, BNI Engineering, BNI Quality Assurance) in various reports (inspections/assessments, surveillances, management assessments, etc.) with corrective actions and recommendations initiated (Corrective Action Reports [CAR], Recommendations and Issues Tracking System [RITS] items, etc.) and implemented. These problems typically relate to missing or inaccurate data. Many actions have been completed, the majority of which have focused on process revisions and fixing the identified conditions. However, in most cases the potential or actual impact of the identified conditions on downstream quality-affecting activities was not evaluated and addressed, nor were the barriers that were supposed to prevent the occurrences (process checking requirements) evaluated. The fact that the design procedures required source document confirmation in order to use CIS data for quality affecting activities, does not totally mitigate the error potential of the large number of Engineering personnel who interact with CIS, if verification is not adequately performed.

Consequently, the actions taken have not been effective in preventing CIS data problems, and based on the above data and analysis, the Design oversight concluded CIS does have a negative trend. This negative trend needs to be addressed, potentially via a Root Cause Analysis. During factual accuracy interviews the Contractor announced it was pursuing a Root Cause Analysis for CIS data problems. This will be tracked by AFI A-05-AMWTP-DESIGN-020-A03.

INTools Analysis

The Design oversight reviewed the following additional documents to determine whether the *INTools* database is subject to the same problems as CIS and the extent to which *INTools* is effectively supporting its CM objectives:

- 24590-WTP-GPG-J-018, Revision A, dated 5/30/03, Design Guide: *INTools* Database
- 24590-WTP-CAR-QA-04-080, Revision 0 (Level 2), dated 6/11/04, Discrepancy on data in *INTools*
- 24590-WTP-CAR-QA-04-214, Revision 0, dated 11/16/04, Instrument datasheet versus P&ID data
- 24590-WTP-SV-QA-05-286, Revision 0, dated 6/22/05, Follow up to CAR 24590-WTP-CAR-QA-04-214, *INTools* versus primary design document
- 24590-WTP-RITS-QAIS-05-795, dated 8/16/05, Supplier design component identification process gap

Background

INTools is the CM database in which instrument data is generated and stored. *INTools* generates unique CTN's for instruments, which serve as a link to transfer data to the CIS database. When an instrument component is tagged on a P&ID, V&ID, etc., the instrument data is automatically populated into the design drawing. *INTools* contains a record for every instrument tag, component number, and instrument cable number. The data is used to generate instrument index reports, and datasheets to support procurement. The data generated for instrument numbers by *INTools* is communicated to CIS to transmit to CMMS.

The Design oversight reviewed CAR's associated with *INTools* to determine if an adverse trend existed. Two CAR's were identified in calendar year 2004, with no reports to date in 2005. Both CAR's from 2004 documented problems with the correctness of seismic information on instrument data sheets issued for purchase. CAR 04-214 was written based on identification of additional examples/repeat problems with instrument datasheet seismic information because of ineffective corrective action to CAR 04-080. The extent of condition was evaluated and addressed in CAR 04-214 including the cause for ineffectiveness of the CAR 04-080. Several corrective actions were defined and completed. QA performed a follow-up surveillance SV-QA-05-286 for CAR 04-214 in June 2005 to confirm corrective and preventive actions were effective and sustained. One hundred instruments were selected and reviewed for consistency of Quality Level (QL), Seismic Category, and Seismic boundary between the associated P&ID and *INTools*. One instrument was identified, which had a different QL on the P&ID than in *INTools* (caused by a legacy problem). Because of this, the SV was deemed "unsat" and another CAR was written (CAR 05-123). However, due to the single error identified, the CAR was classified as Level 1.

The assessors interviewed the Contractor individual responsible for the *INTools* database, as well as a user of the database to determine how well it is currently functioning. These individuals noted few recent problems with the database and use of the data in downstream activities. They stated this was due in part to the weekly queries of the database to identify and address questionable data. Problems identified from the query are communicated promptly to responsible discipline engineers for resolution. In addition, the query results are informally considered for the existence of possible trends. No trends have been identified to date. Contractor personnel also noted accuracy and completeness of *INTools* data is checked after it is integrated into documents reviewed and approved through normal design and procurement processes, which provides a barrier for assuring the accuracy of the data used in downstream activities.

The Design oversight concluded *INTools* was functioning effectively as a CM database and does not have a negative trend based on corrective action history.

InfoWorks/EDMS Analysis

The Design oversight performed a walk down of the controlled stick files of Field PADC. Specifically reviewed were five controlled stick files (BOF Technical, BOF Craft, LAW Technical, LAW Craft, and HLW/PRT Technical). Each of this stick files had between 20 to 40

controlled stick files. The reviewed consisted of one print for every other stick file by random selection to record the print number, revision, and posted changes. The field notes were then checked to the *Infoworks* status. The review also verified the design changes listed were contained in the books kept with the files. A total of over 50 prints were reviewed. No discrepancies were found in the prints and the design change documents were located in the books next to the prints. However, two questions were left for the Contractor PADC resolve. One involved an uncontrolled set of prints in the LAW CRAFT stick files. The prints were for concrete formwork and were clearly marked uncontrolled. The question asked was why were they in the controlled stick set and how were they being utilized. The second question involved two subcontractors who prints were on the controlled stick file for steel erection. No change control devise other than revision was available for these prints, but the revision process is so time consuming, it was unclear how changes to these prints were being processed. No document control issues were identified.

Conclusions:

The Design oversight concluded the following relative to the effective implementation of the CM Program:

- 1) Based on the BOF system walk and CM document comparison, the Turnover process from Subcontractors to BNI and subsequently from BNI to C&T need to emphasize Configuration Management review as part of the turnover process. No action is required at this time.
- 2) The CM Database CIS has a negative trend and needs further attention, possibly with a significant CAR/RCA, to determine how it should be accomplishing its mission of both design CM for configured items and its future mission for operational CM of components. This is tracked by the previously identified AFI A-05-AMWTP-DESIGN-020-A03.

Review of Contractor Process for CM Assessment (D-05-Design-020)

Appendix D - Assessment Note D-05-DESIGN-RPPWTP-0016-03

DESIGN OVERSIGHT NOTE

Design oversight Note Number: D-05-DESIGN-020-03

Assessors Names(s) James Adams Dates of Inspection: Oct 17-Oct 28, 2005

Area/Items(s) Reviewed: BNI Management Assessment and Oversight

The Design oversight reviewed the Engineering management assessment (MA) schedule, relevant management assessments (MA), the QA audit schedule and relevant audits, and the associated corrective action reports (CAR) and their closeout surveillance reports relative to the topic of configuration management. The assessors also interviewed the Engineering and Quality Assurance management for their interpretation of the results of the data for developing trends.

Observations and Assessments

Engineering Management Oversight

Documents Reviewed:

- 24590-WTP-CAR-05-096, Revision 0, dated July 19, 2004
- 24590-WTP-CAR-QA-04-134, Revision 0 (Level 1), dated August 19, 2004, CIS updates
- 24590-WTP-CAR-04-238, Revision 0, dated December 14, 2004
- 24590-WTP-MAR-ENG-04-0016, *Component Information System (CIS) Management Assessment Report-CIS Implementation*, dated December 21, 2004
- 24590-WTP-SV-QA-04-627, Revision 0, dated December 23, 2004, Effectiveness Follow up for CAR 03-144, Revision 1
- 24590-WTP-CAR-QA-05-035, Revision 0 (Level 2), dated March 10, 2005, Pipe spool CTN numbers not in CIS database
- 24590-WTP-CAR-QA-05-083, Revision 0 (Level 4), dated May 13, 2005, Gaps in the margin of quality level information from design documents to procurement documents
- 24590-WTP-CAR-05-099, Revision 0, dated June 02, 2005
- 24590-WTP-SV-QA-05-422, Revision 0, dated July 14, 2005
- 24590-WTP-PL-ENG-04-0003, Revision 5, *2005 Engineering Processes Surveillance Plan and Schedule*, dated July 20, 2005
- 24590-WTP-CAR-05-217, Revision 0, dated September 15, 2005
- 24590-WTP-MAR-ENG-05-0012, *Configuration Management Assessment-September 2005*, dated October 14, 2005

The design oversight reviewed the documents listed above to verify the engineering oversight process was identifying and correcting issues via the corrective action program. Specifically, this design oversight reviewed the corrective action reports and oversight documentation associated with the Component Identification System to determine if problems previously identified by DOE ORP in last years report under Assessment Follow-up Item (AFI) A04-ESQ-RPPWTP-011-A01, remained closed or re-developed. The AFI had previously been closed based on the Design Process Oversight review of the closed CAR-05-096 in January

2004. However, following the writing of CAR-04-238 and the follow up closeout surveillances SV-QA-04-627 and SV-QA-05-422, the issue re-appeared in a series of CARs ending with the most recent CARs (CAR-QA-05-099 and CAR-QA-05-217) which have yet to be closed.

The design oversight determined the problem had re-appeared, but were unable to locate the reference to these CARs in the recent self assessment 24590-WTP-MAR-ENG-05-0012, *Configuration Management Assessment-September 2005*, dated October 14, 2005. This appeared to be based on the constrained CAR search of June 2004 and May 2005. This constraint prevented the assessment from identifying a significant issue thus weakening the self-assessment process. Engineering and Quality Assurance management were interviewed relative to the recent issues and stated they were aware of the issues with CIS, as noted in the surveillances and CARs. However, the self assessment had not reported on this issue due to the timeline search of the CARs.

Quality Assurance Oversight

Documents Reviewed

- 24590-WTP-SC-QA-01-00, Revision 11, *WTP Quality Assurance Internal Audit Schedule*, dated April 27, 2005
- 24590-WTP-IAR-QA-04-011, Revision 0, *Field Engineering*, dated October 18, 2004
- 24590-WTP-IAR-QA-04-013, Revision 0, *Quality Control*, dated October 29, 2004
- 24590-WTP-IAR-QA-04-010, Revision 1, *Design Execution Audit*, dated January 04, 2005
- 24590-WTP-RCa-MGT-05-0002, Revision 1, *Root Cause Analysis for Quality Level Implementation*, dated August 18, 2005
- All CARs mentioned above

The Quality Assurance organization was interviewed and stated the long list of CARs were required due to the existing language of the procedures, but did not believe any significant CARs existed since data in CIS was not used in a quality affecting manner. The Engineering management does not necessarily concur with this statement. It was acknowledged that existing procedures did not state when data quality requirements were necessary (controlled state) to preclude the effect of inaccurate data by downstream users.

Conclusion:

The Design oversight concluded the Contractors Engineering and QA organizations had provided assessments and independent audits, which provided useful input for corrective actions. However, the assessors concluded the CM oversight data presently in place should have been sufficient for BNI to take actions to make some adjustments in the CM Plan and clarify and implement procedures to improve the quality of the CIS data based on the CARs already in place. The lack of identification of the root cause will be tracked by AFI A-05-WED-RPPWTP-A-03.

Task# ORP-WTP-2005-0291

E-STARS™ Report
 Task Detail Report
 01/17/2006 0133

TASK INFORMATION

Task# ORP-WTP-2005-0291

Subject CONCUR: (05-WED-052) TRANSMITTAL OF U.S. DEPARTMENT OF ENERGY (DOE), OFFICE OF RIVER PROTECTION (ORP) DESIGN OVERSIGHT REPORT: REVIEW OF CONTRACTOR PROCESS FOR CONFIGURATION MANAGEMENT (CM) (D-05-DESIGN-020)

Parent Task# **Status** CLOSED

Reference 05-WED-052 **Due**

Originator Almaraz, Angela **Priority** High

Originator Phone (509) 376-9025 **Category** None

Origination Date 11/22/2005 1346 **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
 J. J. Short, OPA
 J. E. Adams, WED
 W. F. Hamel, WED
 J. E. Orchard, WED
 J. R. Eschenberg, WTP

S.J. Olinger, DEP

RECORD NOTE:
 Per procedure number DP-03 dated 12/1/05, technical direction letters are to have a disclaimer that is tailored to the circumstances. Letter no. 05-WED-052 should include the following disclaimer:

The technical direction herein is considered to be within the limitations of Contract Clause H.1 "Technical Direction" and does not meet any of the conditions described in paragraph (b)(1) through (4) of the clause. In the event the Contractor disagrees with this interpretation, it shall not proceed but shall notify the Contracting Officer immediately orally, and in writing within five working days in accordance with the Contract (Section H, Clause H.1 "Technical Direction").

ROUTING LISTS

1 Route List Inactive

- Adams, Jim E - Review - Cancelled - 01/17/2006 1333
Instructions:
- Orchard, John E - Review - Concur - 12/20/2005 1242
Instructions:
- Hamel, William F - Review - Concur - 12/20/2005 1241

RECEIVED
JAN 17 2006
DOE-ORP/ORPCC

Task# ORP-WTP-2005-0291

Instructions:

- Short, Jeff J - Review - Concur - 12/29/2005 0830
Instructions:
- Eschenberg, John R - Review - Cancelled - 01/17/2006 1333
Instructions:
- Schepens, Roy J - Approve - Cancelled - 01/17/2006 1333
Instructions:

ATTACHMENTS

No Attachments

COLLABORATION

COMMENTS

Poster Almaraz, Angela (Hanson, Arlene J) - 01/17/2006 0101

CLOSED

John Eschenberg signed letter 1/17/06.

TASK DUE DATE HISTORY

No Due Date History

SUB TASK HISTORY

No Subtasks

-- end of report --

Task# ORP-WTP-2005-0291

E-STARS™ Report
Task Detail Report
11/22/2005 0146

TASK INFORMATION

Task#	ORP-WTP-2005-0291	Status	Open
Subject	CONCUR: (05-WED-052) TRANSMITTAL OF U.S. DEPARTMENT OF ENERGY (DOE), OFFICE OF RIVER PROTECTION (ORP) DESIGN OVERSIGHT REPORT: REVIEW OF CONTRACTOR PROCESS FOR CONFIGURATION MANAGEMENT (CM) (D-05-DESIGN-020)		
Parent Task#		Due	
Reference	05-WED-052	Priority	High
Originator	Almaraz, Angela	Category	None
Originator Phone	(509) 376-9025	Generic1	
Origination Date	11/22/2005 1346	Generic2	
Remote Task#		Generic3	
Deliverable	None	View Permissions	Normal
Class	None		

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.

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W. F. Hamel, WED
J. E. Orchard, WED
J. R. Eschenberg, WTP
S.J. Dingers, Der

ROUTING LISTS

1 Route List Active

- Adams, Jim E - Review - Awaiting Response
Instructions:
- Orchard, John E - Review - Awaiting Response
Instructions:
- Hamel, William F - Review - Awaiting Response
Instructions:
- Short, Jeff J - Review - Awaiting Response
Instructions:
- Eschenberg, John R - Review - Awaiting Response
Instructions:
- Schepens, Roy J - Approve - Awaiting Response
Instructions:

12/1/05
12/8/05
12/19/05 w/ comments
12/28/05 with COR title and attached Release Statement
1/3/06 w/ comment
Comments address 1/4/2006

ATTACHMENTS

No Attachments

COLLABORATION